



The Tokyo Gas Group FY2018-2020
management plan

GPS2020

Tokyo Gas Group - Initiatives
for Energy and for the Future -



GAS & POWER
+ SERVICE × GLOBAL

October 5, 2017

Tokyo Gas Co., Ltd.

Preface

I. Strengthening Bonds with Customers and Providing New Value (Key Strategy)

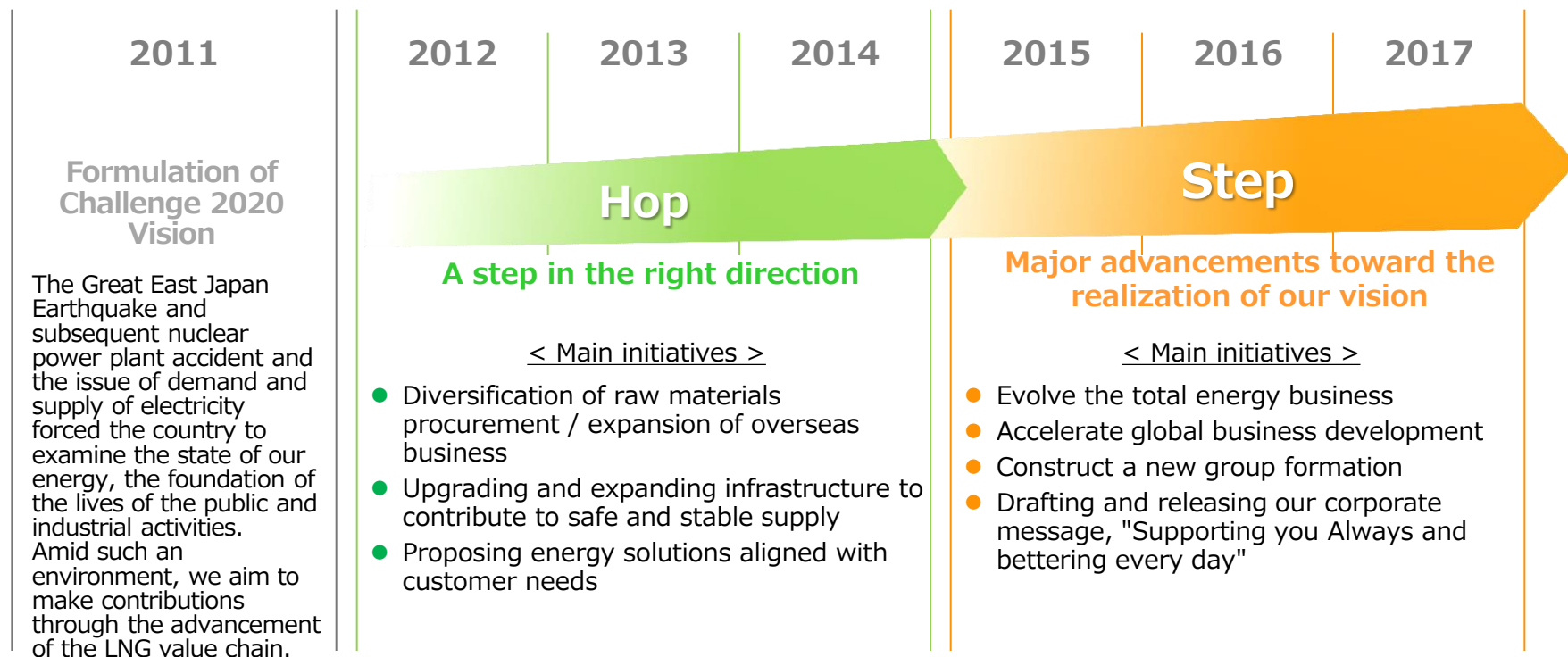
- Recommend Optimal Uses for “GPS (Gas & Power + Services)”
- Achieve Environmentally-friendly Energy Supply, Mainly for Natural Gas, in Overseas Markets
- Apply Aggressive Alliance Strategy with Various Players to Quickly Realize “GPS×G”

II. Initiatives for Strengthening Management Foundation for Supporting Key Strategies

- Enhance Energy Infrastructure
 - Raw Material Procurement and Production: Strengthen LNG Value Chain
 - Development of Power Source: Building an Optimal Power Source Portfolio Commensurate with the Growth in Stock for Sales
 - Pipeline : Become a Slim yet Powerful Pipeline Business Operator
- Digitalization/Innovation, and Technology Development Initiatives
- Strengthen Organization and Personnel Platform
- ESG (Environment, Society, Governance) Initiatives
 - Initiatives for Realizing a Low-carbon Society
 - Contribute to Achieving Sustainable Development Goals (SDGs)
 - Initiatives toward Ensuring a Successful Tokyo 2020 Olympic and Paralympic Games
 - Establish Governance

III. Major Indicators

- In November 2011, the Tokyo Gas Group released its Group Management Vision: "Challenge 2020 Vision - Initiatives by the Tokyo Gas Group for Energy and for the Future".
- In our previous management plans, **"Hop" (FY2012-2014)** and **"Step" (FY2015-2017)**, our goals were to realize a **total energy and global corporate group**. In addition to widely expanding our business domains and areas, and forming seven business domains, we also built a new group formation.



Positioning of the Jump Period

- During the “Jump” period, we will deploy the Tokyo Gas Group’s “GPSxG” system to generate real **new value** in “the things we can do” while pressing forward with ongoing a comprehensive vision of non-continuous reform (business transformation unprecedented in its boldness and fundamental reform of our organizational structure). **The 2020s will be a period of solid growth and forward movement.**

2018

2019

2020



Jump

Transition from "Goals" to "Achievements"

Through a variety of means, we will deliver **global** **gas** and **power** along with **services** that meet our domestic and overseas customers' needs

Total energy (GPS)

- Provide optimal energy featuring gas and electricity as a packaged service.
- Provide a one-stop offer for a full range of services designed to meet life stages and needs of residential customers.
- We will provide energy services and engineering for our commercial and industrial customers to reduce their energy usage and costs.



Global (xG)

- Establish offices in strategic areas and concentrate management resources to engage in proposal planning.
- Contribute to building energy infrastructure in coordination with the governments and enterprises in the fast-growing countries of Southeast Asia and other regions as the energy supply and demand structure of these regions continues to evolve.
- Build a firm foundation for profitability in North America and other regions where deregulation and market trading of energy is advancing, while acquiring and using the know-how that will contribute to our other businesses in Japan and abroad.

- As we go forward with our management planning, we are focusing here on three specific perspectives.
- The three perspectives are: **“The era of natural gas,” “The era of single-source providers of electricity and gas,”** and **“The era of multi-dimensional innovation fueled by rapid digital evolution”**.

The Era of Natural Gas

- With its excellent stability, favorable economics, and environmental characteristics, natural gas is an increasingly important energy source both in Japan and around the world.
- Going forward, natural gas will become more widely used and in more regions as it expands dynamically on a global scale.

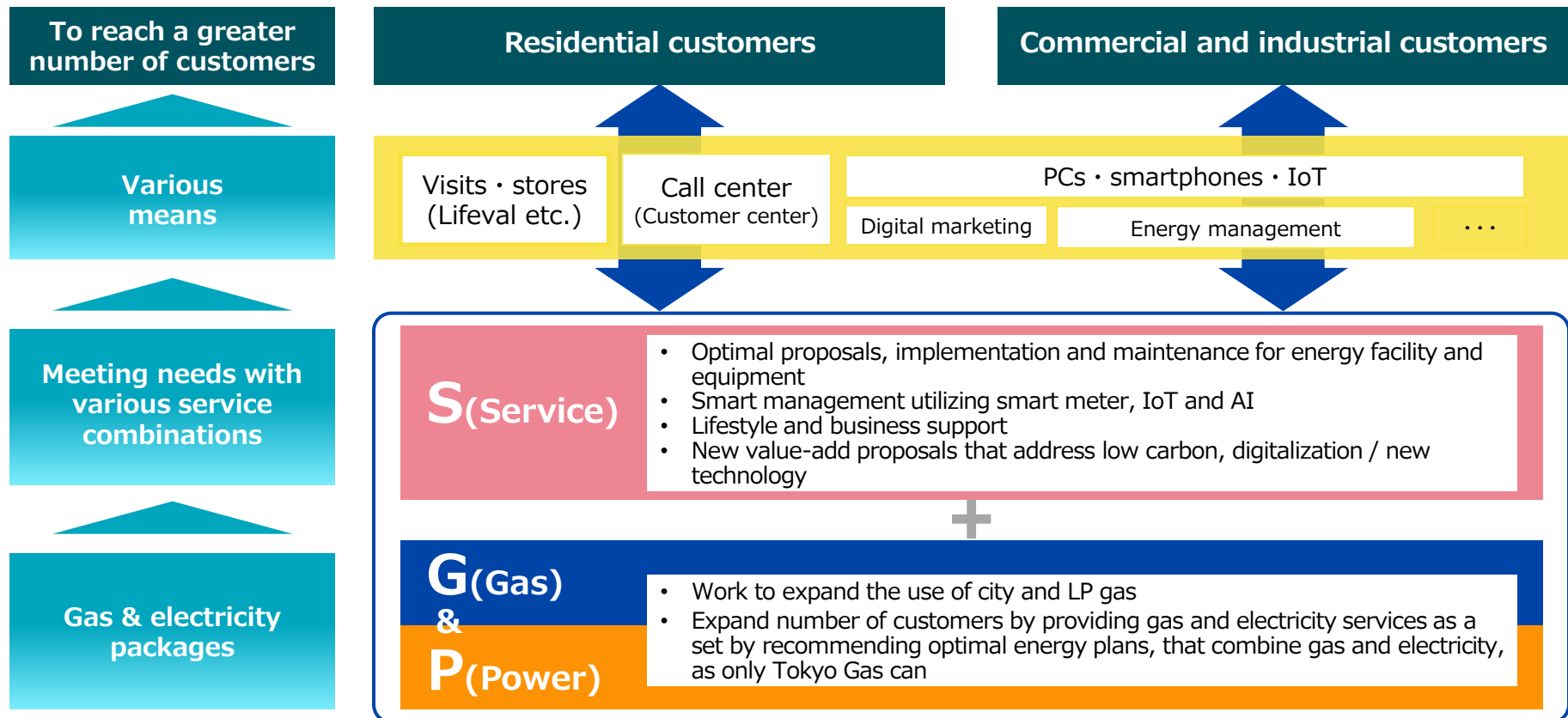
The Era of Single-Source Providers of Electricity and Gas

- For many years, customers in Japan have only been able to buy electricity from power companies and gas from gas companies.
- With the full deregulation of power and gas retail market, consumers in Japan can now purchase both power and gas from a single supplier, just as in the EU and the US.
- With this change, it is now possible to design and build an optimal energy system for Japan.

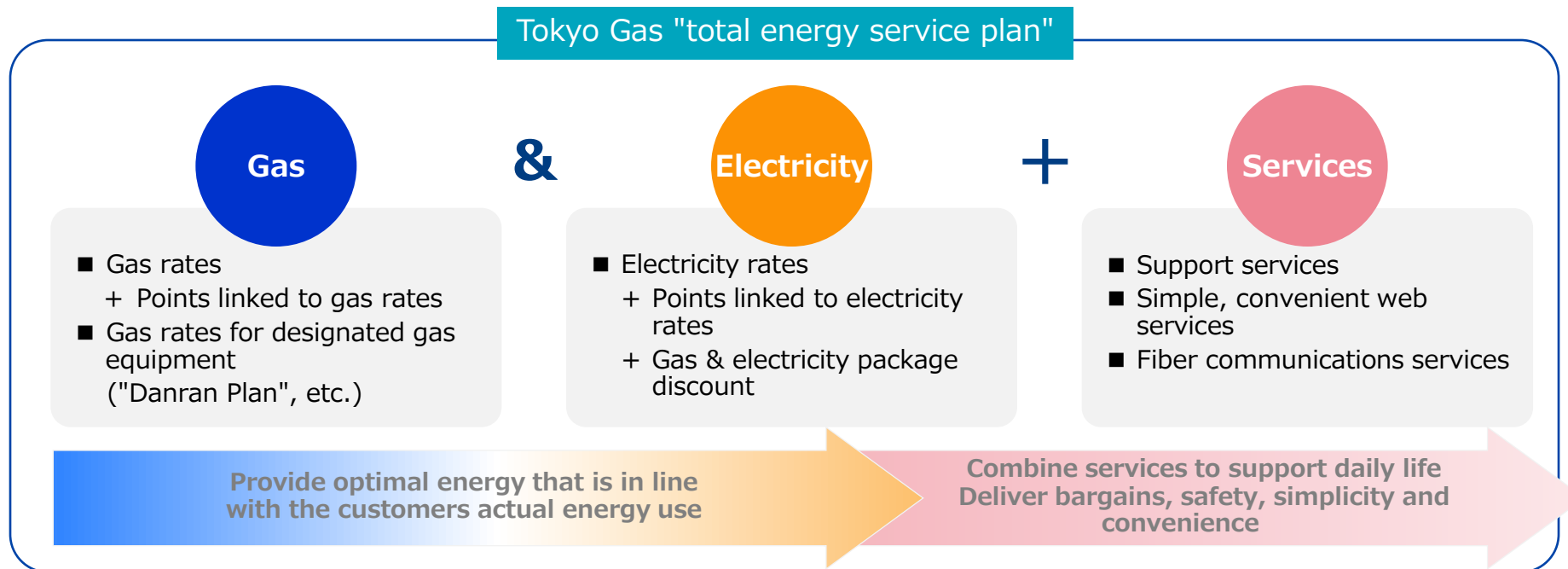
The Era of Multi-Dimensional Innovation Fueled by Rapid Digital Evolution

- Digital technologies, including IoT, big data, and AI, are evolving with unprecedented speed and are having an enormous impact on daily life and industry. These technologies promise to spur the kinds of innovations never before seen.
- Although it is difficult at this stage to forecast the future, we believe we must pay close attention as look ahead.

- The full deregulation of the electric power retail market has made it possible to offer **not only gas but gas and electricity as a set** to all customers, including residential customers.
- To provide optimal plans for gas and electricity, we will use **various means to deliver services that meet the needs for lifestyle and business of customers and reach a greater number of customers.**



- The Tokyo Gas "total energy service plan" is a general energy plan offering value for money, peace of mind, and simplicity and convenience that combines a gas and electricity packaged discount with various services that customers can choose freely.
- Tokyo Gas, which has built a network with 11 million customers through its 130-year-old city gas business, will **provide optimal energy that corresponds to a customer's actual level of use**.
- We will continue establishing new pricing menus and service menus that more customers can feel "profitable". We will provide our electricity **to 2.2 million customers by FY2020** and increase the number of customers provided the one-stop service of supplying both gas and electricity.



- Tokyo Gas Group aims to provide optimal recommendations to support its customers' lives **as only it can do owing to its many years experience supporting the lives of customers and providing them with gas and power.**
- **We want customers to think of Tokyo Gas when they have troubles in your daily life.** To nurture this recall, we are preparing an extensive menu of **each customer's life stages and troubles in daily life that customers would like to have handled.** We plan to develop a **platform that will offer one-stop services** for gas and electricity.
- We aim to **expand our new service menu** as the Tokyo Gas "total energy service plan", including services through alliances with ventures and other companies.

Look to Tokyo Gas when you have troubles in daily life

Customer



Can I make my monthly utility bill lower?



I want to talk to someone about problems with our water equipment and facilities



As two working parents, we are busy and want to reduce housework

Tokyo Gas Group

Channels

Products

Data

Thanks to our customer center, customers can immediately call with questions about rates and equipment!



A nearby Lifeval or Enesta maintenance representative will visit your home. Ask us anything!



Our website and myTOKYOGAS allow customers to use services and conduct procedures whenever they want



Energy

Gas

LP gas

Electricity

Facilities/equipment

Gas fixtures

Housing fixtures

Electrical fixtures

Remodeling

Services

Trouble with water equipment and facilities

Residential monitoring

Housework support

Maintenance

Energy conservation consulting

New domains...

Gas and electricity usage data

Condition of customer equipment · Visits thus far

Data for devices using IoT

...

- Strengthen alliances with wholesale gas suppliers and LP providers to **expand the provision of “GPS” to customers in the Tokyo Metropolitan area** while also providing the support that helps customers live pleasant lifestyles.

Initiatives towards Delivering GPS to a Greater Number of Customers

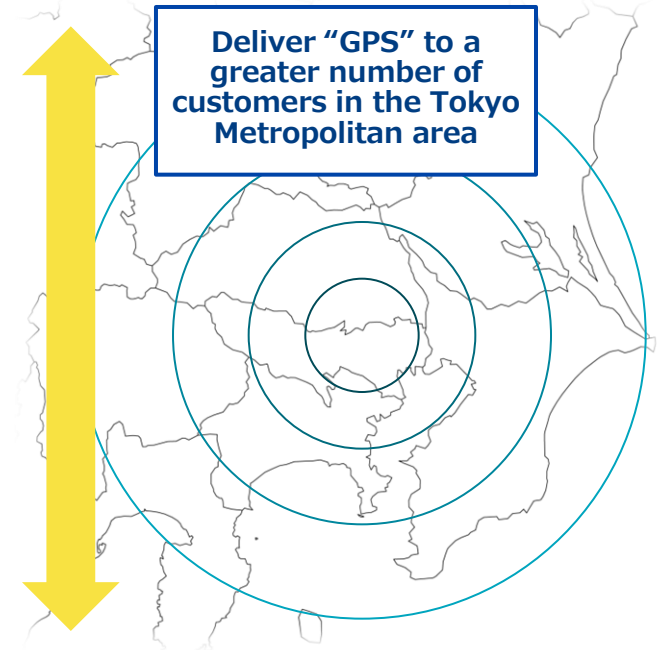
Customers not using our gas services

LP gas customers

Peripheral gas company customers

- Tokyo Gas will expand city and LP gas services to customers in areas not yet served by city gas or by Tokyo Gas.
- We will collaborate with a variety of players in the LP gas industry to increase the efficiency in our distribution network and the safety, and will achieve a base of 1 million customers in 2020.
- Through our Business Alliance on Low-Pressure Power Sales*, we will provide wide-ranging “GPS” services to customer in the Tokyo Metropolitan area based on collaboration with wholesale peripheral gas companies and LP gas sales companies.
- We will further natural gas services in coordination with wholesale peripheral gas operators. We will deliver new value to our customers by providing new products and services in addition to gas and power.

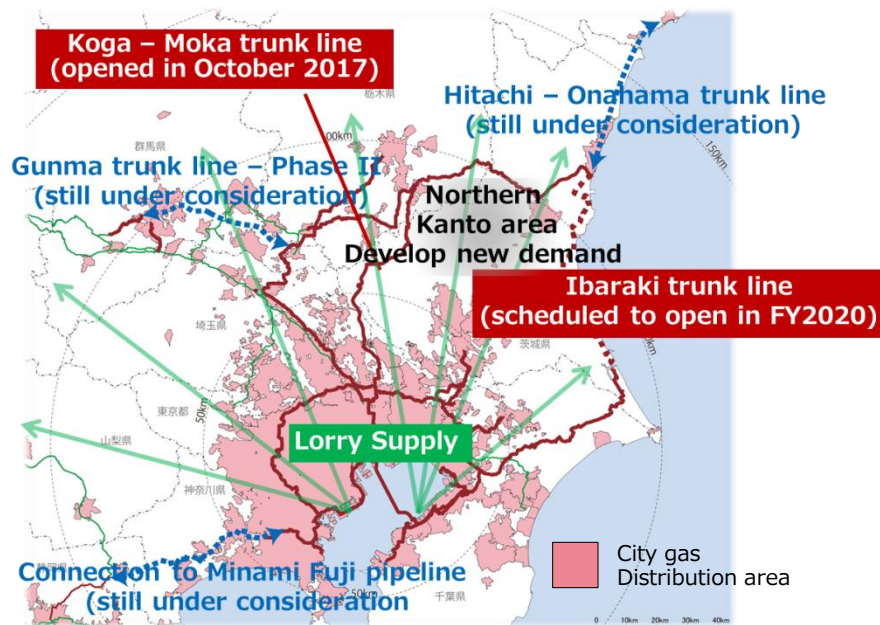
Deliver “GPS” to a greater number of customers in the Tokyo Metropolitan area



* Business Alliance on Low-Pressure Power Sales: Partnerships with 48 wholesale gas businesses and LP gas sellers

- We are moving forward with the **expansion of natural gas use** by extending the length of the pipeline network and lorry supply. At the same time, we plan to assist with **energy solutions**, including energy conservation, CO2 reductions, and cost reductions via the use of **natural gas and gas equipment**.
- Cooperating with ENNET and Synergia Power, We will provide **competitive electricity to large scale customers**.
- We will continue **proposing energy services** to match customer needs and **engineering projects** such as LNG terminals and pipeline construction with local operators.

Expansion of Natural Gas Use (Extending Pipeline/ Lorry Supply)



Nationwide Engineering Services and Energy Solution

Saku Central Hospital (Nagano Prefecture)

Services began in FY2016

- Promote **regional energy use** in the multiple buildings on the site to achieve energy conservation and cost reductions.
- Installed a woodchip boiler to use **renewable energy**.
- As a general hospital, **BCP** considerations are critical. With this in mind, we proposed a cogeneration system comprising gas supply from highly seismic resistant middle-pressure gas pipes and functions to reengage power automatically in the event of a power outage.



Niihama LNG Project (Ehime Prefecture)

Operations slated for FY2021

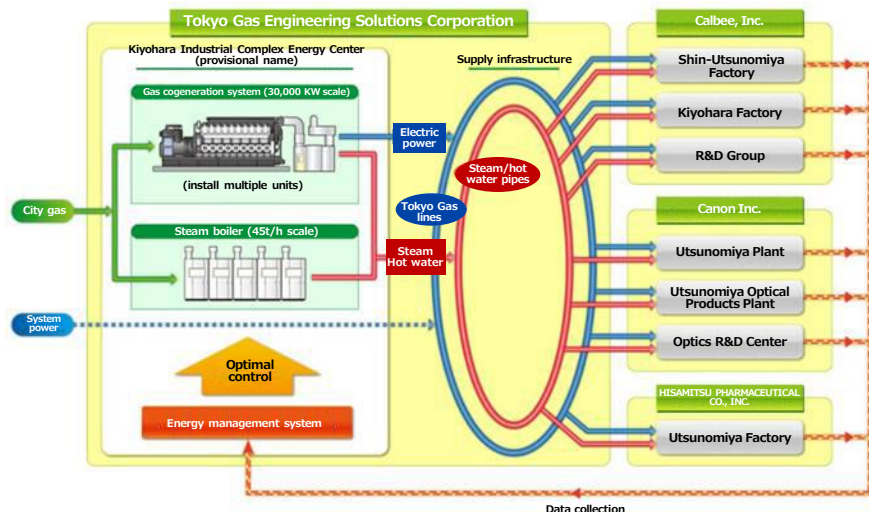
- This project is; (i) to construct the LNG receiving terminal at Ehime works of Sumitomo Chemical Company, and (ii) to supply natural gas to the new gas-fired plant at the site (currently under consideration by jointly Sumitomo Chemical Company and SUMITOMO JOINT ELECTRIC POWER.)
- Joining Sumitomo Chemical Company and SUMITOMO JOINT ELECTRIC POWER, **local energy provider** Shikoku Electric Power Company and TGES, with a track record in Japan and overseas and knowhow for the relevant business, are discussing the structure for the operation of the terminal, including business model, operational structure (regarding receiving LNG, Gas supply, etc.)

Recommend Optimal Uses for “GPS (Gas & Power + Services)”

Commercial and industrial customers

- Tokyo Gas is **developing advanced EMS** (Energy Management System) that will consolidate control of cogeneration systems (CGS) and other equipment as well **promoting regional use**. With a view toward the low-carbon societies of the future, we are also **working on “smart menus”** that will introduce and use demand response, renewable energy, accumulators, VPP, and other strategies.

Regional Supplying of Energy (Redevelopment/industrial complex etc.)

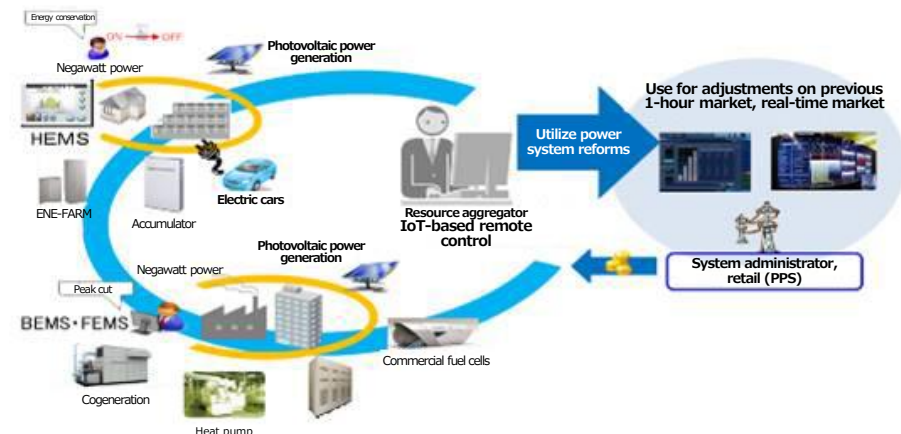


Kiyohara Industrial Complex (Tochigi Prefecture)

Completion in FY2018

- Japan's first integrated energy-saving business serving multiple plants, which supplies energy to the seven plants adjacent to each other in the industrial complex.
- The Tokyo Gas Group serves point for multiple companies to centralize the fluctuating loads of each plant and supply energy using optimal operations.
- This achieves a level of environmental load reduction not possible by each plant individually and enhances supply stability by enabling power and heat provision to each plant even in the event of a power outage.

Development of VPP (Virtual Power Plant)



Source: METI "Energy Resource Aggregation Business Committee (First Meeting) - Distributed Materials

“Demand Response” service

Service started in FY2017

- The Tokyo Gas Group has been participating in VPP validation projects that can manage energy creation and saving energy as a power generation through integrated control of distributed power generations and facilities which consume electric power by using IoT.
- The Tokyo Gas Group are providing the “Demand Response” services as an aggregator to handle the power for adjusting market supply-demand balance provided by general transmission and distribution operators, as well as using rechargeable batteries and renewable energy.
- We will contribute to the optimal utilization of energy by our customers and all of society.

- In the real estate business, the development of our landholdings such as large-scale lots in Tamachi and Toyosu (central Tokyo area) and small and medium-sized lots, We are rolling out **an office and housing rental, mainly in central Tokyo, based on the basic concept of our landholdings rental business.**
- We are also planning to buy and sell real estate to make it into optimized asset for rental business. In addition, we expand the business in 2020s.

Office Building Example(msb Tamachi)

- At our property with direct connection to JR Tamachi station, we are promoting the development with smart energy network and measurements enhancement for Business Continuity Planning, BCP (installing emergency dual-fuel (oil and city gas) power generation etc.) to achieve advanced and appealing urban development and rental business and the convenience for the relevant community.
- We are constructing the buildings of Phase I (Tamachi Station Tower S and Pullman Tokyo Tamachi*1) and Phase II (Tamachi Station Tower N) with the the goal of completing construction ahead of schedule as follows;

Phase I : in 2018

Phase II : in 2020.



*1: Pullman Hotels and Resorts: The premier hotel brand for travelers seeking the latest in hotel accommodation, this marks their first hotel development in Japan.

*2: Phase I is a land rental project, Phase II is rental office project financed through internal capital expenditures.

Rental Housing Example (small and medium-sized lot in Tokyo)

- We are aggressively engaging in the rental business, developing small- to medium-sized lots.
- Currently, we are designing and planning a commercial and residential complex on land adjacent to a station in the Tokyo Metropolitan area. (Construction is scheduled to begin in 2018 and be completed by 2019.)



Achieve Environmentally-friendly Energy Supply, Mainly for Natural Gas, in Overseas Markets

- We plan to expand the breadth and depth of our business, depending on the characteristics of each region, by leveraging our global LNG value chain experience. In addition we will strengthen our presence in LNG market, such as **“Tokyo Gas is a truly LNG player”**.
- As the structure of the global natural gas market undergoes a change, we will **increase the ratio of midstream and downstream businesses** in our portfolio of overseas bases **to build a stable profit platform** that is not influenced by fluctuations in commodity prices.
- We are also setting our sights on **undertaking new fields of business**, including floating LNG receiving terminals * and renewable energy etc., and **entering new regions** where we expect market growth and where we can leverage our strengths.

* floating LNG receiving terminals: LNG floating storage and regasification unit terminal (FSRU)

Amid rapid economic growth, the supply-demand structure for energy is changing in countries in **Southeast Asia** and other regions. We aim to work with the respective governments of and companies in these countries to contribute to the building of energy infrastructures and the introduction of natural gas in these regions.

In **North America** where there is a substantial demand for energy, and deregulation and market trading of energy is advancing, we will continue to participate in up-, mid- and downstream businesses to acquire and use knowhow that will contribute to our other businesses in Japan and abroad, and at the same time establish an earning base.

In **Australia**, where we have been engaged in acquiring upstream interests, we will work to maximize the value of existing investment projects

To New
* **Business field**
* **Area**

Achieve Environmentally-friendly Energy Supply, Mainly for Natural Gas, in Overseas Markets

Contribute to Natural Gas Infrastructure Development in Southeast Asia

- As a Group we will **provide broad-based value**, from natural gas engineering to know-how for operation, energy conservation services.
- In Southeast Asia, the supply-demand structure for natural gas changed with market liberalization, and as the result, some countries that exported LNG became the one of the countries that import LNG. We aim **to elevate our presence by engaging all the value chain development** in this region, including contribution in the field of LNG procurement.

LNG procurement

LNG receiving terminal

Power plant

Distribution and
use promotion

Energy services

[Vietnam] Established LNG VIETNAM Joint Stock Company

(August 2016)

Three-company joint venture with PetroVietnam Gas Joint Stock Corporation and Bitexco Group of Companies. In Vietnam, we are aiming to engage in LNG procurement and sales as well as LNG receiving terminal construction and operation. Planning to start operations in 2022.

[Vietnam] Invested in PVGD

(July 2017)

Acquired stock of PetroVietnam Low Pressure Gas Distribution Joint Stock Company (PVGD), the subsidiary of PetroVietnam Gas Joint Stock Corporation that oversees their gas distribution business.

[Malaysia] Established GMEA

(May 2014)

Established to provide energy services to industrial customers in Malaysia. First project was the installation of a 32,000 kW cogeneration system for Toray Group Malaysia. (Supply started in FY2016)

[Bangladesh] LNG receiving terminal

(July 2017)

TGES and Nippon Koei Co., Ltd. received a joint order from Petrobangla to conduct a feasibility study and design for an on-shore LNG receiving terminal.



[Thailand] Bang Bo Power Plant

(October 2016)

Participated in Bang Bo Power Plant project (350,000 kW) in the suburbs of Bangkok (Operation started in FY2003)



<Memorandum Concerning Value Chain Development>

[Malaysia] Petronas LNG Ltd. : Memorandum of Collaboration (October 2016)

[Indonesia] PT Pertamina : Strategic Alliance -Cooperation for Development of LNG Value Chain in Indonesia (February 2015)

[Vietnam] PetroVietnam Gas : Memorandum of Understanding for cooperation on the LNG Value Chain Development (March 2012)

Achieve Speedy "GPS×G" via Aggressive Alliances with Diverse Players

- We plan to fortify our alliances all along the LNG value chain, including LNG trading and power exchange and collaborative development with energy companies, **to build an optimal energy supply system.**
- As **an alliance that contributes to transforming our business model**, we aim to move forward with partnerships with a diverse lineup of players, including ventures, in fields such as renewable energy source development and utilization as well as new service development and digitization.

Overseas business · LNG procurement

- ◆ Joint participation in overseas projects (overseas corporations, etc.)
- ◆ Shale gas and other upstream development
- ◆ LNG trading (Japanese and international LNG players)

City gas production, power generation and transportation

- ◆ **Power plant construction, power exchange (power companies, etc.)**
- ◆ Collaborative distribution of LP gas (LP gas operator)
- ◆ **Development of renewable energy sources**

Supply, sales, services

- ◆ Expand city gas and power sales (energy, construction, communications industries, etc.)
- ◆ National expansion of engineering services (local corporations, etc.)
- ◆ **Development of service menu**

<Partnership on power generation business>

● Power generation plant construction

To secure 5.0 million kW competitive proprietary power sources in 2020s, we aim to move forward with partnership with the companies which has wealth of experience for construction and operation regarding power plants.

● Photovoltaic power

In Japan, we invested in Shizen Energy Inc., which has a track record that includes the development of a nearly 600,000 kW solar power plant. We will aim for the quick acquisition of a 60,000 kW solar power source. (press release Feb, 2017)

<Development of new service menus>

We are working with venture businesses to create new service menus not bound by existing business frameworks.

Furomimi (July 2017/partner: OTOBANK Inc.)

New lifestyle proposal

- "Enjoy audio books while taking a bath"

User manuals collaboration (Oct. 2017/ partner: TRYGLE Co., Ltd.)

Centralized management service for home gas equipment and home appliances

Predicting heat shocks (Oct. 2017/partner: Japan Weather Association)

Service provides notifications as a general guide on the risk of heat shocks

Partnerships under consideration

Terminal that protects children by sending indoor or outdoor GPS coordinates to a smartphone. This services will utilize GPS and Wifi hot spot data.

Terminal to protect children



Furomimi



Customer

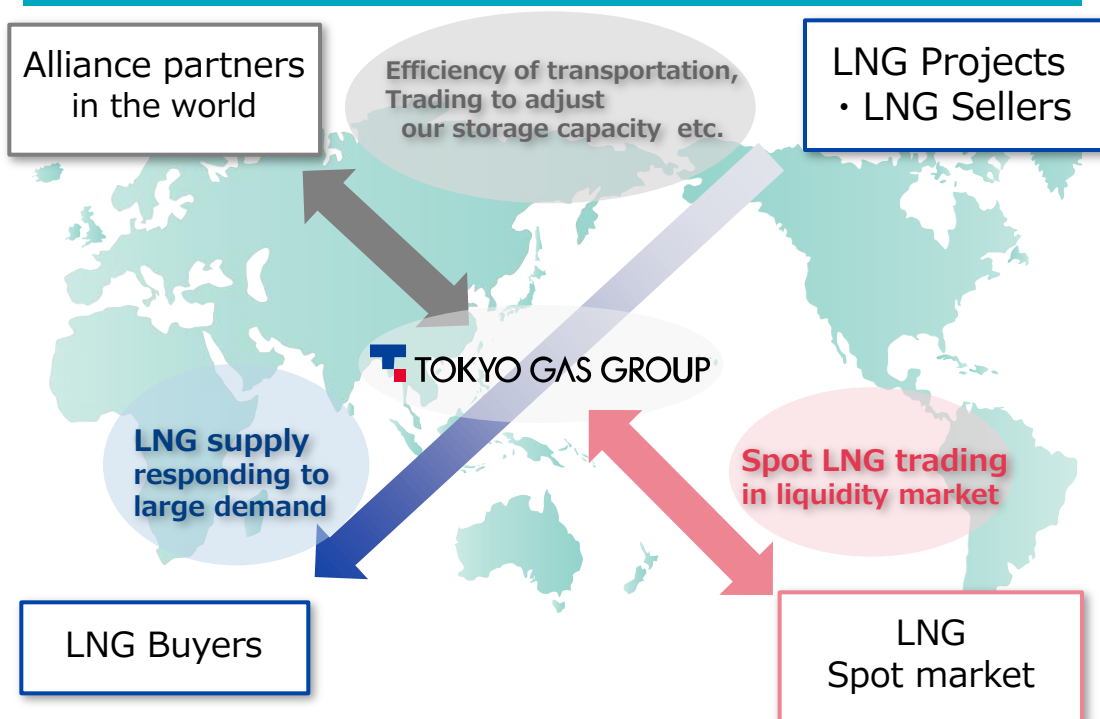
Technology development

- ◆ Investment in ventures and venture capital in energy sector and alliance with them
- ◆ Open innovation-based technology development

Raw Material Procurement and Production: Strengthen LNG Value Chain

- Amid increasing likelihood of changes in LNG demand in tandem with the Japanese energy market deregulation, we look to improve our procurement through **trading with alliance partners**, while securing volume flexibility, including **a higher ratio of LNG short-term and spot procurement**.
- We plan to continue with flexible terminal operations by leveraging synergistic benefits at jointly-operated LNG terminals while **creating facilities with improved competitive strength** including LNG procurement.

Tokyo Gas Group in Dynamics of LNG Trading



Enhancement of LNG Storage



- We are planning to construct the No.2 Storage Tank (Capacity : 230,000 kL) in Hitachi LNG receiving Terminal

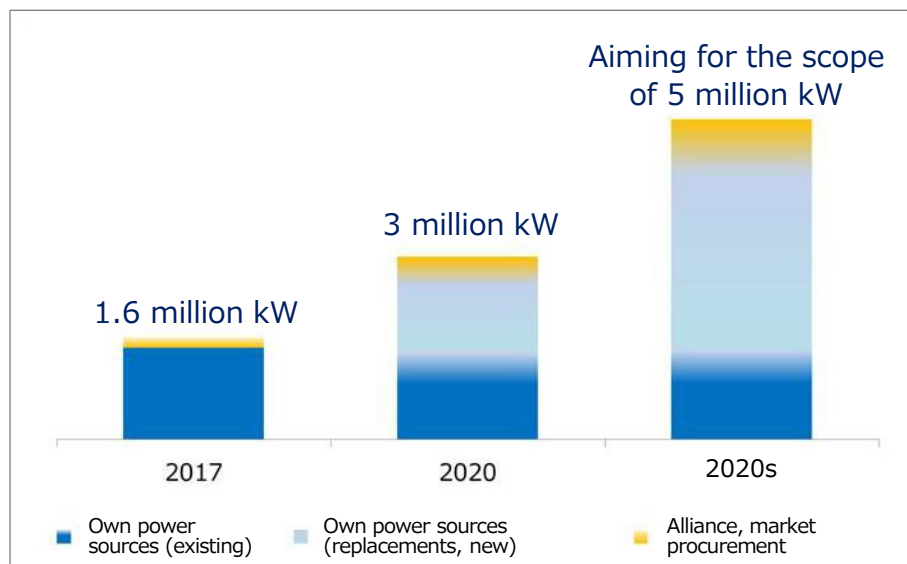
Operation started for FY2020

Development of Power Source: Building an Optimal Power Source Portfolio Commensurate with the Growth in Stock for Sales

- In line with the growth of stock for sales, we plan to develop **proprietary power sources and power source alliances** (electricity purchasing agreements with electric power companies), and secure power sources by procuring from the open market.
(Target : 3 million kW in FY2020, 5 million kW in 2020s)
- We aim **to acquire a 400,000 kW renewable energy power source by early part of the 2020s**. We plan to actively find and invest in projects.

Scope of Group power sources

- Secure 3 million kW proprietary power source by FY2020.



* Renewable energy sources include own sources (new)

* Figures indicate own sources (own equity)

Procurement of alliance power generation and Group power generation

- Kobelco Power Moka Inc. (Gas-fired power generation - approx. 1.2 million kW, all purchased by Tokyo Gas Group) Construction progressing smoothly towards start of operations in 2019.
- To further expand power source, we are continuing evaluations for the Chiba-Sodegaura thermal power plant (joint investment with Kyushu Electric Power and Idemitsu Kosan) and a thermal power plant project in Ibaraki Prefecture, among others.

Operations to begin in FY2019



Pipeline: Become a Slim yet Powerful Pipeline Business Operator

- Under the newly deregulated conditions after reinventing ourselves as a gas pipeline operator, in addition to securing transparency, neutrality, and fairness, we will **continue to implement safety measures** (to address aging cast iron piping, etc.) **and measures to prevent earthquake disaster** in order **to ensure the safe and stable provision** that is required to expand the use of natural gas.
- We will partner with retail operators to continue **to maintain a high standard of safety** as we have thus far, thereby enabling all customers to safely use city gas.
- To help **reduce the price for transportation service**, we will strive for further optimization of operations, **expand our pipeline network, and secure demand to expand gas transportation volume.**

Provision and Improvement of infrastructure for natural gas / Safety Measures

- We are steadily advancing the construction of the pipeline from Koga to Moka with the goal of completing construction ahead of schedule in FY2017.
- We are constructing the Ibaraki Line, which will strengthen our ability to provide a stable supply through the loop creation of our high pressure pipeline network, with the goal of completing construction by FY2020. (Reference to slide 33 "Building an Energy Infrastructure (Figure for 2020s))
- As the safety measures, we are continuing the initiatives for our 3 principles ; Prevention [Install the earthquake-proof gas infrastructure], Emergency response [Avoid the secondary disaster], Restoration [Restart to supply promptly].



Comprehensive disaster training (partner with retailers)



- In FY2017, we invited METI, new gas retailers and others to observe our training. We confirmed cooperation and roles during a large-scale disaster. Our aim is to be ready to fully handle disasters as we have been thus far.

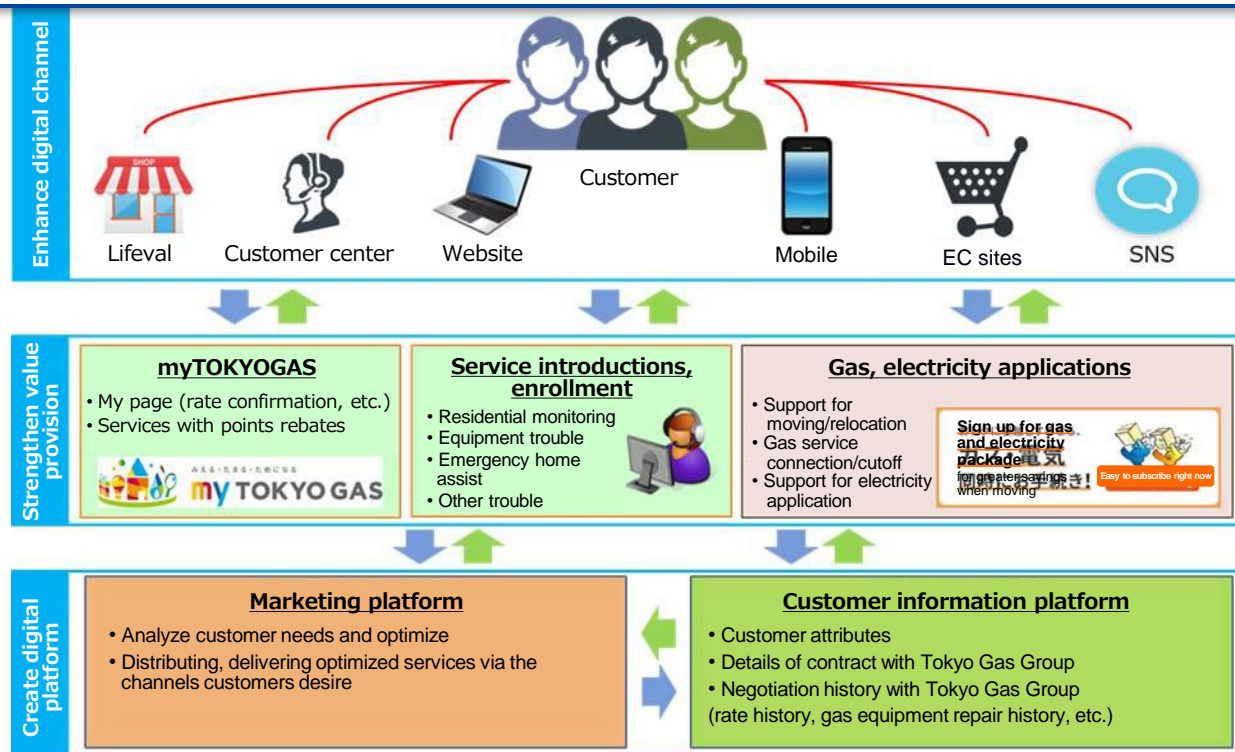
Digitalization Initiatives

- We are **effectively introducing IoT, AI, mobile devices, and digital technologies using big data** while drawing on our technical capabilities and the strengths of a sales network closely linked to localities.

Production Generation Transportation	<ul style="list-style-type: none"> Predict the failure at LNG receiving terminals and power generation plants, Efficiency of operation and maintenance Stop and restart to supply by remote controlling the pressure regulator with earthquake prevention system, SUPREME Optimize to distribute the LP gas cylinders by using the data for gas demand gathered with the technology of frequent remote metering
Sales Services	<ul style="list-style-type: none"> Provide the best service for our customers based on the result of digital marketing Highly develop the energy management system to achieve the automatic optimized operation for energy equipment with remote control Advance in quality of services and work saving for operators at the Call Center by the introduction of voice-recognition system etc.

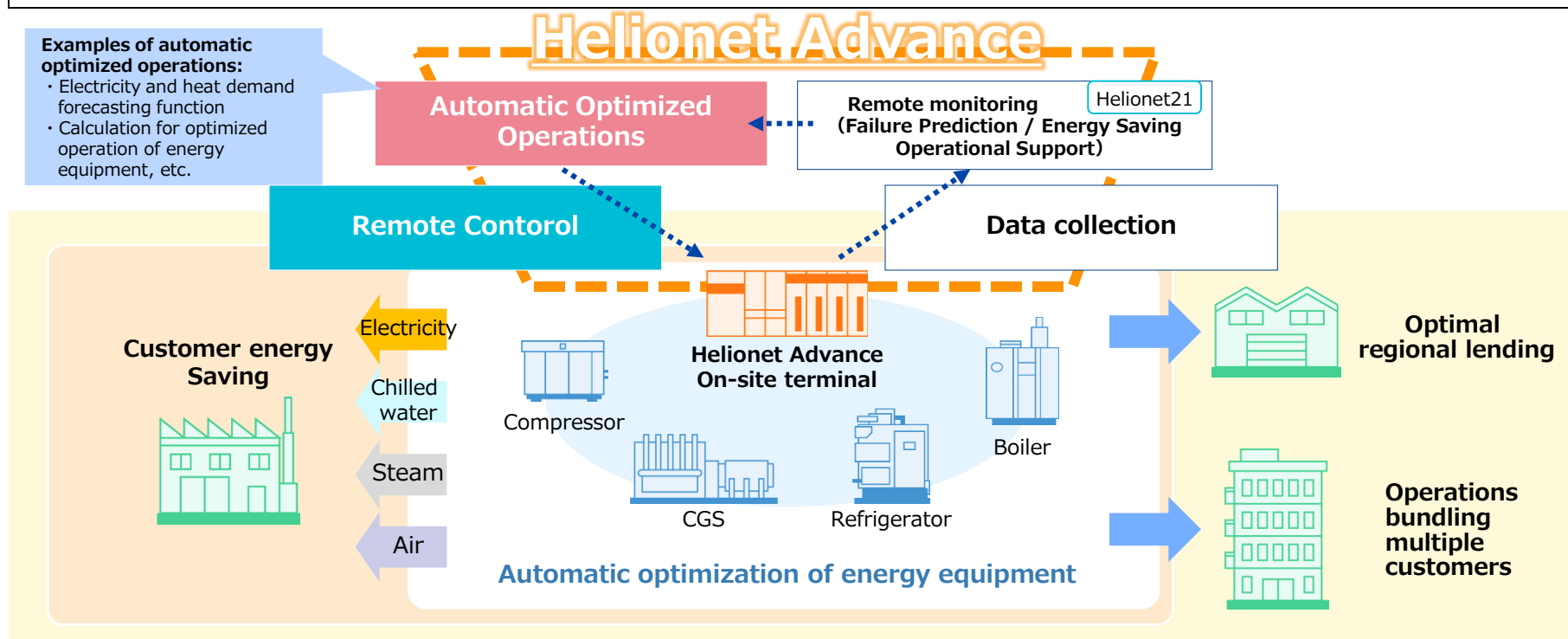
Digitalization to provide the best services meeting the needs of customers

- In addition to Lifeval and the customer centers, Tokyo Gas offers an array of **digital channels**, including our website and mobile apps. Customer can handle procedures on their own easily and when they want to. We are really improving customer convenience.
- We are developing the **digital infrastructure** that will allow us to utilize big data to deliver services and information customized to the needs of each customer.



Digitalization to optimize the operation for using energy

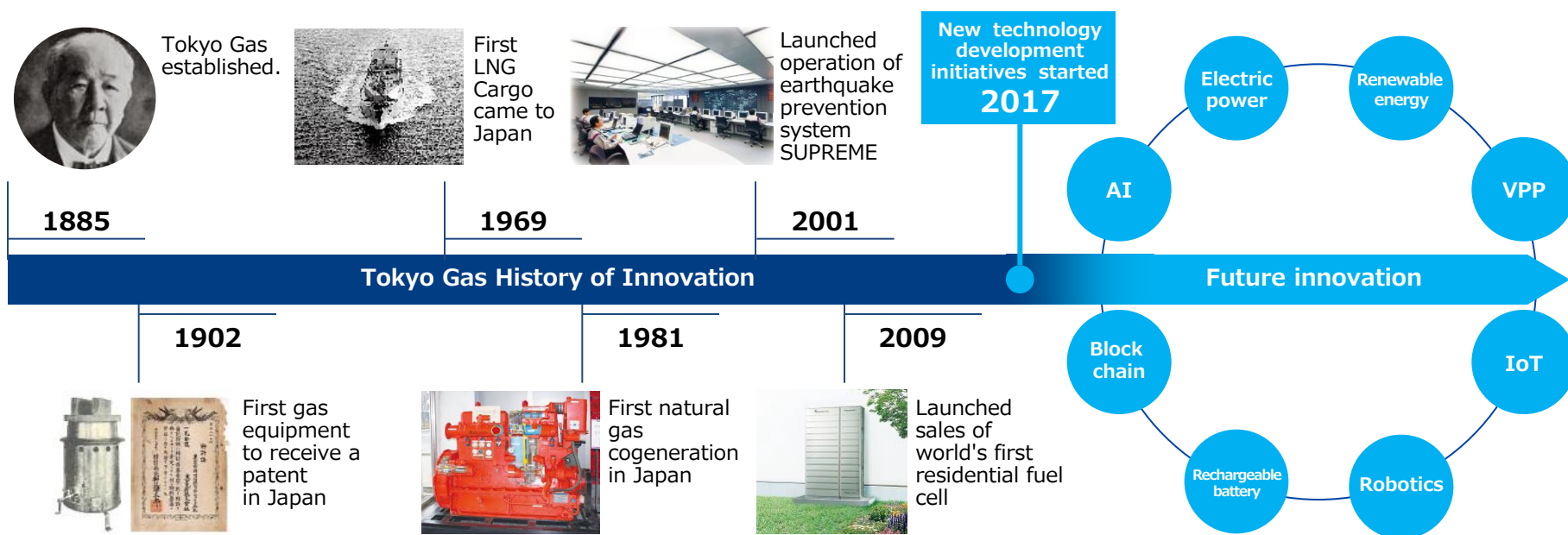
- We developed the new system, “Helionet Advance”, which improve our existing “Helionet 21”, as follows ; **(i) remote monitoring system** of the energy equipment in our customers’ office buildings and factories, **(ii) remotely controlling** the equipment **to implement automatic optimized operations**.
- We will be installing this system in actual properties with the goal of contributing to energy and cost savings at our customers’ businesses and production facilities.



- [Future initiatives]
- Optimization for the operation for using energy ,including “demand response”
 - More advanced failure prediction, optimized operations, etc. using AI and big data

Innovation and Technology Development Initiatives

- We will shift from our previous R&D focused on gas energy to an **open innovation style of R&D** focused on a broad range of innovative energy technology.
- We will establish a dedicated department to **gather information on a broad range of innovative energy technology** while also **collaborating with advanced universities and venture companies** in Japan and overseas to **absorb new technology** and create innovation.
- To create innovation, we will **establish an office in Silicon Valley**, a hot spot for venture companies, while engaging in **investments in ventures and venture capital in the energy sector and alliances with them.**



Organizational Reforms

- We aim to conduct optimal organizational reforms to promote key strategies and platform enhancements outlined in this plan.
- **Ahead of the legal separation of the pipeline division scheduled for 2022**, we are proceeding with preparations to ensure a smooth transition to prevent inconveniencing customers.

Organizational reforms to promote key strategies and platform enhancements outlined in this plan

Strengthen “GPS” promotion functions

We will enhance our Group structure, including subsidiaries for promoting city gas, electric power, and living services, to provide uniform “GPS” services to customers. (Related initiatives: Slides 6 - 8)

Response to maintain the Project to look into the optimization of gas production facilities in the Bay of Tokyo

We will set up a project team to properly handle the succession of Tokyo Electric Power and Tokyo gas contracts ahead of the integration of the LNG and thermal power generation business with JERA, while ensuring the synergy of the cooperative operation in the relevant receiving terminal in the past. (Related initiatives: Slide 15)

Secure renewable energy sources:

We will secure 400,000 kW power source from renewable energy sources by the early 2020s and establish a dedicated team to aggressively develop and invest in projects for renewable energy sources. (Related initiatives: Slide 16)

Become a slim yet powerful pipeline business operator

Establish a pipeline network infrastructure company as a wholly-owned subsidiary that will specialize in the maintenance, management and construction of pipelines. (Related initiatives: Slide 17)

Promote open innovation

Aiming to create innovation, we will establish an office in Silicon Valley, a hot spot for venture companies, and engage in investments in ventures and venture capital in the energy sector and alliances with them. (Related initiatives: Slide 20)

Activities for a successful Tokyo 2020 Olympic and Paralympic Games

We will establish “Tokyo 2020 Olympic and Paralympic Games Promotion Dept. (provisional name)” to aggressively promote various activities aimed at ensuring a successful Tokyo 2020 Olympic and Paralympic Games. (Related initiatives: Slide 25)

Strengthen Personnel Platform

- We will move forward with **personnel hiring, development and placement to support “GPSxG”**.
- To ensure our ability to maximize the knowledge, abilities, and experience of personnel working in the Tokyo Gas Group, we will **promote diversity and workstyle reform**.

Promote “GPSxG”

Strengthening of personnel to support growth

Personnel hiring and Development

- Hiring personnel with high levels of expertise (new and mid-career hires)
- Strategic shift to growth domains
- Foster growth of business leaders

Create an environment conducive for maximizing the use of knowledge, skills, and experience

Promotion of diversity
(Support activities of diverse personnel)

- Empowerment of women
- Promotion of employment of people with disabilities
- Promotion of employment and empowerment of people with a foreign citizenship
- Career support for seniors (Support careers of employees over 50s and over)

Workstyle innovation
(Improve productivity/
achieve work-life balance)

- Work at home system (telecommuting)
- Improvement of productivity by introducing AI etc. (Call center etc.)
- Reforms of offices



Initiatives for Realizing a Low-carbon Society

- The Tokyo Gas Group **contributes to a low-carbon society in Japan and around the world by promoting the expansion of natural gas**, the cleanest of all fossil fuels.
- As the Paris Treaty and other factors drive environmental policy, we will **enhance our low-carbon efforts, including increasing investments in renewable energy-based power generation and future technologies**.

Reduce CO2 emissions at the customer

- Promote expansion and fuel conversion for customers unable to access to city gas
- Develop and expand use of high-efficiency equipment (Fuel cell [EneFirm] and cogeneration etc.), and provide solutions to use natural gas
- Expand the way of using natural gas (LNG bunkering : as fuel for ships)

Promote "smart" energy

- Promote optimization of energy (gas, electricity and thermal etc.) supply and demand using regional energy networks
- Contribute to the development of a low-carbon society by applying smart energy network, including "Demand Response" with distributed power sources and rechargeable batteries, etc.

Development of renewable energy sources

- Approach renewable energy sources (photovoltaic power generation and wind power generation, etc.) with a sense of urgency, including alliance with the relevant companies
- Aim for 400,000 kW power generation from renewable energy sources by the early 2020s
- Build the business model including use of renewable energy sources

Global expansion

- Expand natural gas infrastructure and utilization technology cultivated in Japan to overseas markets to contribute to low-carbon and sustainable growth on a global scale

Future technologies (Hydrogen, etc.)

- Promote development of technology of the use of hydrogen (ultra-efficient fuel cells with power generation efficiency of 65%, etc.)
- Promote use of fuel cell vehicles (FCV) for corporate fleets
- Promote development of hydrogen-related technologies, including fuel cells and use of hydrogen derived as a by-product of other processes

Contribute to Achieving Sustainable Development Goals (SDGs)

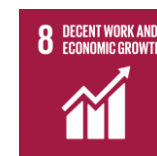
- The Tokyo Gas Group conducts a full range of business activities in the LNG value chain (procurement, transportation, city gas production and supply, power generation and energy solutions) to ensure the safe and stable supply of energy to our customers, the majority of whom reside in the Tokyo Metropolitan area. We also apply our domestic and global experience and knowhow towards constructing energy infrastructure in Southeast Asia.
- **Through our business activities, we aim to contribute to the achievement of UN Sustainable Development Goals (SDGs).**

Contribute to the achievement of SDGs as a pioneer in the city gas business

- Since our founding, the Tokyo Gas Group has contributed to the expansion of city gas.
- After becoming the first company to import LNG to Japan in 1969, we converted raw materials to natural gas, the lowest carbon among fossil fuels. We also promoted the wider use of natural gas by development technologies, including CGS and combustion technologies. Today we provide city gas to over 11 million customers.
- By engaging in smart energy networks, we are contributing to urban development, including the improvement of energy efficiency for entire regions and enhancing added value, such as adding disaster prevention functions.
- After the full deregulation of energy market, we will provide a variety of services combining gas and electricity to continue contributing to the enrichment of our customers' life and to urban development.
- Southeast Asia is expected to see a growth in demand for natural gas and an expansion of LNG imports. In this region, we are contributing to economic growth and helping solve environmental issues by partnering with local governments and corporations to promote the development of an energy infrastructure and the wider use and sophisticated use of natural gas.



Energy



Economic growth



Innovation



Urban development



Climate change measures

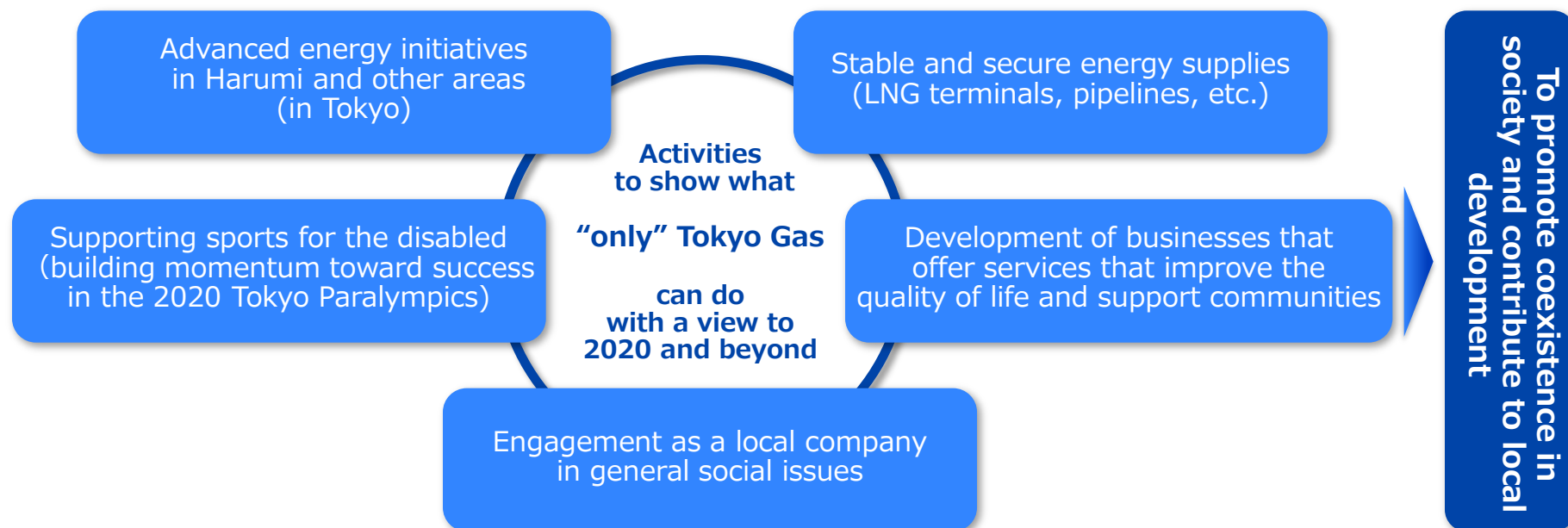


Partnerships

Initiatives toward Ensuring a Successful Tokyo 2020 Olympic and Paralympic Games (2020 Tokyo Olympics)

- Through its energy supply operations in the Tokyo Metropolitan area, Tokyo Gas will **contribute to the success of the Tokyo 2020 Olympic and Paralympic Games** that will be held right here in the Tokyo area in 2020 as an official partner in the 2020 Tokyo Olympic and Paralympic games. (gas and gas public service)
- Viewing the Tokyo 2020 Olympic and Paralympic Games as an opportunity to promote coexistence*, we are advancing **initiatives towards achieving this vision**. At the same time, we will endeavor to institute sustainable initiatives that will continue after the games are over.
- We will establish “the 2020 Tokyo Olympic and Paralympic Games Promotion Department (provisional name)” to aggressively promote various activities aimed at ensuring a successful Tokyo 2020 Olympic and Paralympic Games.

*Societies and cities in which people respect and support one another, whether they are people with disabilities, senior citizens, working people, children, regardless of nationality, living in security and harmony



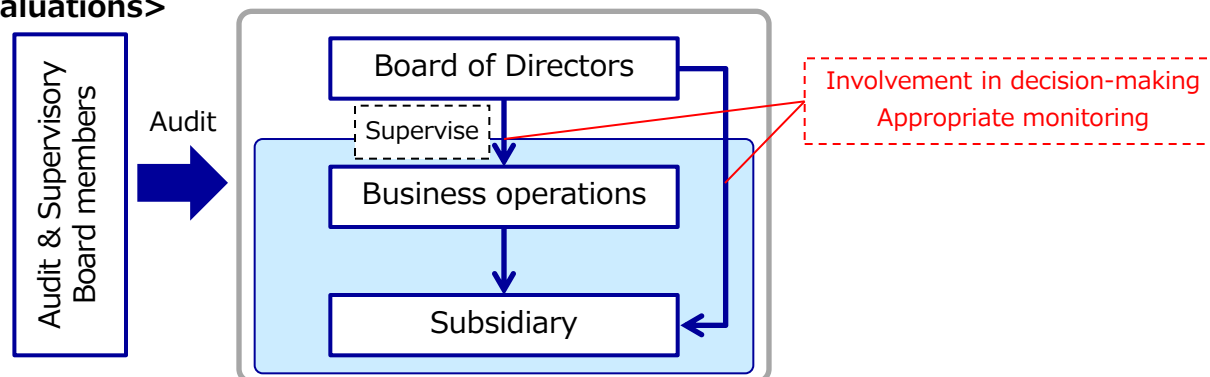
Establish Governance

- To ensure sustainable growth, the Tokyo Gas Group's Board of Directors will involve in decision-making that will **promote the independent growth and development of each of its businesses and monitor appropriately**.
- We will continue to **study ways to build better governance systems** that also take external trends into account.

□ Issues to deal with during governance evaluations

Issues	From individual business to multiple businesses	From restricted business to competitive business	From focus on Tokyo Metro area to global expansion	From focus on Tokyo Gas to united structure for Tokyo Gas and affiliates
Response	Portfolio management	Devise strategy to address increasing volatility	Business expansion that considers geographical risks	Management that balances centripetal and centrifugal forces

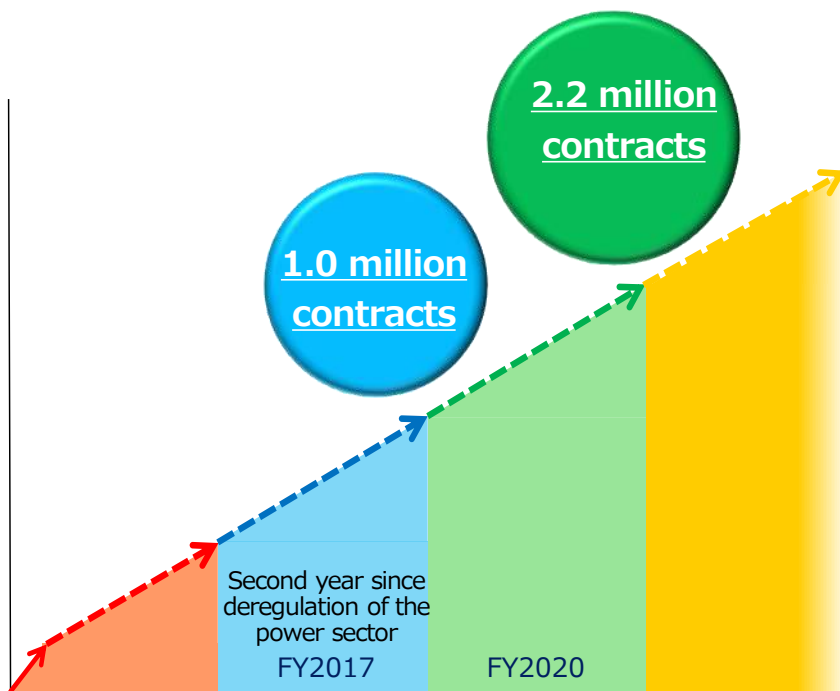
<Points of governance evaluations>



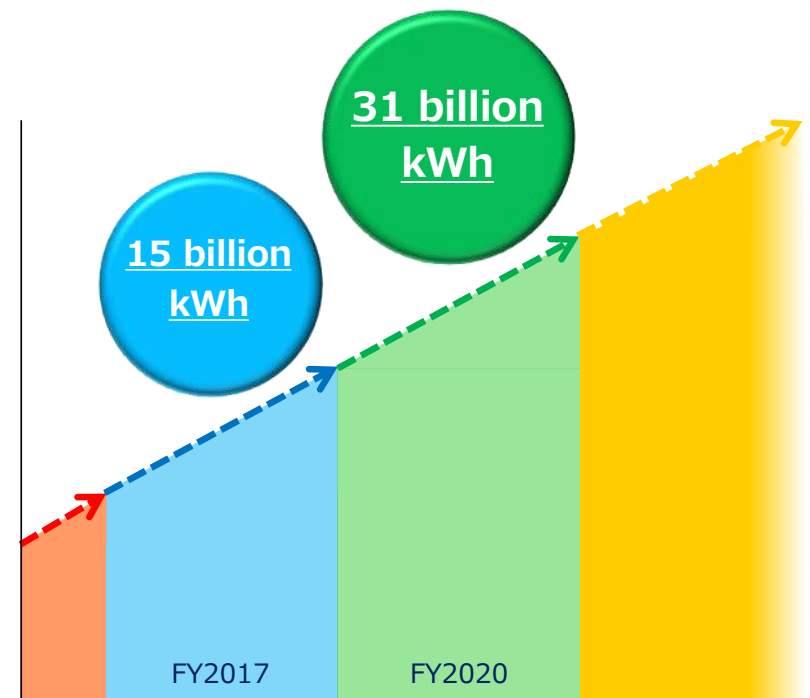
Major Indicator: Electric Power (No. of Customers, Sales Volume)

- We will increase the number of customers to whom we provide **one-stop services for gas and electric power** up to **2.2 million customers by FY2020**.
- We will provide **31 billion kWh** in FY2020.

No. of customers



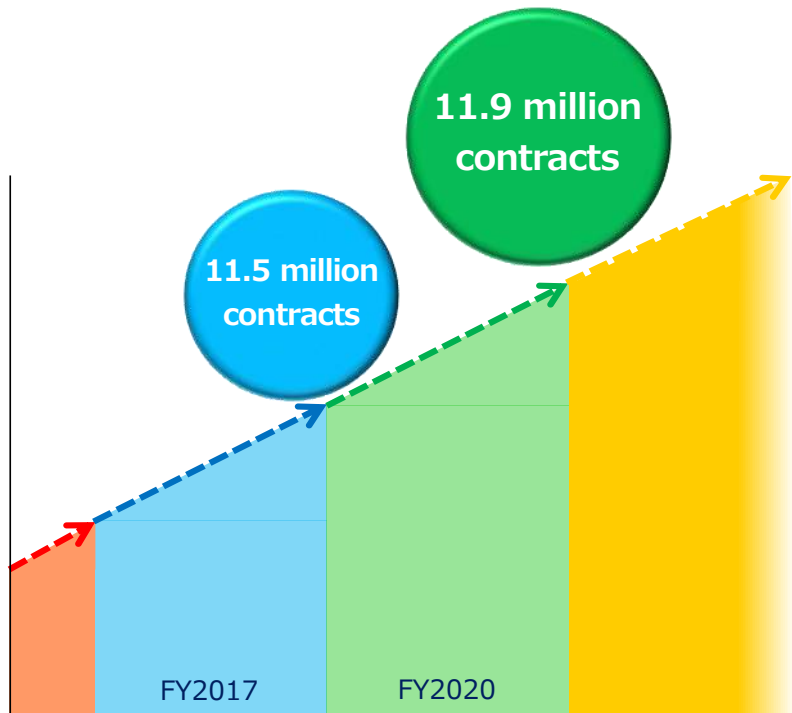
Electric power sales volume



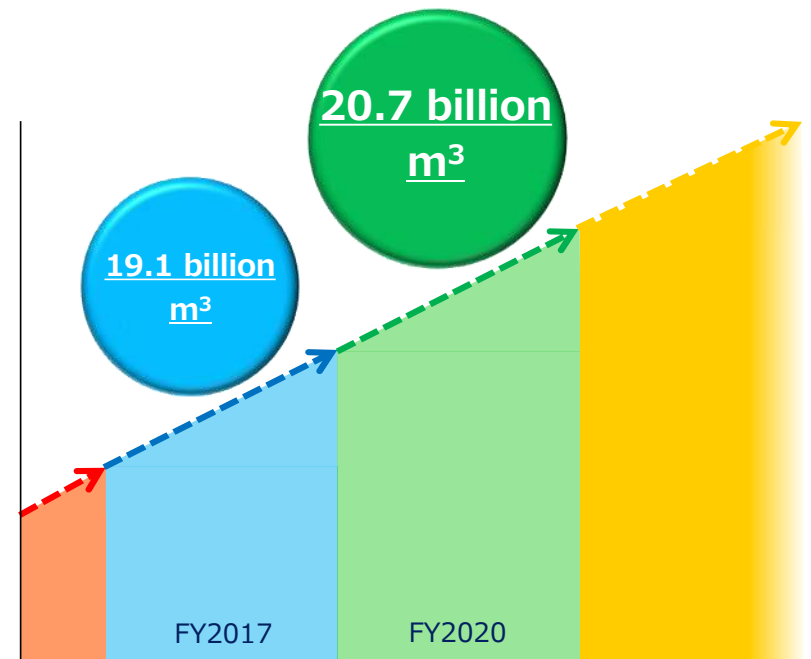
Major indicator: Gas (No. of Customers, Handling Volume)

- We will increase the number of customer of city gas up to 11.9 million by FY2020.
- We will provide 20.7 billion m³ in city gas and LNG in Japan in FY2020.

No. of customers (with city gas meters)

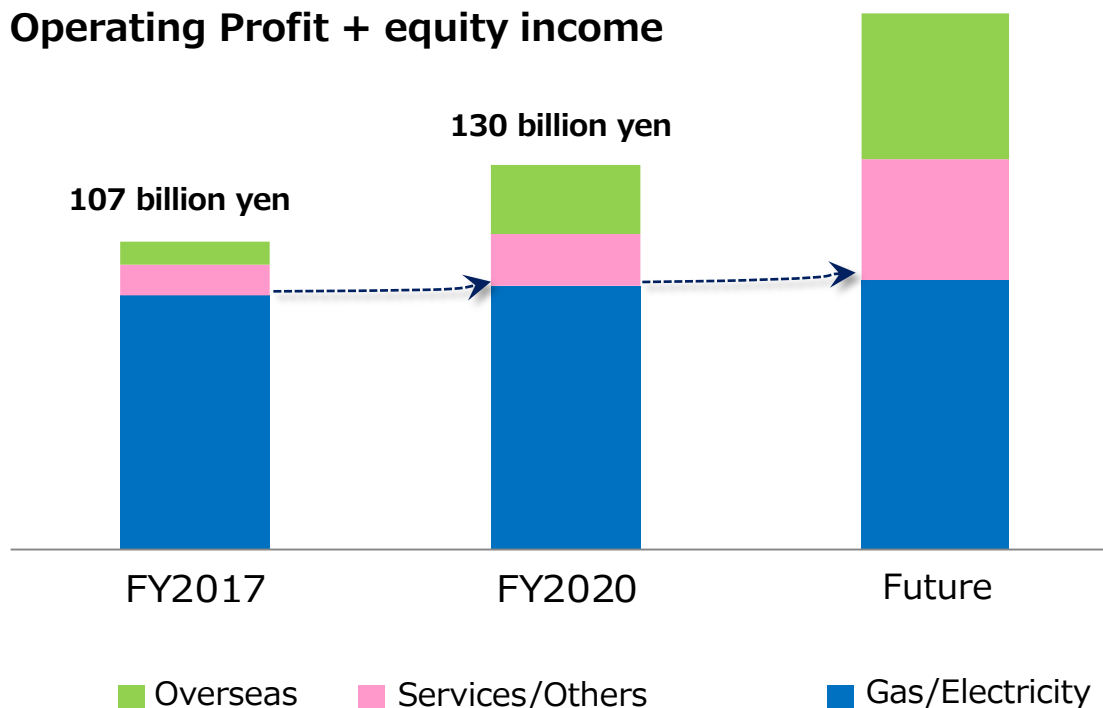


Gas handling volume



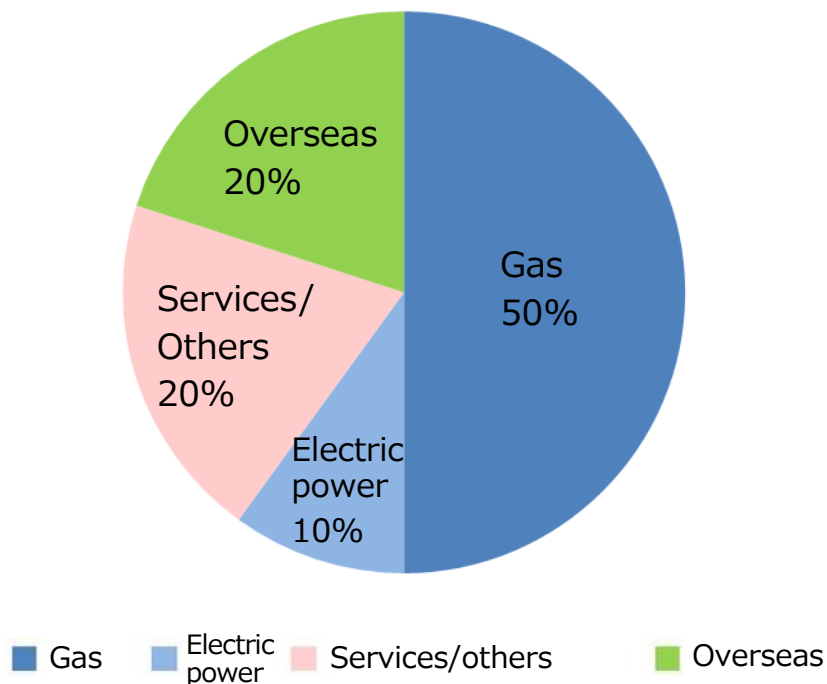
- Although we face a severely competitive environment following deregulation, we will **maintain total income for gas and electric power**.
- Although service domains (living services, engineering services, urban development services) and the overseas business domain are in periods where we seek to prioritize investments, we also will **increase the profitability** of existing businesses.
- For the Group overall, we will achieve **solid growth that enables income of 130 billion yen in FY2020**.

■ Operating Profit + equity income



- With the gas business as our foundation, we plan to build a business portfolio that includes the electric power, services, and overseas businesses.

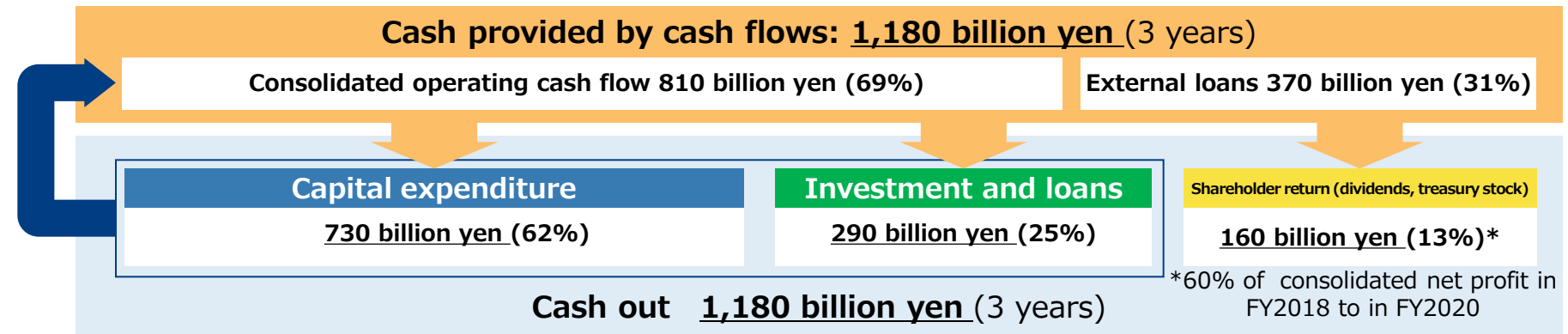
■ Image of profit breakdown in 2020



Major Indicator: Consolidated Cash Flows Overall Image and Financial Benchmarks

- We will use our operating cash flow, which grows owing to stable total profits for the gas and electric power businesses, for **capital expenditures, investments, and loans during FY2018-2020 to establish “sustainable growth” and “earning power”**.
- Increase external loans while **maintaining financial stability. Maintain ROE of 8% and a total payout ratio of 60%** to respond to the expectations of shareholders and investors.

■ Cash flow distribution method for FY2018-2020



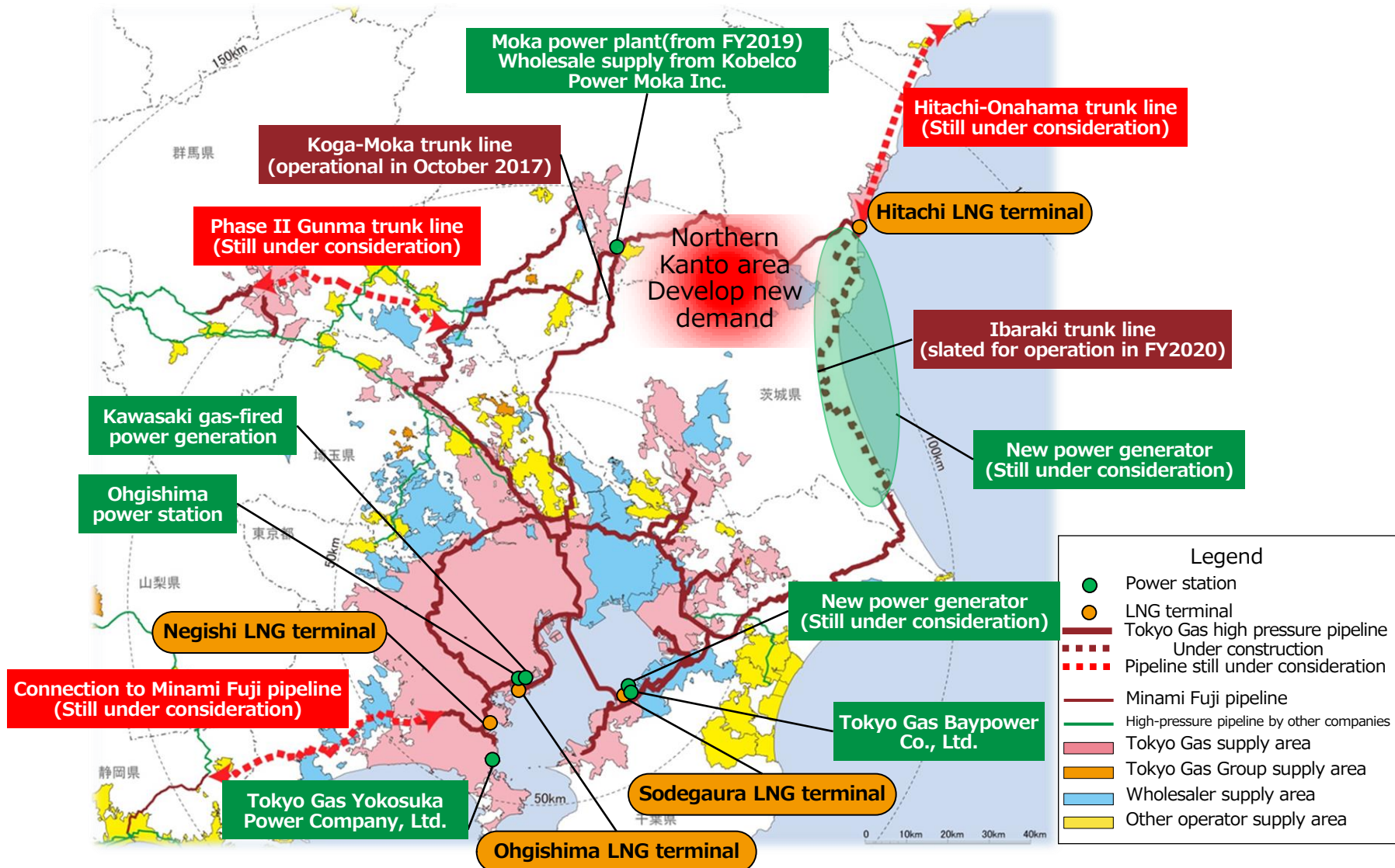
		FY2017	FY2020
Consolidated operating cash flow		244 billion yen	<u>280 billion yen</u>
Profitability	ROE	5.5%	Approx. 8%
Shareholder returns	Total payout ratio	60%	
Stability	Debt-to-equity ratio	0.71	<u>Approx. 0.9</u>

Major Indicator: Investments in Infrastructure Development, Future Growth

- Continue **base investments that will enable the safe and stable delivery of city gas** to more customers while ensuring flexible procurement of LNG and facilities management to promote **investment efficiency**.
- **To achieve further growth in the 2020s, conduct investments in the electric power business, services, and overseas business.**

Business	Total investment (3 years)	Investment scenario
Gas	500 billion yen (49%)	<ul style="list-style-type: none"> • Investments for security, stable supply, and expansion of city gas usage (Maintenance of pipeline facilities etc.) • Large-scale capital expenditures on Ibaraki Line construction, Hitachi terminal expansion, and construction of customer information management system etc.
Electric power	30 billion yen (3%)	<ul style="list-style-type: none"> • Our own thermal power source to deliver gas and power to more customers (Mainly in the 2020s. Also promote power source procurement through new alliances and other means not reliant on investments) • Construct/acquire renewable energy sources for a low-carbon society
Services, other	230 billion yen (23%)	<ul style="list-style-type: none"> • Digitization investments, venture investments, technology development for the creation of portal sites, databases, management systems, and mobile platforms for the creation and optimal deliver of new services that improve profitability and meet the needs of customers. • Energy service and engineering business
(including real estate)	100 billion yen	<ul style="list-style-type: none"> • Real estate development for rental business
Overseas	260 billion yen (25%)	<ul style="list-style-type: none"> • Build energy infrastructure with focus on midstream and downstream • Invest in projects with low volatility and potential for stable returns
[FY2018 to FY2020]	1,020 billion yen	(Average of 340 billion yen/year)

Building an Energy Infrastructure (Figure for 2020s)



Supporting you Always and bettering every day

