

# Toho Gas Group Business Plan for Year Ending March 31, 2021

March 31, 2020  
Toho Gas Co., Ltd.

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Earning forecasts and other forward-looking statements in this document are management's current views and beliefs in accordance with data currently available, and are subject to a number of risks, uncertainties and other factors that may cause actual results to differ materially from those projected.



# Introduction

- The energy industry has faced a drastic transitional period of rapid progress in reduction of carbon emissions and digital technology that affects customers' lifestyles and the industrial structure in addition to the intensifying competition due to full liberalization of retail markets.
- In FY2019, economic activities in our service region have become more stagnant, affected by the trade conflict between the United States and China, and the spread of the new coronavirus. Under these circumstances, Toho Gas made steady efforts to concretize and implement strategies envisaged under the Medium-Term Management Plan (fiscal year 2019-2021).
- In FY2020, the second year of the medium-term management plan, we will make steady progress toward realizing the plan, and aim for sustainable growth with a view to the future.

## Overall perspective of the Medium-Term Management Plan (Target period: FY2019 – 2021)

Go with Energy—Go beyond Energy



In line with the efforts for further growth in the city gas business, the Plan focuses on the development to become a total energy provider of new services together with city gas, LPG and electricity, while accelerating structural reforms for the future by enhancing the Group's businesses and developing new businesses.

# 1. Strategy 1 Further Growth of the City Gas Business

- (1) Efforts to Support the Lives of People in the Region
- (2) Efforts to Support Businesses in the Region
- (3) Stable Energy Procurement at a Reasonable Price
- (4) Secure Stable Supply and Safety
- (5) Expansion of Natural Gas Service Areas



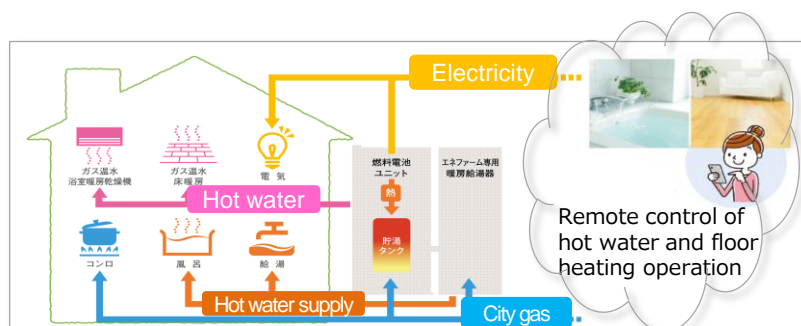
# 1. Strategy 1 Further Growth of the City Gas Business

## (1) Efforts to Support the Lives of People in the Region

- As a general partner of customers' daily lives, we will offer proposals for a comfortable and ecological life, provide a wide range of services tailored to the various lifestyles of customers. In addition, by leveraging the strength of the Group's "security and service system close to the community", we will enhance support in the event of a problem and continue to be a company of choice for our customers.

### ■ Propose comfortable and ecological life

- Promote sales expansion of highly efficient gas appliances with improved convenience for customers for spread of smart house and zero-net-energy housing.
- We will start selling the new model of ENE FARM on April 22. In addition to improving power generation efficiency (conventional model 52% → 55%), it is equipped with an IoT function to realize remote control of city gas appliances. In addition, power generation can be continued even during a power outage.



### ■ Provide a wide range of life support services

- Continue to expand our living-related service menu, in addition to "Raku Raku Kurashi Support (a service aimed at making customers' lives comfortable)", "Raku Raku Maintenance (a gas equipment maintenance service)" and "Raku Raku Lease (a gas equipment lease service)".
- As an example, in coordination with Air Trunk Co., Ltd., preferential use of home delivery storage service according to city gas and electricity contracts (limited to some areas).

### Strengthening and expanding housing renovation

- We launched a new service for renovation, "My House Meister", responding to a wide range of customer needs related to housing and living as a partner in the area of daily living.
- In July 2019, we launched this service in the Mie area and will consider expanding service area in the future.



### ■ Enhancement of security and service system close to the community

- Around-the-clock phone service for customers expanded to cover the acceptance of reservations for gas connections on top of dealing with requests for repair service. This is designed to enable customers' access to Toho Gas staff 24 hours a day, 365 days a year as part of our efforts to make our service more convenient and expeditious for customers while relieving them of any source of concern.
- High quality services including a trouble-shooting maintenance and repair service offering on-site repair of gas equipment up to 9 p.m. is provided.





## (2) Efforts to Support Businesses in the Region

- Toho Gas proposes to customers a shift from oil-based fuels to gas, the introduction of energy-efficient gas facilities and the use of diverse energy sources. These measures enable customers to conserve energy, reduce CO<sub>2</sub> emissions and curtail business costs. We are also committed to providing high-quality services (total business support) to customers while using our advanced, up-to-date technologies. By doing so, we can contribute to manufacturing and other business development in our service area.

### Highly efficient and diverse use of natural gas

- Promote fuel conversion for oil fuel customers by proposing high-efficiency burners utilizing our combustion technology.
- Promote the use of city gas in line with customers, such as energy savings, CO<sub>2</sub> savings, cost savings, and BCP by proposing highly efficient gas air conditioning and cogeneration.

#### GHP XAIRⅢ

- ◆ Realizing energy saving and power saving with the latest gas air conditioner "GHP XAIRⅢ" will start on April 2020.



GHP XAIRⅢ

- Promote fuel conversion for oil fuel customers by proposing high-efficiency burners utilizing our combustion technology.

### LNG Bunkering

- ◆ Contribute to the conversion of ships to LNG fuel by utilizing the knowledge of the demonstration test conducted at Nagoya Port in November 2019.

### Provision of total business support

- Proposal of energy saving and cost saving using heat storage material by our original technology.
- Cost-saving proposals for utility equipment other than energy, such as water treatment equipment and compressors.
- Improve added value by utilizing digital tools, such as emergency response and maintenance of industrial furnaces.

#### High density thermal storage material

- ◆ We developed heat storage material with about 10 times the heat storage of water.
- ◆ We will actively use our cogeneration system in various fields to promote energy conservation and cost cutting. For example, unused exhaust heat will be stored as thermal energy using the cogeneration system.



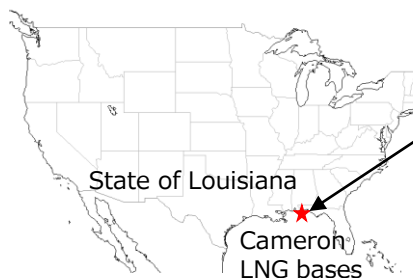
Utilization of our original heat storage material

- Further diversify procurement including procurement from new areas to ensure stable LNG procurement at reasonable prices and work to improve flexibility in procurement systems, including LNG receiving facilities.
- Steadily promote measures for securing stable supply and safety as the basis for the gas business.

### Diversification of LNG procurement

- In order to ensure stable LNG procurement at reasonable prices, we will continue to implement measures to diversify procurement areas, price indexes and contract types.
- Started procurement from the Cameron Project in the United States, and expanded the number of suppliers under long-term LNG contracts to six countries.
- Utilize LNG carriers partially invested by Toho Gas to transport LNG from the United States.

#### Cameron LNG Project



LNG bases



LNG carriers partially invested by Toho Gas "Diamond Gas Sakura"

### Flexible operation of LNG receiving bases

- Utilize of Cross Ise Bay Gas Pipeline and LNG transfer between bases.
- Enhance inter-base operations and establishment of flexible and efficient operation of the terminals.

### Advance security measures and disaster control measures

- Advance security measures including replacement of an aging facility and improvement of a emergency security system in association with the expansion of gas supply areas.
- Promote measures against earthquakes, storms and floods in terms of hard and soft infrastructure.
- In the face of spreading new coronavirus infections, we will strengthen anti-infection steps and curtail some business operations based on our business continuity plan (BCP).

#### Flood damage countermeasures

- We will incorporate anti-flooding systems into governors (pressure adjusting equipment) to ensure stable gas supply in the event of a typhoon or torrential rain.



#### Use IT to speed recovery after a disaster

- We will make gas-connection work after a disaster or accident more expeditious through the active use of IT. For example, arranging for gas-connection work will be accepted via the internet.

#### Joint training to enhance cooperation in the event of a disaster



Earthquake assumption training with Nagoya City Waterworks & Sewerage Bureau



Photo courtesy by the Ground Self-Defense Force  
Material and equipment transport training with Japan Ground Self-Defense Force

# 1. Strategy 1 Further Growth of the City Gas Business

## (5) Expansion of Natural Gas Service Areas

- We will expand gas pipeline networks for city gas, broaden gas supply areas and increase the capacity of gas transportation. In addition, we will provide natural gas to a broader area by strengthening the supply system through the active use of LNG tank trucks.

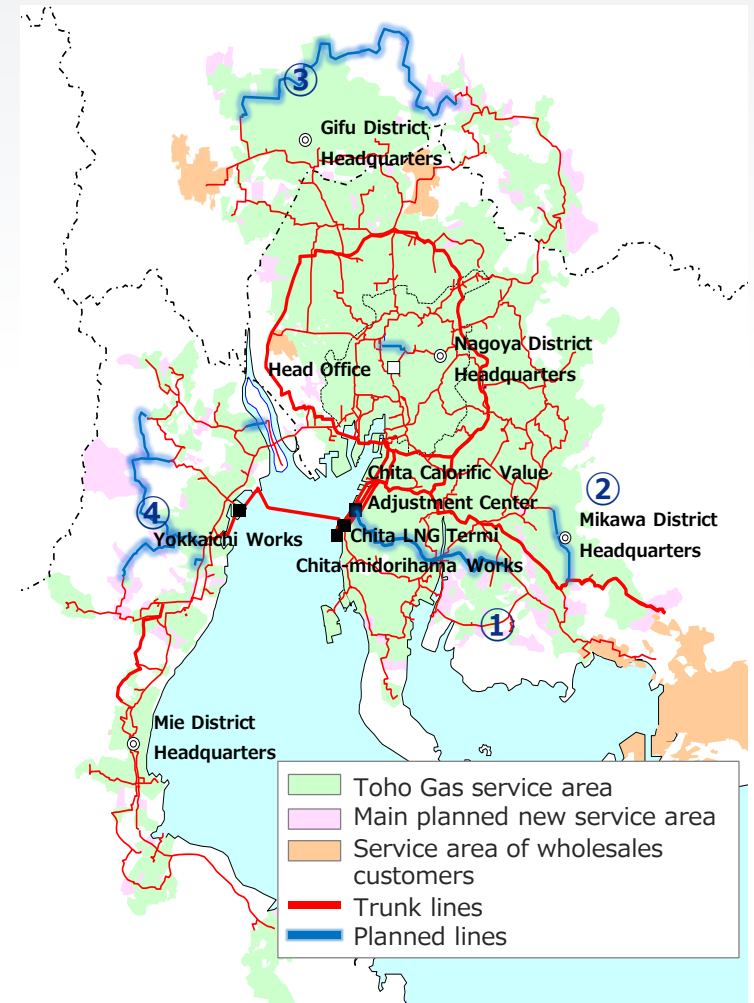
### Expansion of Natural Gas Service Areas

- We will enhance gas transportation capacity by laying trunk gas pipelines in southeastern Aichi Prefecture.
- Expansion of our city gas service area by the trunk line expansion works in Gifu and Mie prefecture.

Main planned lines		Length
Aichi	①Nanbu trunk line(Chita - Anjo)	30km
	②Daimon – Sakazaki line	10km
Gifu	③Motosu - Gifu – Minokamo line	60km
Mie	④Inabe – Yokkaichi – Kameyama	50km



- By deploying LNG tank trucks, we will stimulate gas demand not only in the three prefectures in the Tokai region but also in peripheral areas and the Hokuriku region.





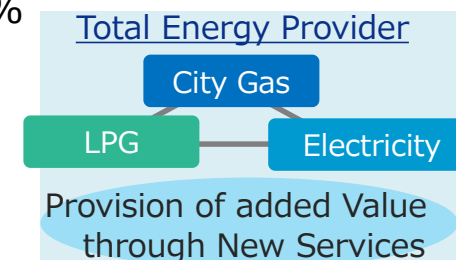
## 2. Strategy 2 Development into a Total Energy Provider

- (1) Provision of Added Value through New Services
- (2) Strengthening of the LPG Business
- (3) Expansion of the Electricity Business



## (1) Provision of Added Value through New Services

- We will increase the total of about 3 million customers by about 1% every year by offering optimal proposals for the three energies —city gas, LPG and electricity.
- In addition to direct contact with customers, we will steadily provide new services by enhancing digital channels and provide one-stop added value beyond energy supply.



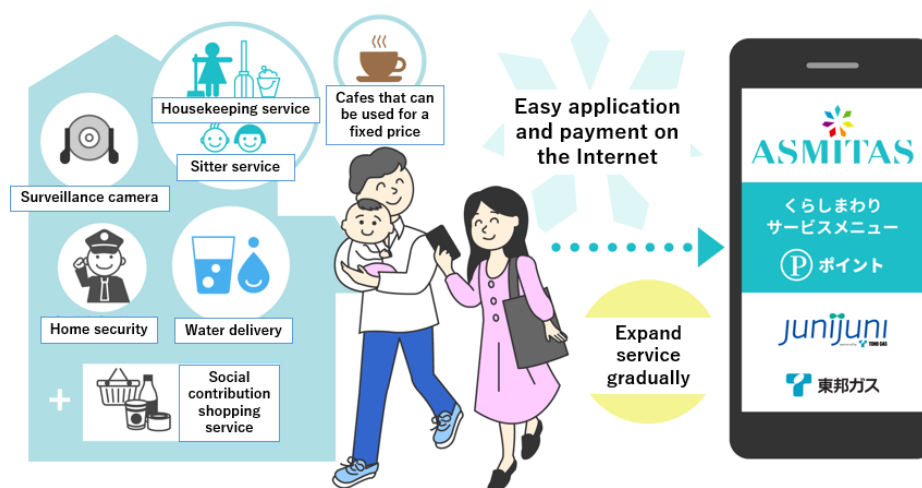
### Provision of new services

- Under the concept of “providing services that satisfy tomorrow's lifestyles,” the EC site \* “ASMITAS” have launched from March 24, 2020 as a life service platform that provides services other than energy.



#### Life service platform “ASMITAS”

- ◆ Provide one-stop services that make everyday life more convenient, comfortable, safe and secure with smartphones as contacts.
- ◆ The first batch of services being provided are surveillance of vulnerable people through the installation of network cameras, home security services, water delivery through water servers, housework services, fixed-rate café services and operation of online shopping sites, with part of the sales earmarked for donations in order to contribute to society.\*
- ◆ As well as energy supply, we will continue to expand a wide range of services to suit various lifestyles of customers.



\*In order to use the social contribution shopping service, a membership registration is required on the dedicated site “juni juni sponsored by TOHO GAS

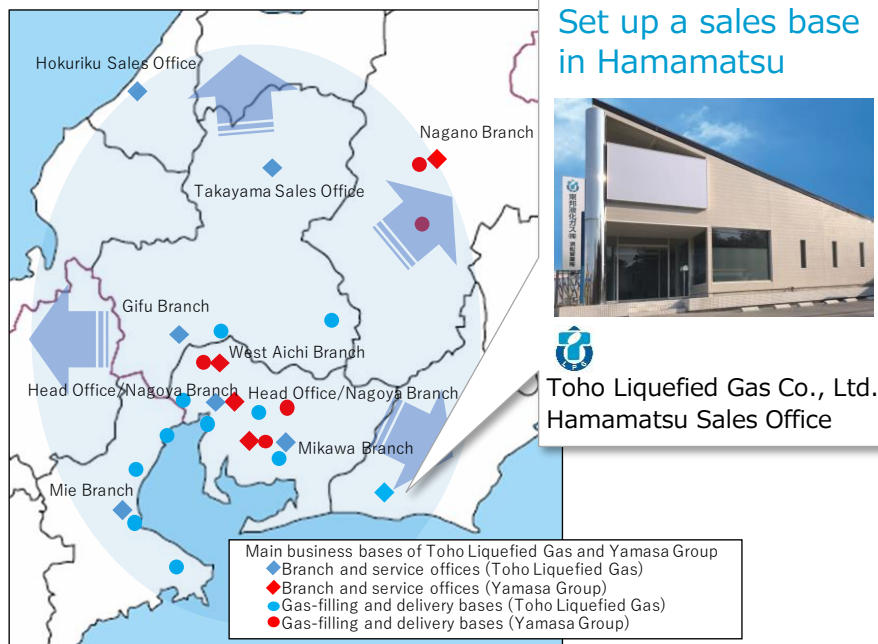
## 2. Strategy 2 Development into a Total Energy Provider

### (2) Strengthening of the LPG Business

- Expand business activity areas from the core areas of the three Tokai prefectures to increase the number of customers and sales volume, and reinforce the business foundation.

#### Business deployment to wider areas

- Expand business activity areas to Hokuriku, Shiga, Shizuoka and Nagano.
- Set up a sales base in Hamamatsu in April 2020 to expand the area toward Shizuoka.
- Promote the further expansion of demand by using the business bases of both Toho Liquefied Gas Co., Ltd. and the Yamasa Group.



#### Reinforce business foundation

- Expand shipping facilities, and strengthen delivery networks and widen involvement in distribution networks in cooperation with other companies.
- We aim to realize stable and reasonably-priced LPG procurement by using non-international cargo vessels "Hourinmaru No.1" jointly owned by Toho Liquefied Gas Co., Ltd. and by taking advantage of Meiko LPG terminal, one of the biggest secondary terminals for gas companies in Japan.



Coastal ship "Hourinmaru No.1"



LNG bases

## 2. Strategy 2 Development into a Total Energy Provider

### (3) Expansion of the Electricity Business

- Steadily increase power demand and diversify procurement to ensure stable electricity procurement at reasonable prices.
- Increase the introduction of renewable energy to respond to the further reduction of carbon emissions.

#### Enhancing services and low-cost and stable electricity procurement

- Implement measures such as sales promotion campaigns in cooperation with other companies.
- Start of verification test for new service development
- We aim to realize a stable and reasonably-priced power supply by optimizing the combination of procurement sources—power operators, wholesale markets for electricity and the Yokkaichi power plant.

#### Demonstration of virtual power plant (VPP) construction

- ◆ Toho Gas took part in the experimental project for building a virtual power plant (VPP) system (undertaken by the Ministry of Economy, Trade and Industry) in May 2019.
- ◆ Verification of power control technology utilizing multiple cogeneration systems.

#### Demonstration of home demand response (DR)

- ◆ The effects of a demand response (DR) adjustment by Toho Gas, aimed at enabling customers to save electricity continuously in an enjoyable way, will be verified from June 2020 on an experimental basis.
- ◆ We will develop power-cutting systems and hold events aimed at expediting power saving, both with the use of smartphone apps, in partnership with Nanzan University. By promoting such systems and events, which should be enjoyable for customers, we aim to develop new services.

Smartphone app



#### Expand the introduction of renewable energy

- Expansion by setting up in-house power sources and investing in renewable energy funds, etc.

#### Development of renewable energy power sources

- ◆ In FY2019, a total of 2.7 MW (5 locations) of solar power plants started operation, mainly in three Tokai prefectures.
- ◆ A solar power plant with an electricity production capacity of 1.4 megawatts currently under construction on the former site of a Toho Gas factory will begin operating in April 2020. In addition, we will promote the development of power systems using other renewable energy sources.



Solar power plant in Taketoyo-cho



Solar power plant on the old factory sites



### 3. Strategy 3 Taking on New Scopes

- (1) Reinforcement and Development of Group Businesses
- (2) Development of New Businesses





### 3. Strategy 3 Taking on New Scopes

## (1) Reinforcement and Development of Group Businesses

- Steadily expand Group businesses, particularly focused on the four scopes—comprehensive utility service business, renovation business, outside sales of production and supply technologies, and the use of our owned properties.

#### Strengthen comprehensive utility services business

- We installed gas air-conditioning systems at facilities in Okazaki, Toyota and Yokkaichi cities in fiscal year 2019. The plan is in response to the adoption of gas air-conditioning systems at many elementary and junior high schools in these cities.
- provide a one-stop service ranging from design, construction and execution to maintenance and management of energy generation facilities including air-conditioning systems, cogeneration, and hydrogen stations.

#### Strengthen renovation business

- Toho Gas will join hands with Toho Gas Group companies and ENEDO to steadily promote the housing renovation business. Thus, Toho Gas will play a supporting role for local people in their daily lives.
- We will offer renovation services in response to the diverse needs of customers. To that end, the Toho Gas Group will be united in deploying its marketing know-how, enhancing its technological expertise, expanding the range of products and services to be offered and adopting a business approach targeting a broader spectrum of customers.

#### Promote the expansion of outside sales of production and supply technologies

- We will step up the marketing of a new protective material for medium-pressure polyethylene pipes that were developed using our state-of-the-art pipeline technology called the “stream method,” and the new calorific value adjustment system that received the Japan Gas Association’s 2016 Technology Award.



New calorific value adjustment equipment

#### Use of our owned properties

- Promote development of Minato AQULS.
- Expand leasing business utilizing owned properties.
- Expanding rental meeting room business utilizing knowledge of own buildings.

#### Promote development of Minato AQULS

- We have installed our ENEFARM system in all condominium units developed by Mitsui Fudosan Residential Co., Ltd. to manage energy consumption there in an integrated manner and reduce the environmental load. People began living in the condominium units in March.
- Phase II development begins.



Areas of phase II development

#### a rental apartment complex “Hivi Casa”

- Following “Hivi Casa Mizuho”, which was completed in February 2020, a rental apartment complex is under construction on the site of the former Nakamura Sales Office in Nakamura-ku, Nagoya.



“Hivi Casa Mizuho”

\*“Hi Vi Casa” comes from “Hi” (hello, lively), “Vi” (viva, meaning energetic and active) and “Casa” (meaning house in Italian). The word is meant to express vitality and brightness backed by a prosperous life.

## (2) Development of New Businesses

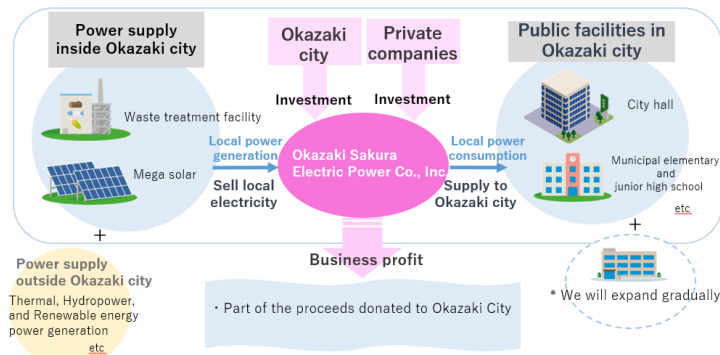
- Utilize the know-how and resources of business, actively engage in developing new businesses with the energy business at home and abroad.

### Domestic energy

- Utilize the know-how and resources of city gas, LPG, and power business operations to strengthen business development such as regional new power and renewable power generation.
- Regional power companies are regarded as contributing to regional economic development by promoting local production and local consumption of energy and making active use of the profit generated through business operations. Toho Gas took part in a project launched by a new utility company set up in Okazaki city. Toho Gas earlier participated in a project undertaken by another new utility company established in Matsusaka city.

#### Regional new electricity retail business in Okazaki city

- Toho Gas established Okazaki Sakura Electric Power Co., Inc. in March 2020 jointly with the City of Okazaki, NTT Facilities, Inc., Chubu Electric Power Co., Inc., and Okazaki Shinkin Bank.
- From July of the same year, electricity generated at the Okazaki Clean Center will be supplied to public facilities.

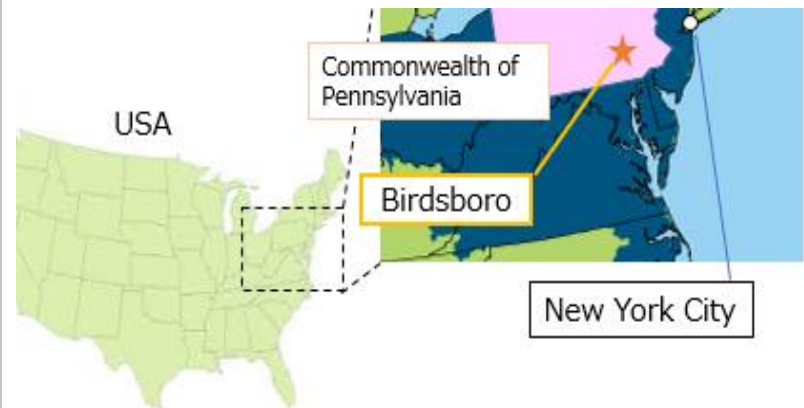


### Overseas energy

- Promote entering into the use of energy and LNG terminal businesses, and other businesses we can make the utmost of technologies and know-how of conduits outside Japan.
- Initiate overseas power generation business initiatives

#### Toho Gas took part in a gas-fired power project in the United States together with other companies.

- Toho Gas established a new company in March 2020 jointly with Saibu Gas Co., Ltd. and Hiroshima Gas Co., Ltd. The new company plans to acquire an equity stake in a gas-fired power project participated in by Sojitz Corp. and Kyushu Electric Power Co., Inc. in Birdsboro in the U.S. state of Pennsylvania.



## 4. Reinforcing the Business Foundation of the Toho Gas Group

- (1) Reinforcement and Use of Human Resources
- (2) Improvement of Efficiency
- (3) Technological Development for the Future
- (4) Reform of the Organizational Structure
- (5) Promotion of ESG Management



- Develop human resources to support the growth of the Group and realize flexible working styles to utilize human resources.
- Promote drastic efficiency, including the use of new and digital technologies.

## (1) Reinforcement and Use of Human Resources (2) Improvement of Efficiency

### Employment and development of diverse human resources

- In addition to recruiting new graduates, promote recruitment and development of diverse human resources, such as strengthening career recruitment and follow-up training.

#### Human resource development through an internal recruitment system

- ◆ Publicly recruit new businesses for young employees, and proposers of excellent ideas will be transferred to the business development department to develop human resources who can start new businesses.

#### Strategy workshop training

- ◆ Select leader classes in each department and develop them into management human resources who can lead business structure reforms into the future through in-house strategy formulation training.

### Realization of flexible working style

- Improve the telework environment, which also contributes to improved working style flexibility and emergency response.
- In addition to promoting the active participation of women and the elderly, we also work to support the balance between work and childcare, nursing care, and treatment so that promote a work-life balance for employees.

### Utilization of new and digital technologies

- Promote telework and paperless by introducing company-wide cloud type groupware.
- Consider advanced and efficient field work using tablets and drones.



Cloud usage

#### Utilization of drones in pipeline construction.

- ◆ Streamline on-site surveying and design work for pipeline construction by drone shooting and image processing.
- ◆ Also consider alternatives to visual inspection of gas pipelines in bridges.



### Review business processes

- Promote drastic efficiency of business by reviewing business flow and utilizing RPA.
- \*RPA will be installed in 130 operations by the end of FY2019, which will increase the efficiency by 74,000 hours/year.



## (3) Technological Development for the Future

- Focusing on technology development in new fields to lead to future growth and respond to the further reduction of carbon emissions.
- Utilize digital technology to develop new services, enhance existing services and promote efficiency.

### Initiatives for a hydrogen society

- Development of hydrogen supply infrastructure and utilization technology.
- Promote research into future technologies such as CO<sub>2</sub> separation and capture from combustion exhaust gas, and methanation utilizing CO<sub>2</sub>.

#### Development of hydrogen supply infrastructure

- ◆ Open hydrogen station in Toyota City by 2020 (5th).
- ◆ Promote cost reduction initiatives.



Centrair hydrogen station  
(Open in March 2019)

#### Development of hydrogen combustion technology

- ◆ Developed technology to use hydrogen as fuel at factories.

#### Participation in Hydrogen Utilization Study Group in Chubu

- ◆ Consists of 10 companies (including Toyota Motor Co., Ltd.,) working on hydrogen use, discusses supply chain and demand potential in the Chubu area, and the possibility of large-scale use of hydrogen.

### Utilization of digital technology

- Utilize the latest digital technologies to develop new services, enhance existing services, and improve efficiency.

#### Development of new services

- ◆ Virtual power plant (VPP) construction and demonstration of demand response (DR) for home use.
- ◆ Demonstration tests with start-up companies to utilize quantum annealing technology.

#### Enhance existing services

- ◆ Utilize data such as energy consumption and owned equipment to strengthen proposals for products and services that meet customer needs.
- ◆ Enhanced lineup of gas appliances equipped with IoT functions.
- ◆ Diversification of fee settlement methods by introducing LINE Pay.

**LINE Pay**

#### Promotion of efficiency

- ◆ Promotion of telework and paperless.
- ◆ Utilization of drones for route survey of new pipelines.
- ◆ Development of gas pipe deterioration prediction system using AI.



## 4. Reinforcing the Business Foundation of the Toho Gas Group

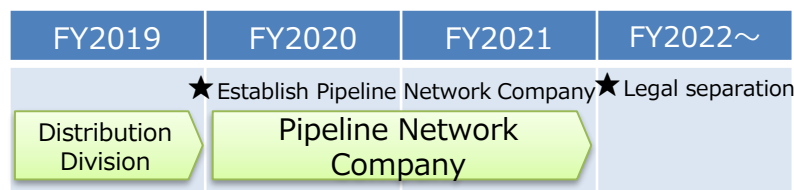
### (4) Reform of the Organizational Structure/ (5) Promotion of ESG Management

- In addition to smoothly and surely taking measures to legally separate the pipeline division, we will promote a transformation of organization so that we can flexibly respond to changes in the environment for sustainable growth.
- Promote ESG management by developing community activities that contribute to the SDGs and strengthening corporate governance.

#### (4) Reform of the Organizational Structure

##### Actions toward legal separation of gas pipeline divisions

- Establish Pipeline Network Company in April 2020, aiming for legal separation of pipeline division in April 2022.
- In order to ensure neutrality and transparency, efficient business operation, and ensure group governance, Pipeline Network Company has the necessary internal control and corporate functions as an independent operating company.
- Promote smooth and reliable spin-off based on a two-year trial of the business structure.



##### Transform into an organization that is flexible to environmental changes

- In the sales department, organizational reforms were conducted to review the planning function and the front sales function, which plays a role of contact with customers, in order to provide integrated products and services that meet customers' needs.

#### (5) Promotion of ESG Management

##### Promotion of environmental and social activities

- Set goals for business activities and environmental impact reduction at customers.
- Develop local community activities that contribute to the SDGs with local governments.

##### Established Special subsidiary (Toho Flower)

- ◆ Promote the creation of workplaces where people can play active roles by creating more jobs for people with disabilities and establishing employment.



##### Promotion of health management

- ◆ Implemented "Health and Body Health Promotion Measures for Employees".
- ◆ Certified as an excellent health management corporation 2020(White500).



##### Toho Gas Forest "Seto"

- ◆ A third forest conservation activity following Odai (Mie Prefecture) and Mitake (Gifu Prefecture), planting and thinning trees in Seto City, Aichi Prefecture.

##### Reinforce of corporate governance

- Strengthen internal controls through thorough risk management and compliance for disasters and cyber security.
- Promotion of ESG management based on international standards.

## Energy Sales

	FY2019 (Estimated results)	FY2021 (Medium-term management plan)
Natural Gas Sales Volume (Including LNG)	3.89 billion m <sup>3</sup>	4.1 billion m <sup>3</sup>
LPG Sales Volume	492 thousand tons	490 thousand tons
Electricity Sales Volume	1.0 billion kWh	1.0 billion kWh

## Investment Plan

	FY2019 (Estimated results)	Cumulative total from FY2019-21 (Medium-term management plan)
Investment into the city gas business	27.5 billion yen	80.0 billion yen and over
Investment into growth business	23.0 billion yen	60.0 billion yen and over