KITAGAS GROUP
FY2016 MEDIUM-TERM MANAGEMENT PLAN

Hokkaido Gas Co., Ltd.

April 13, 2016

Introduction - KITAGAS GROUP Current Environment / Future Goals

Energy Issues in Hokkaido

- High oil dependency
- High oil consumption
- Issue of restarting a nuclear power plant
- Another electricity rate hike

Co_2 emissions 1.4x

Energy consumption 1.6x

In relative to national averages

Promotion of Energy Savings

- Decreases in energy consumption per household

Social structure change

- Aging society with low birthrate
- Population decline

Declining energy demand

Address environmental issues on a global scale

Shift to the full liberalization of energy markets

- 2016 full-scale liberalization of electricity retailing
- 2017 full-scale liberalization of gas retailing

KITAGAS Group Future Goals

Resolving Issues faced by Hokkaido, supporting sustainable society and growing in harmony with local communities

Creating a new energy society with greater energy savings and conformable life

Shifting from "product out" to "demand-oriented services"

KITAGAS GROUP seizes the liberalization of electricity retailing as an opportunity to advance its integrated energy service business

KITAGAS GROUP Integrated Energy Services

Creating a more comfortable society through the optimization of energy sources and environment

Our distributed energy systems and energy management will create an efficient and smart society

KITAGAS provides an innovative energy model by connecting energy assets (gas, heat, and electricity) best suited for each building and region

Improving energy efficiency with reduced environmental burden

- Creating a more comfortable society with KITAGAS Distributed Energy Services, using natural gas co-generation and a harmonized network of power grids

Promotion of energy / CO2 savings with customers

- Promoting energy and CO_2 reductions with ICT-driven, demand-side energy management

Reducing energy consumption in the entire society to realize environment-friendly and comfortable communities

Future Image of Integrated Energy Services

Full deployment of KITAGAS Energy Management System (EMS) throughout Hokkaido

Our integrated EMS offers energy solutions best-suited for each region by combining HEMS / IT services to resolve issues of Hokkaido, and contributes to the development of local communities

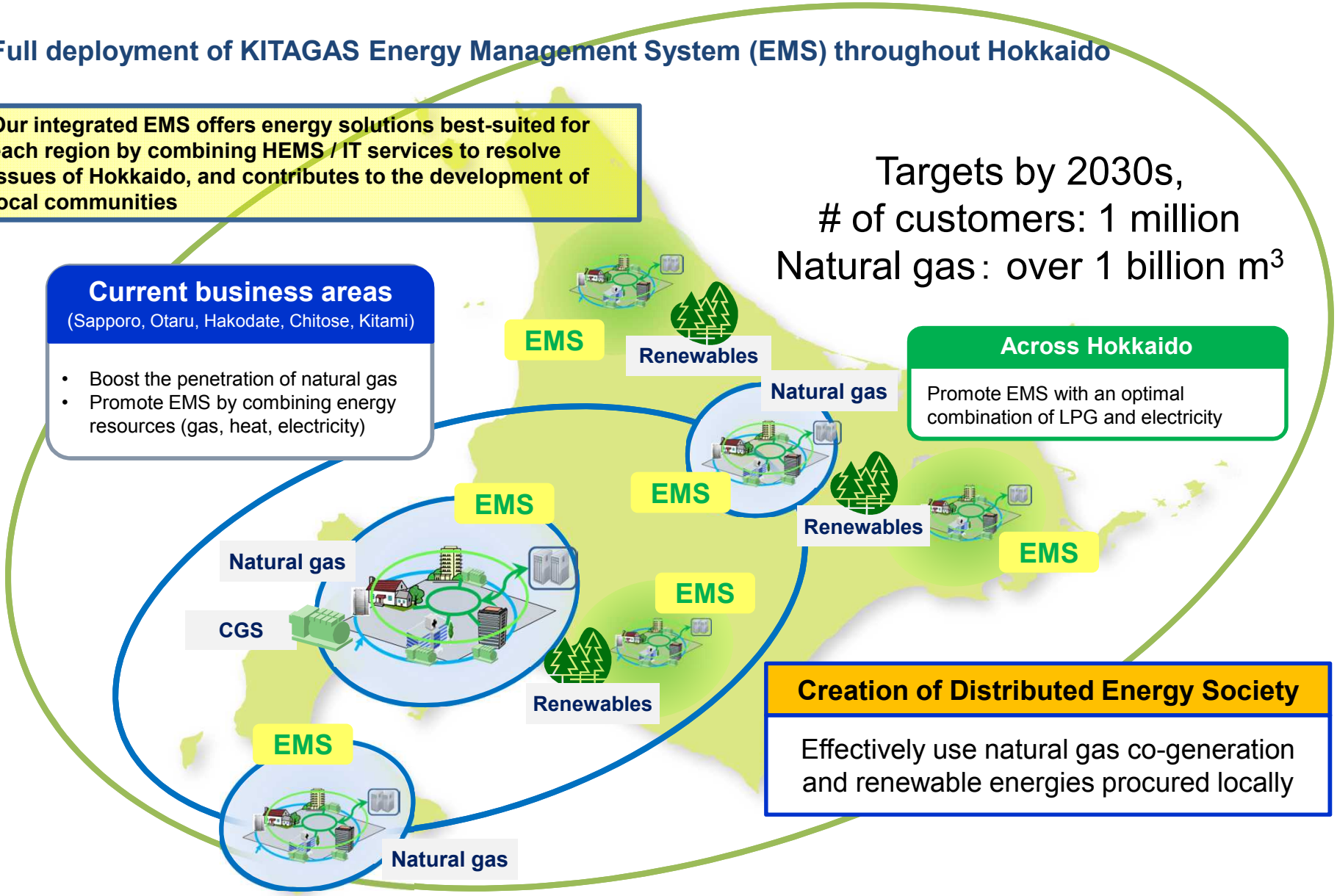
Targets by 2030s,
# of customers: 1 million
Natural gas: over 1 billion m^3

Current business areas
(Sapporo, Otaru, Hakodate, Chitose, Kitami)

- Boost the penetration of natural gas
- Promote EMS by combining energy resources (gas, heat, electricity)

Across Hokkaido

Promote EMS with an optimal combination of LPG and electricity



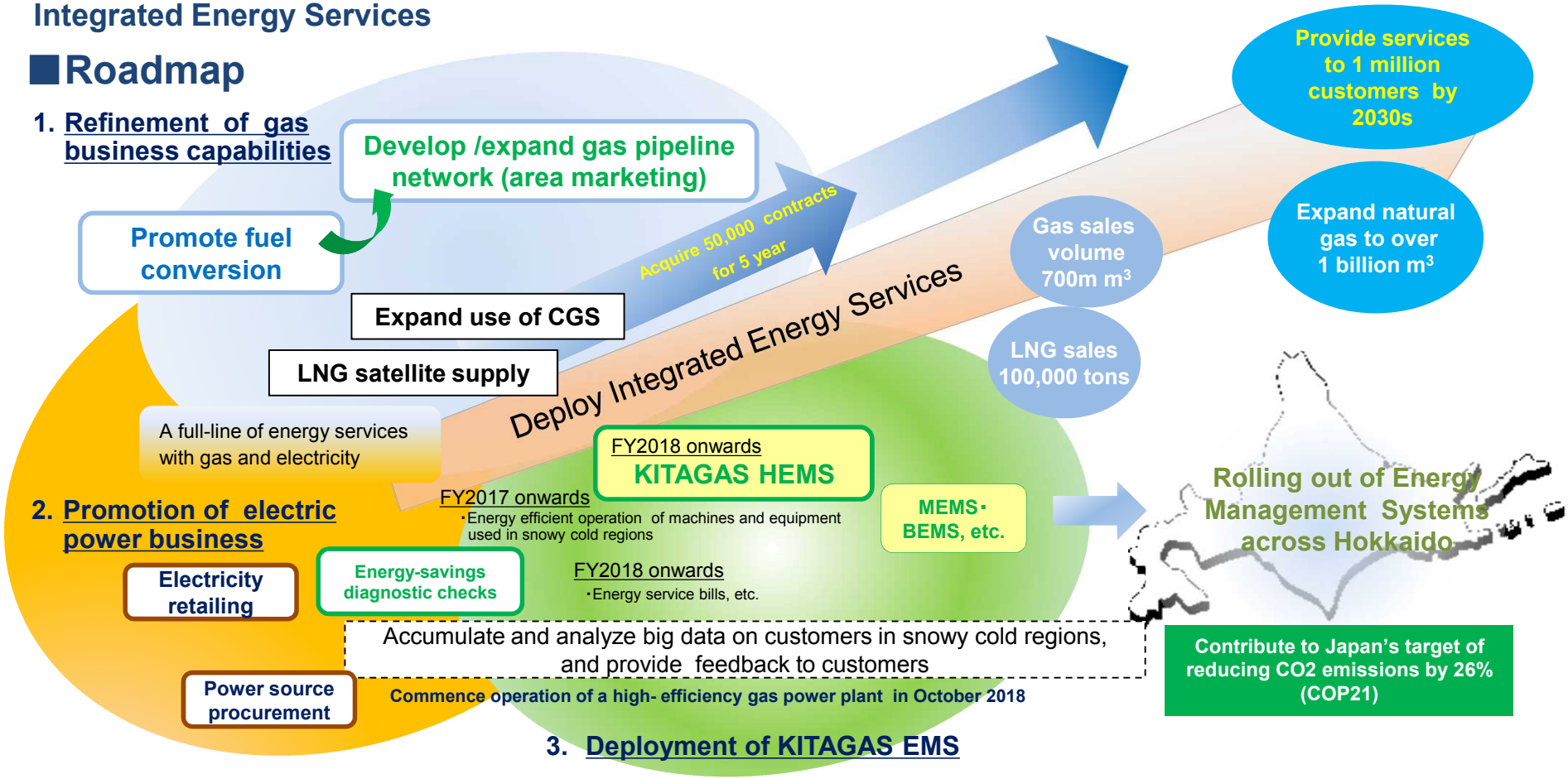
Creation of Distributed Energy Society

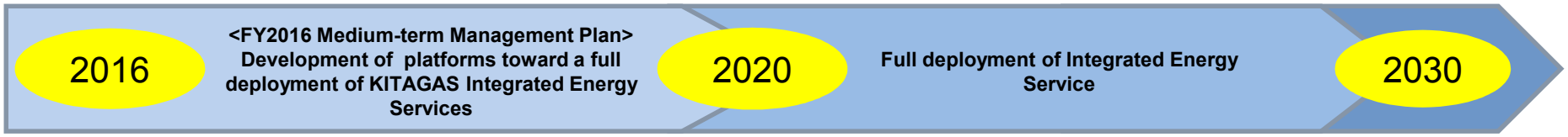
Effectively use natural gas co-generation and renewable energies procured locally

Roadmap of FY2016 Medium-term Management Plan

FY2016 Medium-term Management Plan sets out a roadmap for a full deployment of KITAGAS Integrated Energy Services

■Roadmap





FY2016 Medium-Term Management Plan - Three Pillars of Strategy
Key Initiatives towards 2020

1. Refinement of gas business capabilities

1)Develop /expand gas pipeline networks and promote fuel conversion (for household / commercial use)

2)Develop the platforms for integrated energy services by promoting CGS

3)Standardize the use of natural gas central heating systems in new houses and condominiums

4)Boost LNG sales by developing strategies for each target from small to large-scale customers (LNG Satellite Supply Services)

5)Strengthen gas work systems and improve services

6)Further increase security levels by integrating KITAGAS Group security functions

Target shares in houses equipped with home power generation systems

New housing: 50%

Existing housing: 20%

Target shares in customers with natural gas central heating systems

Over 95%

Gas Sales Volume

670 million m^3

# of customers

50,000

LNG Sales Volume

100,000 tons

2. Promotion of electric power business

1)Leverage customer contact points and increase partnership with gas operators in Hokkaido

2)Develop eco-friendly power sources to deliver efficient and cost-competitiveness energy

October 2018
Commence operation of a high-efficiency gas power plant (Ishikari LNG base)

# of customers

Over 140,000

Power Generation Scale

Over 200,000kW

Sales volume 1 billion kWh

3. Deployment of KITAGAS Energy Management Services (EMS)

1)Develop KITAGAS HEMS (to be launched in FY2018)
Actively promote HEMS as an energy saving tool to optimize gas and electricity for houses equipped with home power generation systems

2)Promote energy savings services in cooperation with customers

3) Explore possibilities of the introduction of gas smart meters and energy service charges

Introduction of HEMS

10,000 users

Aim to install HEMS in 50% of houses equipped with home power generation systems

1. Refinement of Gas Business Capabilities

Aiming to increase the number of customers and gas sales volume through expansion of gas pipeline networks and fuel conversion

Strategic marketing in highly-populated areas

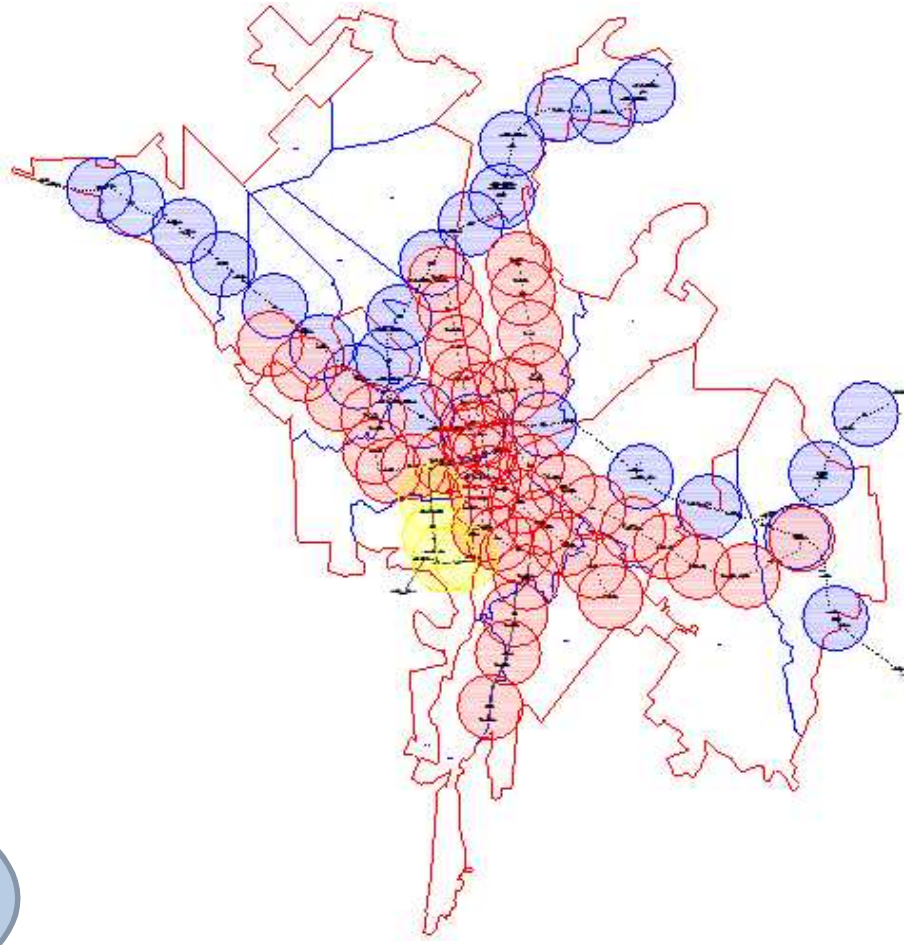
Promote the installation of gas pipes and fuel conversion in untapped areas by leveraging LINKS and open data

Invest in gas pipes

Over 10 billion yen by 2030

Cable installation approx. 330km

Aim to cover 80% of the region by focusing on near subway stations and other urban districts



:Subway stations :JR Railway stations : Tram stops

Marketing targets: subways , JR. etc. and other high-traffic areas

1. Refinement of Gas Business Capabilities - Promotion of natural gas CGS

Aiming to increase gas sales volume by promoting natural gas CGS to realize energy conservation with gas and electricity, while establishing a robust customer base to expand integrated energy services

ガスマイホーム発電

マイホーム発電 ENE・FARM エネファーム

コレモ COREMO ガスマイホーム発電

New model Launch in FY2017

New model Launch in FY2018

■ **Target figures for household CGS**

		FY2015 Forecast		FY2020
Total # of units		2,000	→	9,000
Share	New house	15%	→	50%
	Existing house	6%	→	20%

Increase HEMS installation rate to 50% in households equipped with home power generation systems → **Promote energy management services**

Develop smart remote controllers, power outage response systems, desiccant systems, and reverse power flow response systems → **Promote distributed energy systems while improving comfort and energy saving functions**

Develop the platforms for full deployment of integrated energy services

2. Promotion of Electric Power Business -Increasing the number of customers and power sources

Steps to expand KITAGAS electric power business

In 2016, launch retail sales including for household use. 58,000 customers

Make full use of customer contact points and bolster partnership (electricity sale consignment agreements) with gas operators in Hokkaido

Procurement of power sources

1. Power generation facilities of Group companies (Otaru Energy Center, Ishikari mega solar, etc.)

2.Tomakomai wood biomass power generation business * Use unused wood materials in forests in Hokkaido

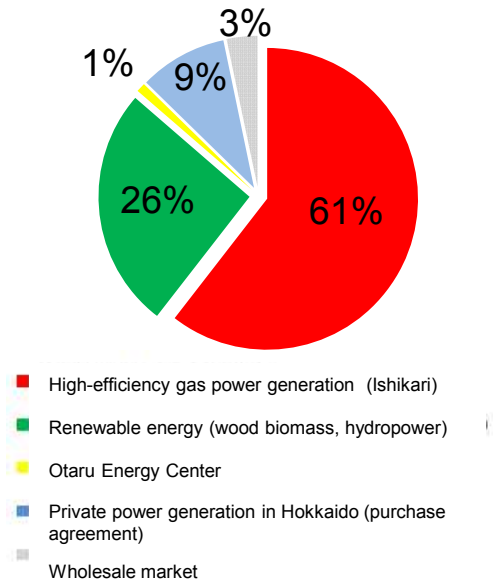
⇨ Start whole-volume purchase of electricity (5,000kW) in December 2016

3. Effective use of in-house power generation of other companies (Oji Paper, etc.)

4. Construction of high-efficiency gas power generation plants (within Ishikari LNG base)

⇨ Achieve power generation volume of 78,000kW in October 2018

■ Power source composition after launch of high-efficiency gas power plant (FY2019 planned)



Aim to achieve power generation capacity of over 200,000 kW by 2020 (140,000 customers and sales volume of 1 billion kWh)

- Fully leverage eco-friendly power sources by local production for local consumption (renewable energy, natural gas CGS)
- Procure competitive power sources (private power generation in Hokkaido) over the long-term
- Flexibly operate in-house power sources (high-efficiency gas power plants) depending on seasons and time zones (can be used to power sources for electricity balancing)
- Realize the optimal power source portfolio that reflects prices in wholesale markets

2. Promotion of Electric Power Business - Construction of a high-efficiency gas power plant (within Ishikari LNG plant)

High-efficiency Gas Power Plant - Snapshot

Power generation system	• High-efficient gas engine (equivalent to 50% of power generation efficiency, the world's highest efficient gas engine), which reaches the maximum output within 10 minutes after start-up, delivering highly efficient power generation in a wider load range
Capacity	78,000kW (7,800kW x 10 units) - *to be expanded to up to100,000kW*
Construction period	October 2016 (construction start) to October 2018 (operation start)
Total operation costs	Approx. 10 billion yen (including power grid installation in nearby substations)

Multiple high-efficient gas engines (Natural gas CGS) installed within Ishikari LNG plant
will reduce environment load and create synergies gas business through effective use of energy sources

Effective use of waste heat power
Not to discharge a single drop of heat waste

Total energy efficiency
Up to 80%
Cf. conventional power plant 40%

High CO_2 emission coefficient

0.338kg-CO_2/kWh
<Ref.> Hokkaido Electric Power: 0.688kg-CO_2/kWh
* FY2014 actual

Cost and CO_2 reduction effects by using heat waste in gas production process

Fuel costs
Down Up to 70%

CO_2 reduction
24,400tons/year

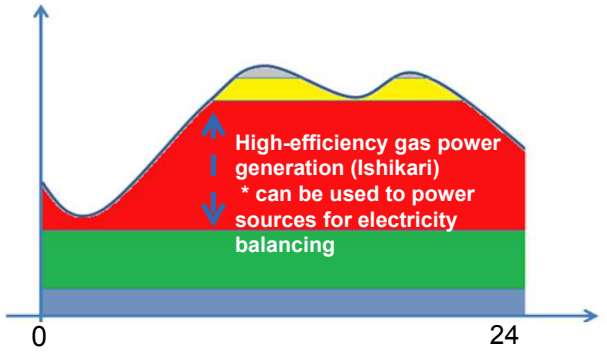
<Ref.> Conventional CO_2 generation

200,000 tons a year

<Assumptions>
CO_2 emission coefficient
- Hokkaido Electric Power: 0.688kg-CO_2/kWh
- High-efficiency gas power plant : 0.338kg-CO_2/kWh

Annual output 573 million nkWh

Power source portfolio after launch of high-efficiency gas generation plant



- Wholesale market
- Otaru Energy Center
- High-efficiency gas power plant (Ishikari)
- Renewable energy (wood biomass, hydropower)
- Private power generation in Hokkaido (purchase agreement)

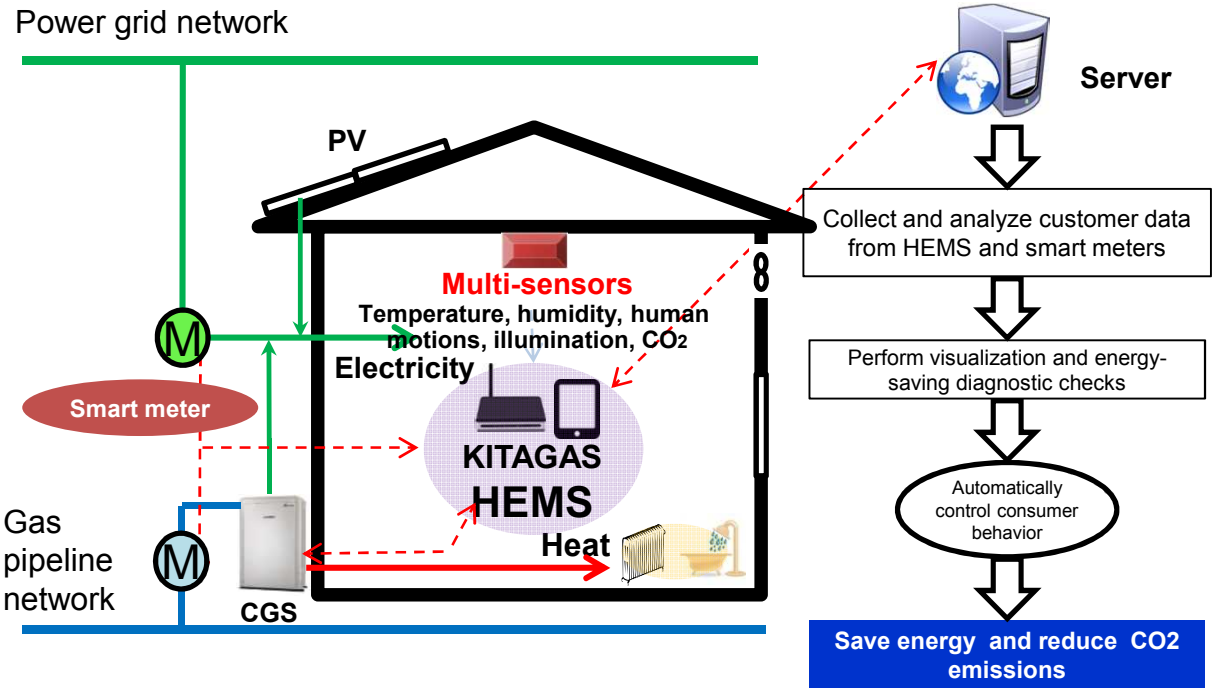
Aim to procure power sources within KITAGAS Group only, without depending on wholesale market

3. KITAGAS Energy Management Services (EMS)

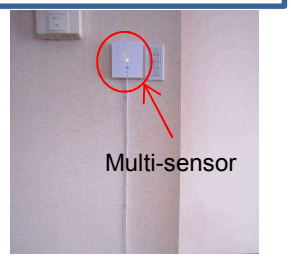
KITAGAS HEMS (to be launched in FY2018)

FY2015 Energy Saving Demonstration Project initiated by the Ministry of the Environment of Japan (CO2 Reduction Project)

Progress: KITAGAS has completed installation of smart meters in 100 pilot houses and started to collect and analyze living environment data and energy consumption. Now building database from surveys on customer's family structures and building age to provide optimal energy saving solutions



Install pulse units to collect gas consumption



Obtain data on temperature, humidity and other living conditions from multi-sensors

Schedule

2015 (winter)	Build database
2016 (fall-)	Demonstrate visualization and auto-control performance
FY2018	Product launch

Provide customers with optimal energy saving solutions by analyzing, accumulating and providing feedback on detailed data on their living environment and energy consumption

Provide customers with not only electricity but also automatic heating and cooling systems to realize a comfortable living environment in a northern region

3. KITAGAS Energy Management Services (EMS)

KITAGAS HEMS changes your energy consumption patterns and provides optimal energy saving solutions

＜Home Eco Consultant ＞

Our “Home Eco Consultants” certified by the Ministry of Environment of Japan analyze your energy consumption and provide optimal solutions

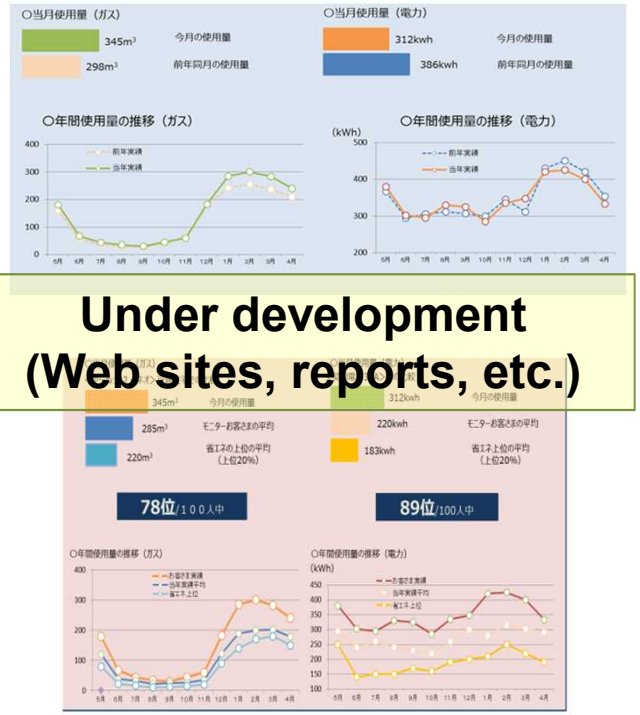
Aiming to train over 100 consultants within KITAGAS Group by FY2017

＜Building Energy Consulting＞

- Analyze gas and electricity usage at existing commercial buildings and hospitals to offer the optimal demand management and gas billing plans
- Facilitate the shift to natural gas with onsite inspections on energy consumption in small-to-mid businesses

<Energy saving services>

Visualize your energy consumption in comparison with other users, issue energy saving reports, provide optimal advice (members only)



Under development (Web sites, reports, etc.)

To be released in FY2016

Bolstering of Business Platforms for the Full Liberalization of Retail Gas Sales

KITAGAS GROUP brings together all its strengths to improve safety and service quality, while promoting the development of technologies and human resources in cold climate areas

Improvement of safety level

- Provide human resources to ensure the safety and security
- Transfer and improve technologies
- Improve skills of onsite professionals


Simulations and drills for emergencies and disasters

KITAGAS Group will integrate the supply and safety functions of KITAGAS and KITAGAS GENEX in the central Hokkaido

To be commenced in Sapporo, Otaru and Chitose in FY2016

KITAGAS 賃貸住宅向けプロパンガス 都市ガス同等料金＆サービス
Eフラット

Improvement of service quality

Differentiate our services with fixed rates and same services between KITAGAS and KITAGAS GENEX (LPG)

Human resources training for cold climates

Provide a full range of education and training programs using Technical Development & Training Center


Automatic snow drop systems

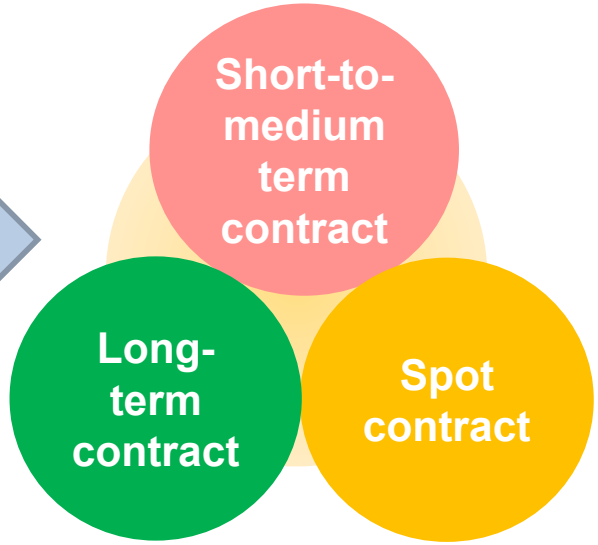

Training Center for Emergencies

Future LNG Procurement

Aiming to ensure stable and flexible procurement of high-quality raw materials at lower costs by effectively using two LNG tanks, while diversifying procurement methods, including short-to-mid-term, spot procurement in line with market conditions, in addition to long-term procurement from Tokyo Gas

Commence full-fledged operations of No.2 Tank in September 2016

Increase LNG volume to be procured in line with growing demand for natural gas and LNG and operation of high-efficiency gas plant



Diversification of procurement methods

Improve stability and flexibility

Reduce procurement costs over mid-to-long term

Key Target Indicator

By 2020

<Gas Business> # of customer: 580, 000 (50,000 new customers for the five years), Sales volume:670 million m^3, LNG sales volume 100,000 tons
<Electric Power Business> # of customers :140,000
<Financial Targets> Consolidated ordinary income: over 5 billion yen, Equity ratio:30%, ROE: 8%

Develop the platforms toward a full-scale deployment of KITAGAS Integrated Energy Services

■Sales Target (non-consolidated)

		FY2015 (forecast)	FY2020
Gas	# of customers (10,000) Sales volume (100 million m^3)	56.2 5.17	58.3 6.7
LNG	Sales volume (10,000 tons)	2.2	10
Electricity	# of customers (10,000) Sales volume (100 million kWh)	-	14 10

■ Financial Indicators (consolidated)

	FY2020
Ordinary income	5 billion yen
Equity ratio	30%
ROE	8%

■Capex Plan (consolidated)

	FY2016 - FY2020	Remark (key items)
Production facility	2.7 billion yen	Ishikari LNG Base #2 Tank, etc.
Supply facility	34.3 billion yen	Development of gas pipeline networks, replacement of aged pipes, etc.
Others	19.8 billion yen	Development of in-house power generators, etc.
Total	56.8 billion yen	