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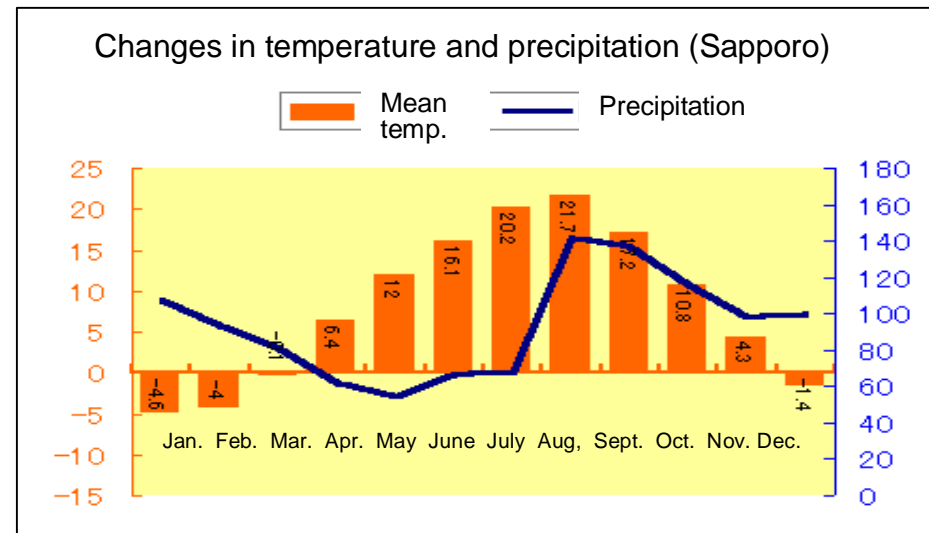
*Efforts of Hokkaido Gas Co., Ltd. to
Increase the Share of Natural Gas Usage*

July 9, 2009
Hokkaido Gas Co., Ltd.

1. Characteristics of Hokkaido

1-1. Geographical and climatic characteristics of Hokkaido

- Situated in the northernmost part of Japan ⇒ lat. 41 to 45 degrees north
- Area: 83,000 m² (approx. 22% of the total area of Japan)
- Population: 5.57 million (approx. 4.4% of the total population of Japan)
- Coldest region in Japan; the entire prefecture is a heavy snow area
⇒ Sapporo: Mean temperature: 8.5°C; mean snowfall: 625 cm

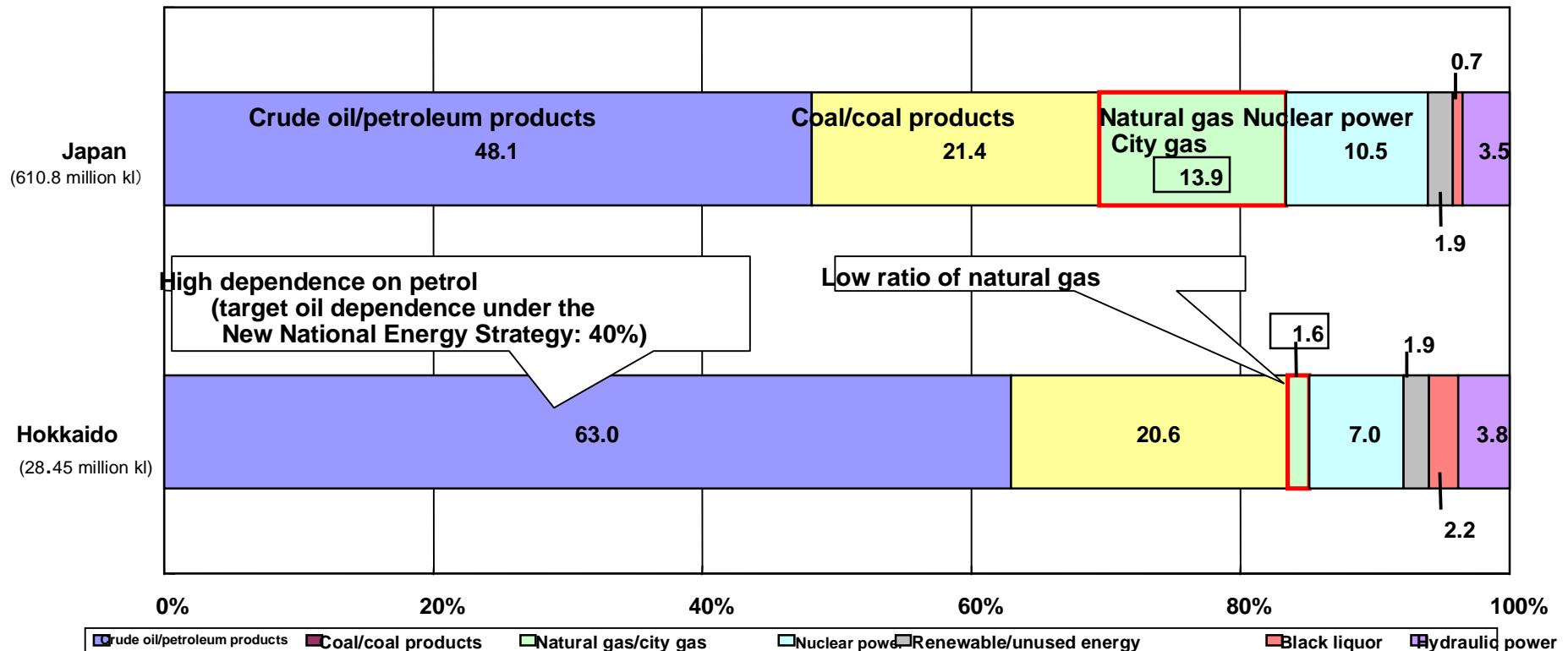


1. Characteristics of Hokkaido

1-2. Energy supply/demand conditions in Hokkaido

- High ratio of crude oil/petroleum products ⇒ 63.0% (48.1% nationwide)
- Low ratio of natural and city gas ⇒ 1.6% (13.9% nationwide)

Breakdown of total supply from primary energy (2004)



Source: Energy Supply/Demand Conditions in Hokkaido (Hokkaido Government)

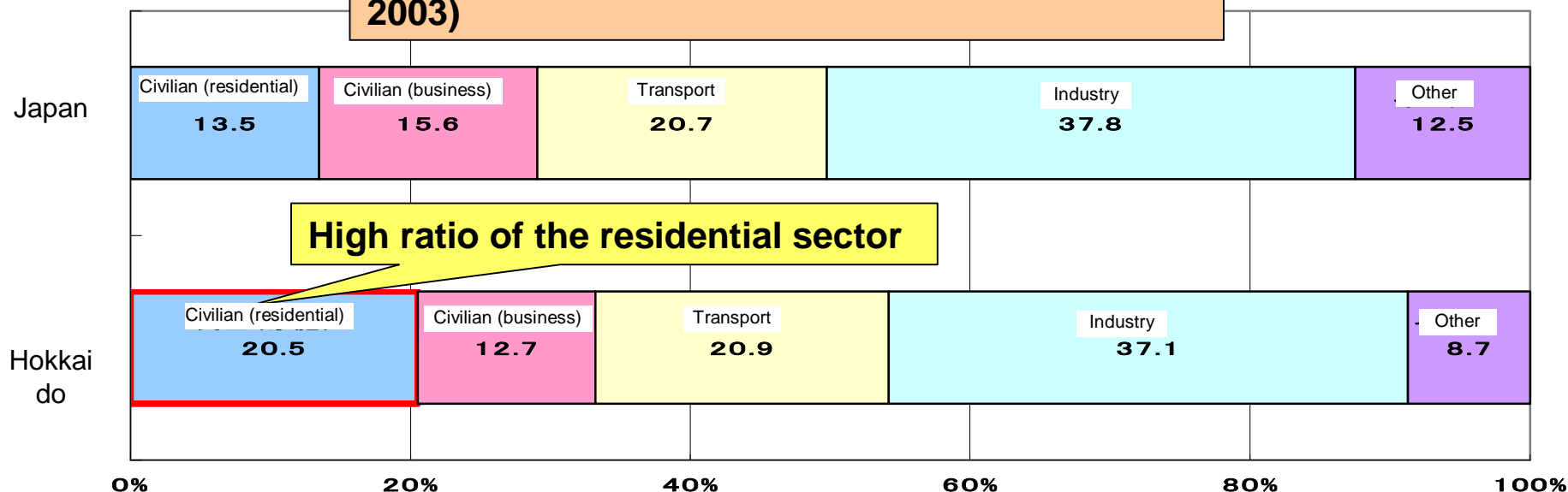
1. Characteristics of Hokkaido

CO2 emissions in Hokkaido

| | Hokkaido | | Japan | |
|---|----------|-----------------------|---------|-----------------------|
| | FY 2003 | Increase from FY 1990 | FY 2003 | Increase from FY 1990 |
| Total CO ₂ emissions (10,000 tC) | 2,047 | 16.9% | 34,336 | 12.2% |
| Per capita emission (tC/person) | 3.62 | 16.8% | 2.69 | +8.7% |

1.3 times the national average

■ Breakdown of CO2 emissions by sector (FY 2003)



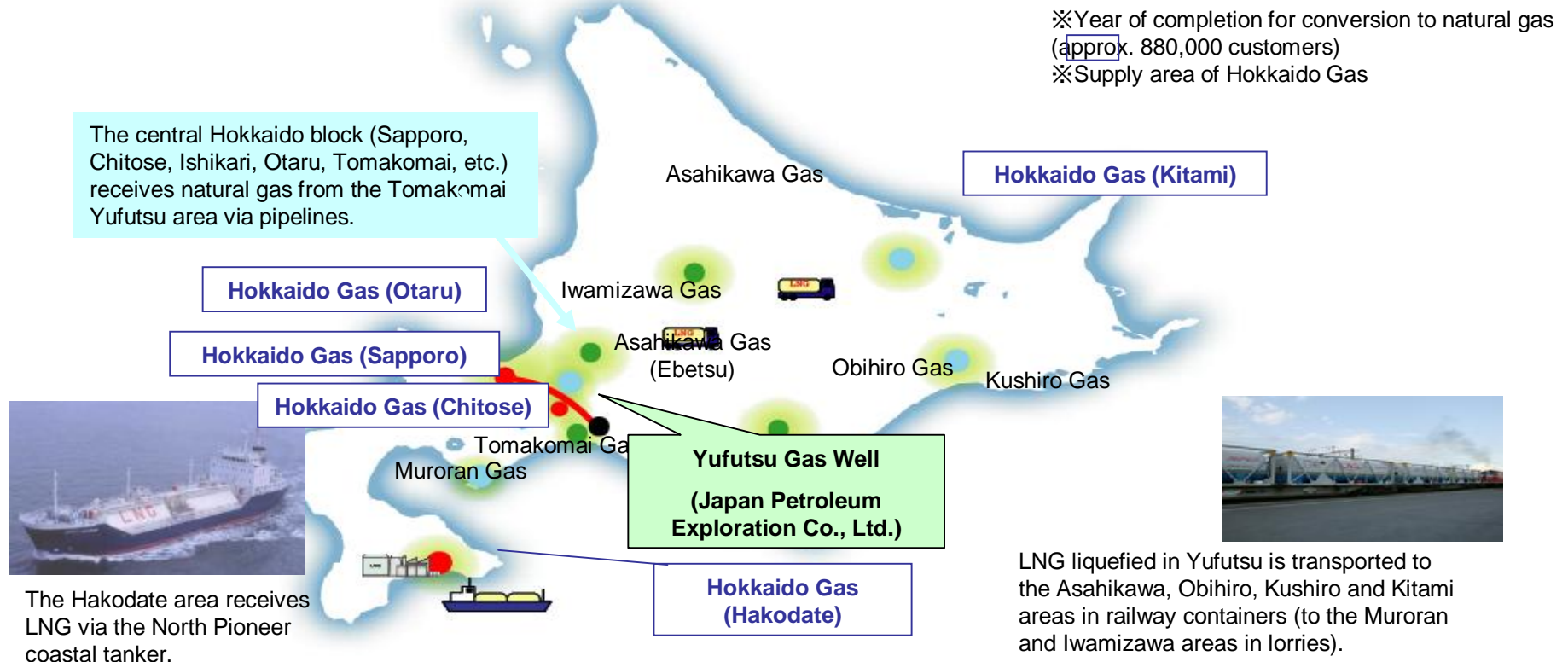
High ratio of the residential sector

- Significantly higher CO₂ emissions than the rest of Japan due to high dependence on petrol and coal
- The level of efforts to reduce environmental burdens (compared with the base year) tends to be lower than in the rest of Japan)

1. Characteristics of Hokkaido

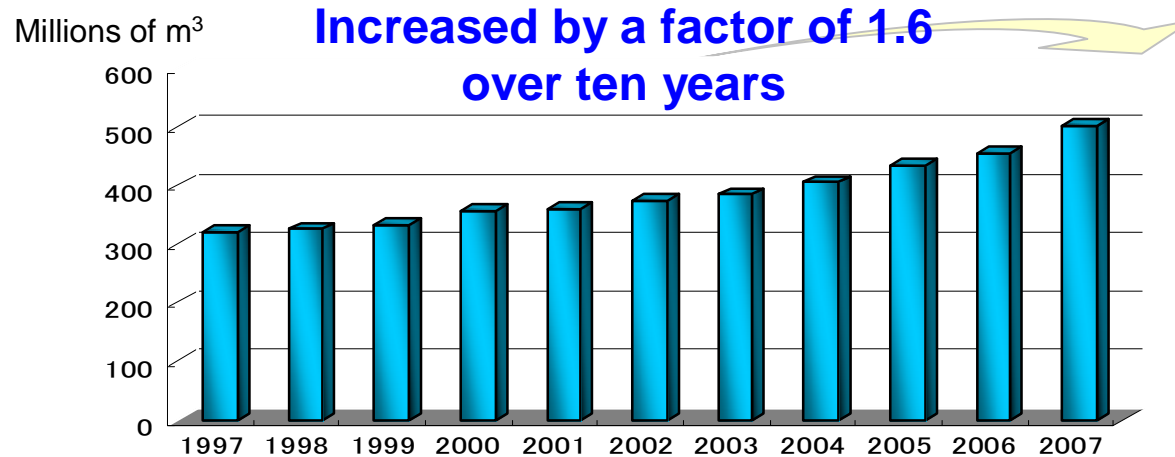
1-3. The city gas industry in Hokkaido

- Ten city gas companies (nine private and one public)
- No. of customers: 876,000; gas sales volume: 500 million m³; diffusion rate: 57%
- Conversion from city gas to natural gas in Hokkaido will be completed this December (partially LPG).
- Natural gas is received from the Yufutsu Gas Well via pipelines and LNG (using coastal vessels in the Hakodate area).



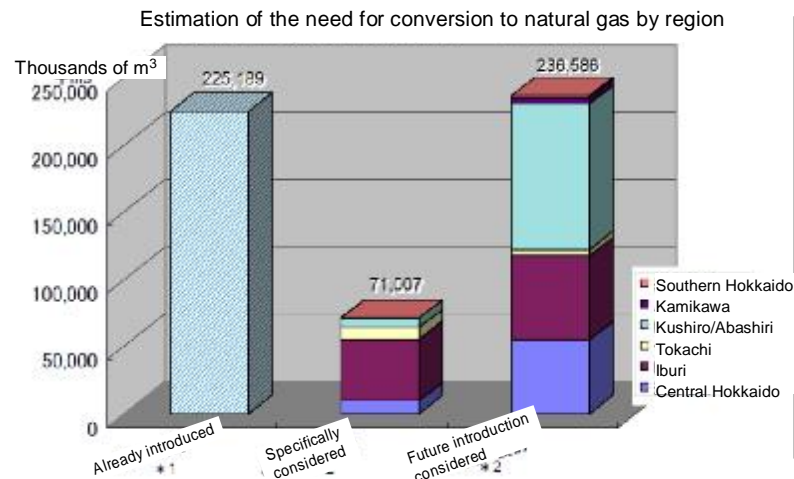
1. Characteristics of Hokkaido

1-4. Natural gas demand in Hokkaido



Industrial users' needs for natural gas
 (2007 survey by the Hokkaido Bureau of Economy, Trade and Industry)

Promotion of energy policies in Hokkaido
 (Excerpt from a 2007 report by the Hokkaido Bureau of Economy, Trade and Industry)

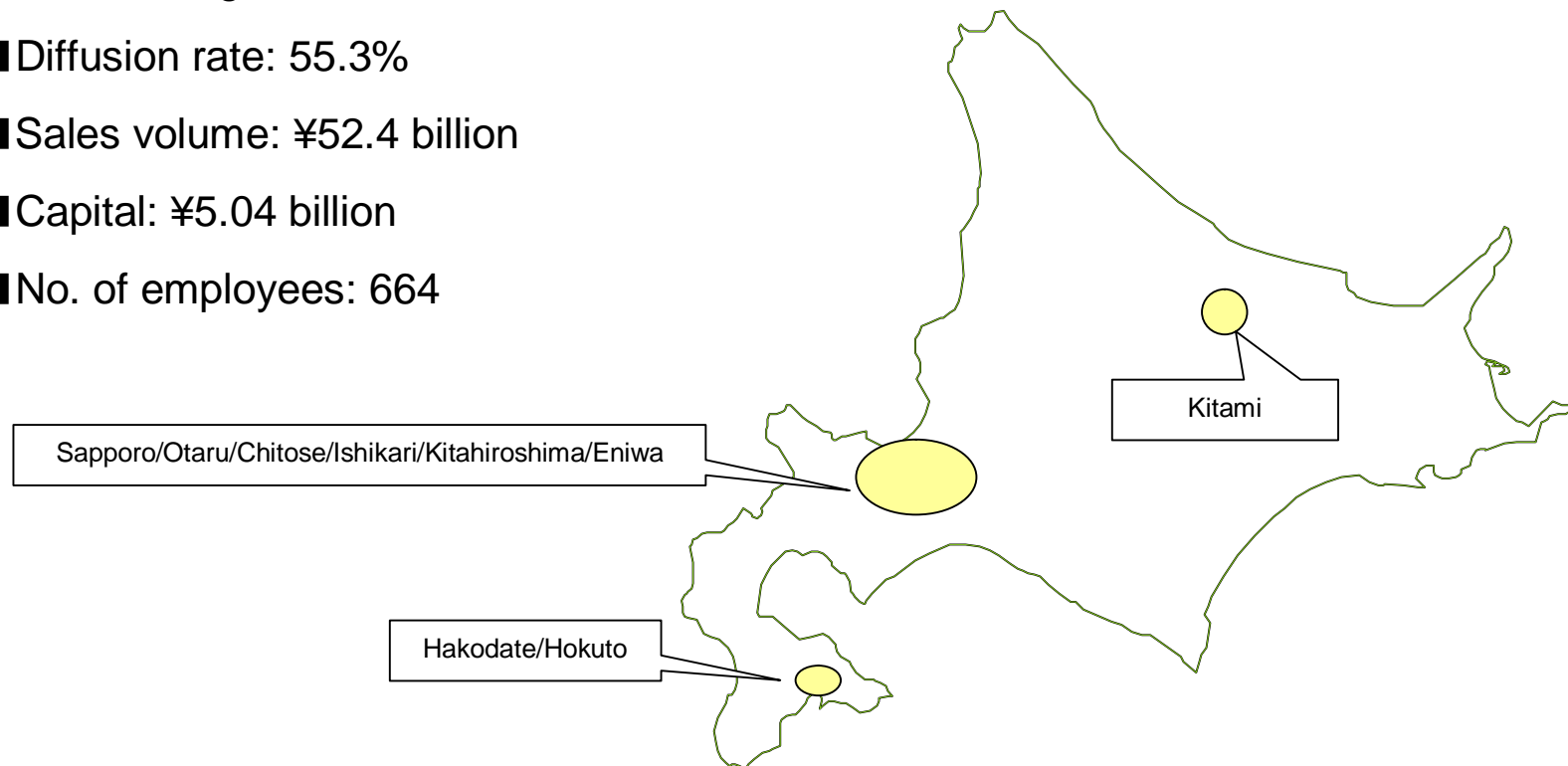


- ◆ **An increase in the introduction of natural gas is expected** due to potential need for natural gas in Hokkaido, future increases in energy demand, the need to ensure energy security, global environmental issues, etc.
- ◆ Strategies including the **establishment of a supply infrastructure in Hokkaido with a view to importing LNG** are necessary to meet future needs for natural gas by industries, etc., since most natural gas in Hokkaido is currently supplied by the Yufutsu Gas Well.

2. Overview of Hokkaido Gas Co., Ltd.

2-1. Company profile

- Establishment: 1911
- Supply areas: Sapporo, Otaru, Hakodate, Chitose, Ishikari, Kitahiroshima, Eniwa, Hokuto and Kitami (City gas is supplied to nine cities.)
- No. of customers: 563,000
- Volume of gas sales: 398 million m³
- Diffusion rate: 55.3%
- Sales volume: ¥52.4 billion
- Capital: ¥5.04 billion
- No. of employees: 664



2. Overview of Hokkaido Gas Co., Ltd.



2-2. The *Progress 2020* Medium-term Management Plan

■ Developed in April last year to promote the expansion of natural gas usage in Hokkaido

■ Management goals

○ Volume of city gas sales: 700 million m³ in FY 2020 (398 million m³ in FY 2008)

○ Total sales: ¥100 billion in FY 2020 (¥69 billion in FY 2008)

※ Consolidated

■ Four priority tasks:

① Steady promotion of safety enhancement

② Consolidation of regionally cultivated sales

③ Establishment of a gas supply base from a long-term standpoint

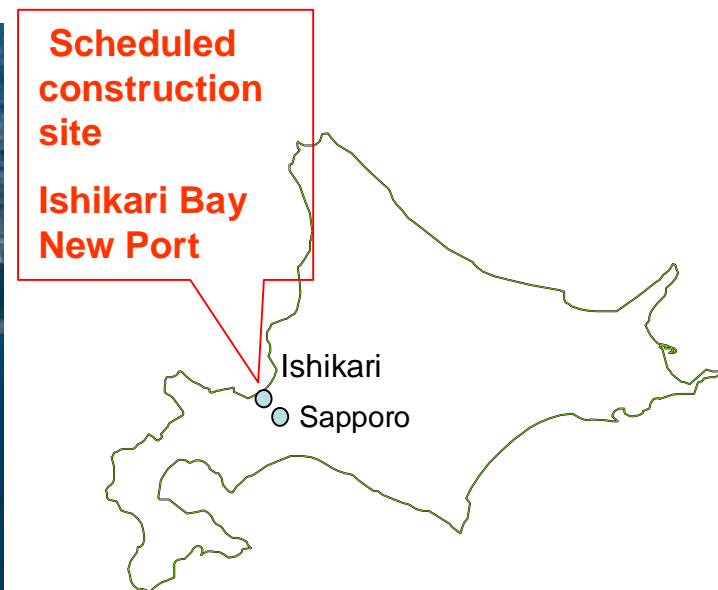
④ Promotion of group structural reform

2. Overview of Hokkaido Gas Co., Ltd.

Priority task ③: Establishment of a gas supply base from a long-term standpoint

Significance of constructing an LNG base in Hokkaido

- Establishment of an energy supply base in Hokkaido (expansion of the use of natural gas)
- Improved security of supplies through diversification of supply sources
- Long-term infrastructure development to prepare for future increases in demand (ensuring supply capacity)



2. Overview of Hokkaido Gas Co., Ltd.

Overview of the Ishikari LNG base

- Construction site: Shiko Chuo 4-chome, Ishikari (East side of Zone No. 3, central wharf of Ishikari Bay New Port)
- Site area: approx. 100,000 m²
- Main facilities:
 - LNG tank (180,000 KL × 1)
 - LNG vaporizer
 - Receiving berth for ocean LNG vessels
 - Shipping berth for coastal LNG vessels
 - Truck shipping facility, etc.
- Scheduled construction term:
 - Construction commenced in August 2008
 - Operation to be started in December 2012
- Total project cost: approx. 40 billion yen



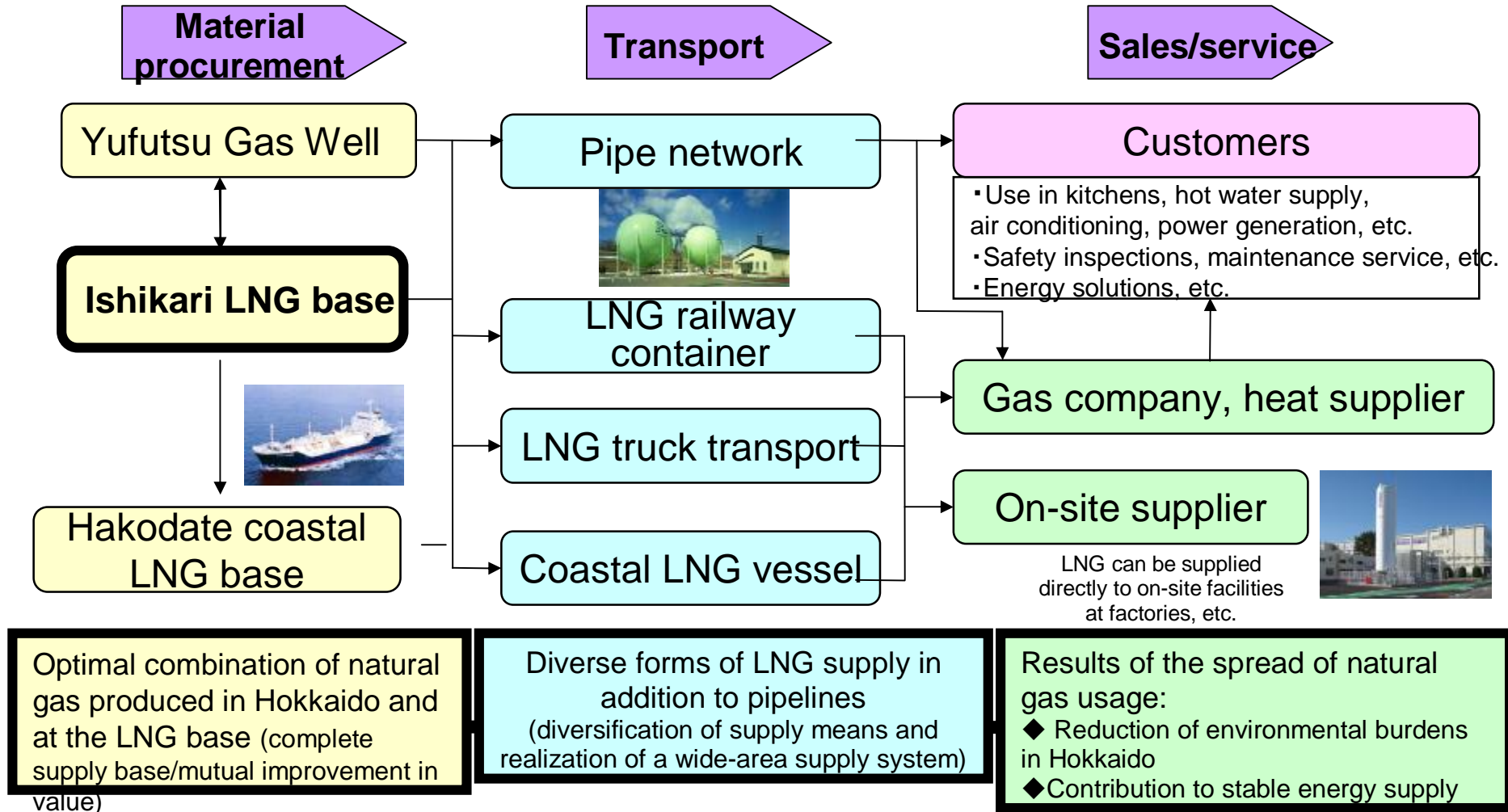
↑ Artist's rendering of the PC-type above-ground LNG tank



145,000-m³-class MOSS-type LNG vessel (artist's rendering)

2. Overview of Hokkaido Gas Co., Ltd.

Future vision of the natural gas value chain



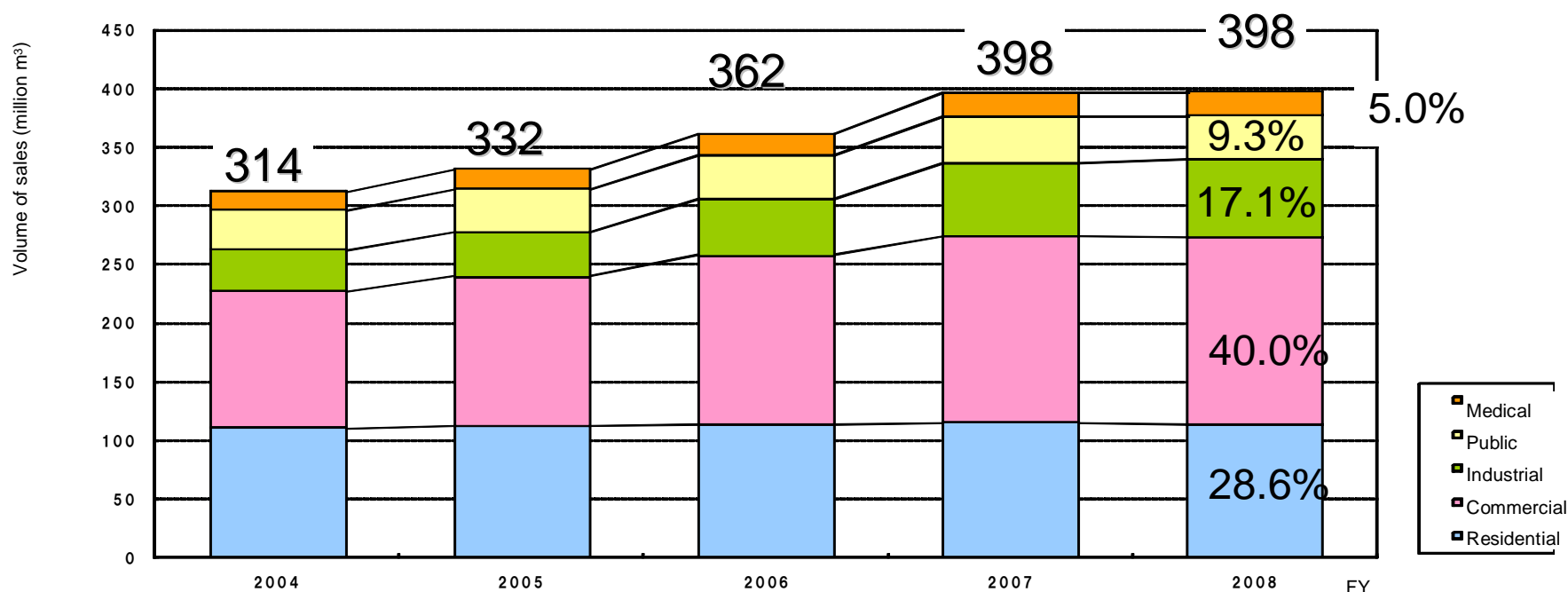
3. Specific Details of Sales Strategies

3-1. Status of the gas market

■ Volume of gas sales

After a long period of year-on-year increases in the volume of gas sales thanks to rising commercial and industrial demand, the figure decreased (by 0.6%) in FY 2008 compared to the previous period for the first time in 61 years due to economic stagnation and high winter temperatures.

Changes in the volume of gas sales



3. Specific Details of Sales Strategies

Examples of advanced natural gas usage



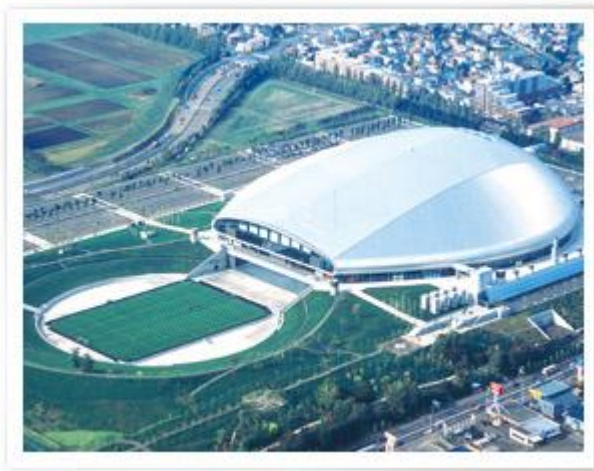
Regional air-conditioning systems



High-efficiency central heating



High-efficiency gas turbine power generation



Natural gas co-generation



Natural gas vehicles



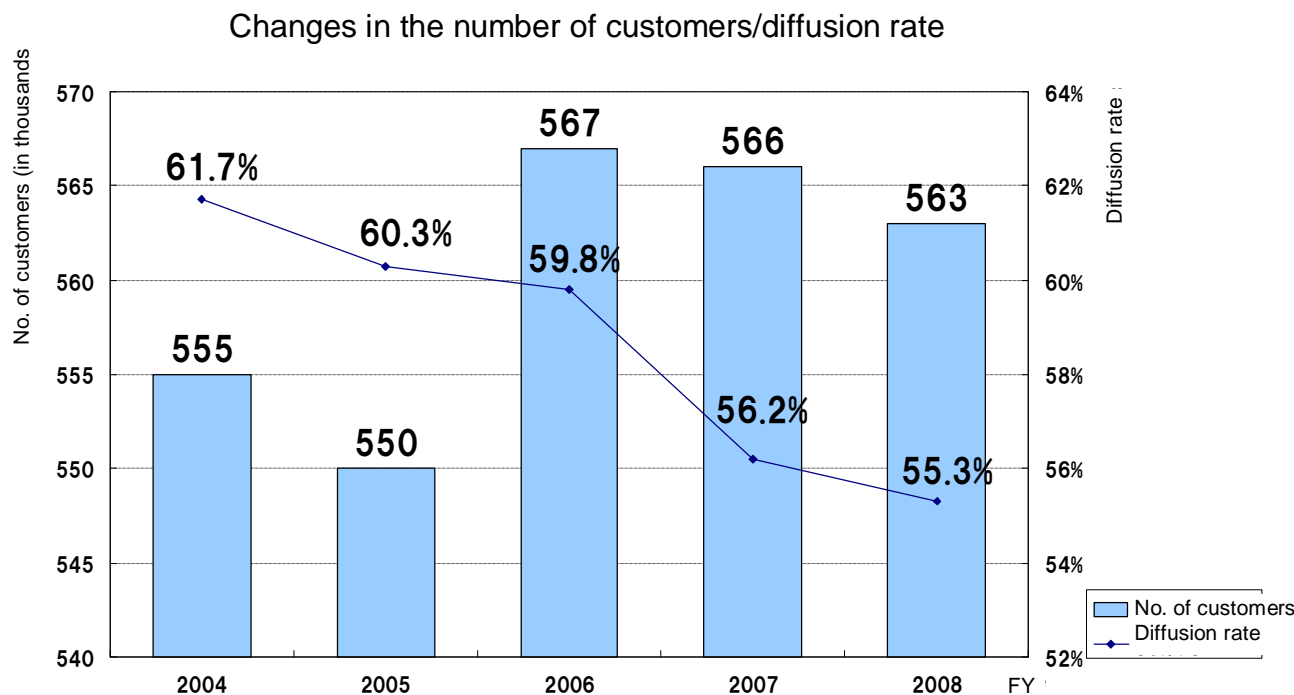
Household fuel cells 13

3. Specific Details of Sales Strategies

3-1. Status of the gas market

■ Number of customers/diffusion rate

The number of gas customers is decreasing yearly as the number of removals associated with the demolition of buildings and switching to other energy sources exceeds the number of new customers. The diffusion rate has decreased by 6.2% in the last five years.



3. Specific Details of Sales Strategies



Competition with other energy sources

Kerosene

- Kerosene accounts for more than 90% of heat sources for domestic hot water supply and heating ⇒ Kerosene culture
- Increase of kerosene prices to more than ¥130 per liter last year (around ¥60 at present)
 - Wild fluctuations in the price of kerosene – which is essential for living – affected consumer perception. People are gradually becoming less dependent on kerosene.

Electricity

- The amount of all-electric housing is increasing yearly, and now accounts for more than 60% in the market for newly constructed housing.
- 134,000 households in total ⇒ Approx. 5% of all stock
- Increased share of IH cook-tops

3. Specific Details of Sales Strategies

3-2. Strategies for gas market expansion

Progress 2020 priority task ②: Consolidation of regionally cultivated sales

- Promotion of the spread of natural gas for residences and small-scale businesses to establish business/income bases for sustainable growth
- Contribution to CO₂ emissions by customers through the spread of energy-saving devices/systems for effective use of environmentally friendly natural gas

Residential

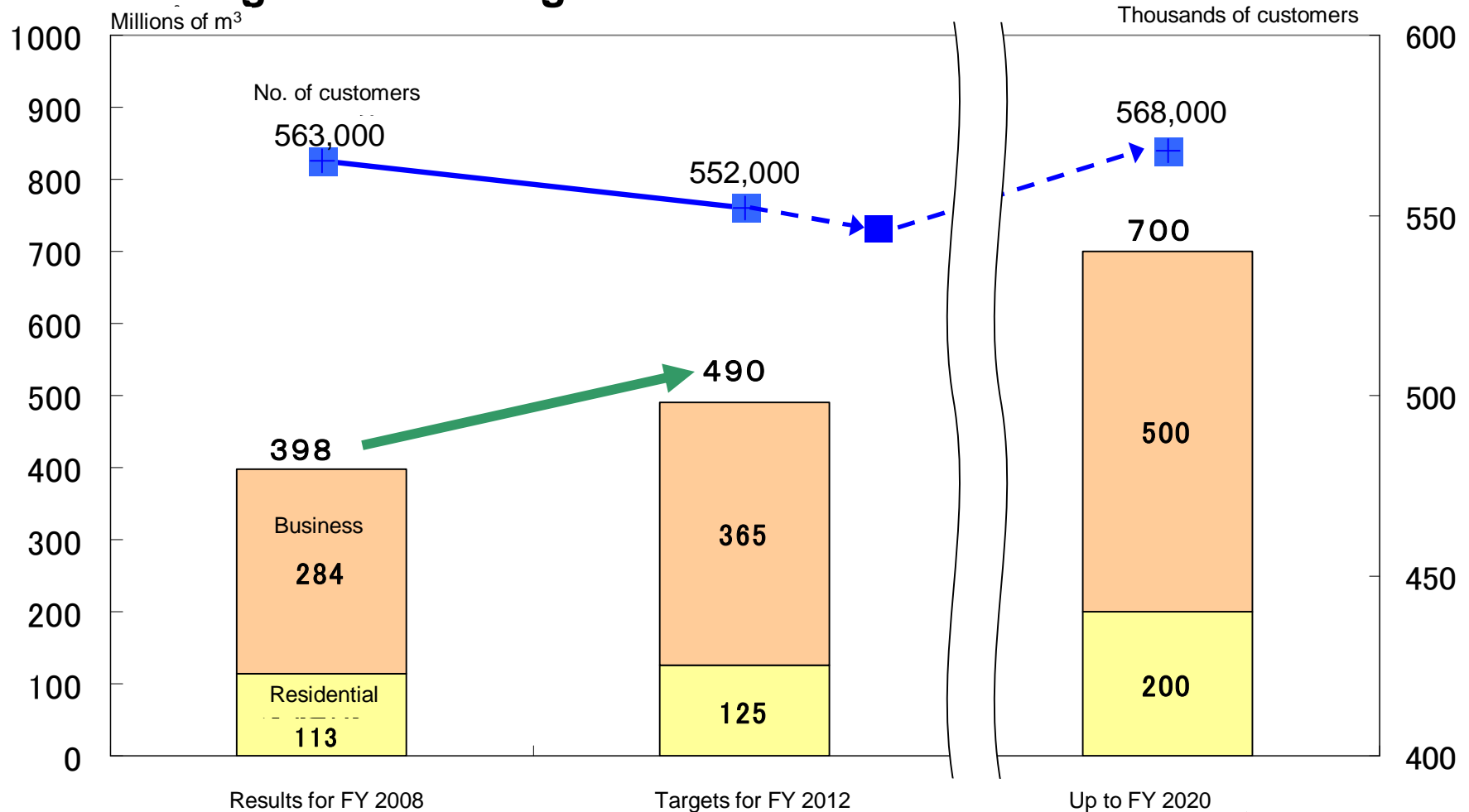
- Market for newly constructed buildings: maintenance of the share for condominiums and increase of the share for detached housing
- Market for existing buildings: promotion of the conversion of fuel to natural gas with focus on hot water supply and heating

Industrial

- Sales promotion through the consolidation of sales for a variety of medium- and small-scale businesses and cooperation with the Integrated Regional Channel
- Consolidation of proposals on effective energy use through solution sales, promotion of energy service provider (ESP) and energy service company (ESCO) projects

3. Specific Details of Sales Strategies

Progress 2020 priority task ②: Consolidation of regionally cultivated sales – target volume of gas sales



3. Specific Details of Sales Strategies

3-3. Improvement of sales and service systems

Restructuring of the sales/service system through the Integrated Regional Channel

- Review of the existing sales system for residential use by the 11 service shops of 8 companies in the Sapporo area, and establishment of 4 Integrated Regional Channels (January 2010)
- Promotion of one-stop services for end users as a basis for regional sales (Management of sales, construction and maintenance in an integral manner, consolidation of contacts with customers)
- Establishment of a system to develop natural gas demand mainly in the residential and small-business sectors

Consolidation of the sales system by repositioning the workforce after completion of conversion to natural gas

- As the Hokkaido Bloc Joint Project for Caloric Value Conversion (to which the company dispatches employees) will finish at the end of this year, the company's entire workforce will be repositioned in January 2010 to consolidate the sales system.

3. Specific Details of Sales Strategies

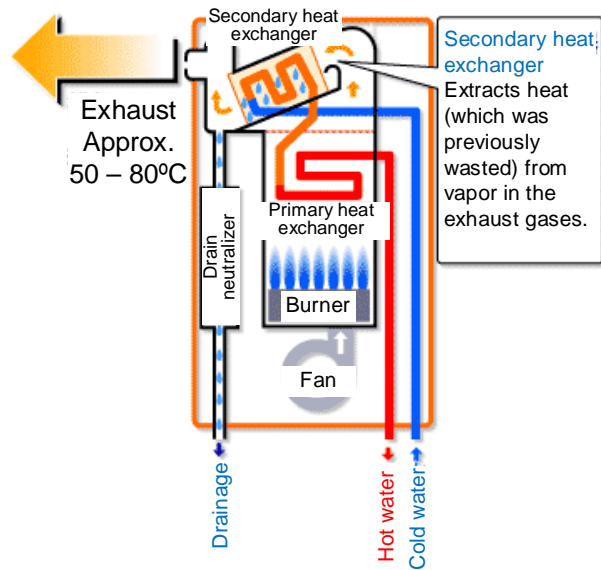
3-4. Development/spread of energy-saving devices and systems

For detached housing 

Promotion of the spread of latent heat recovery-type gas central heating systems

For condominiums 

Heat efficiency can be improved dramatically by recovering and using waste exhaust heat



Comparison of heat efficiency

Heat efficiency for hot water supply 80%



Heat efficiency for hot water supply 95%

Heat efficiency for heating 89%

Conventional hot water supply/heating

Eco-Jozu/FACT



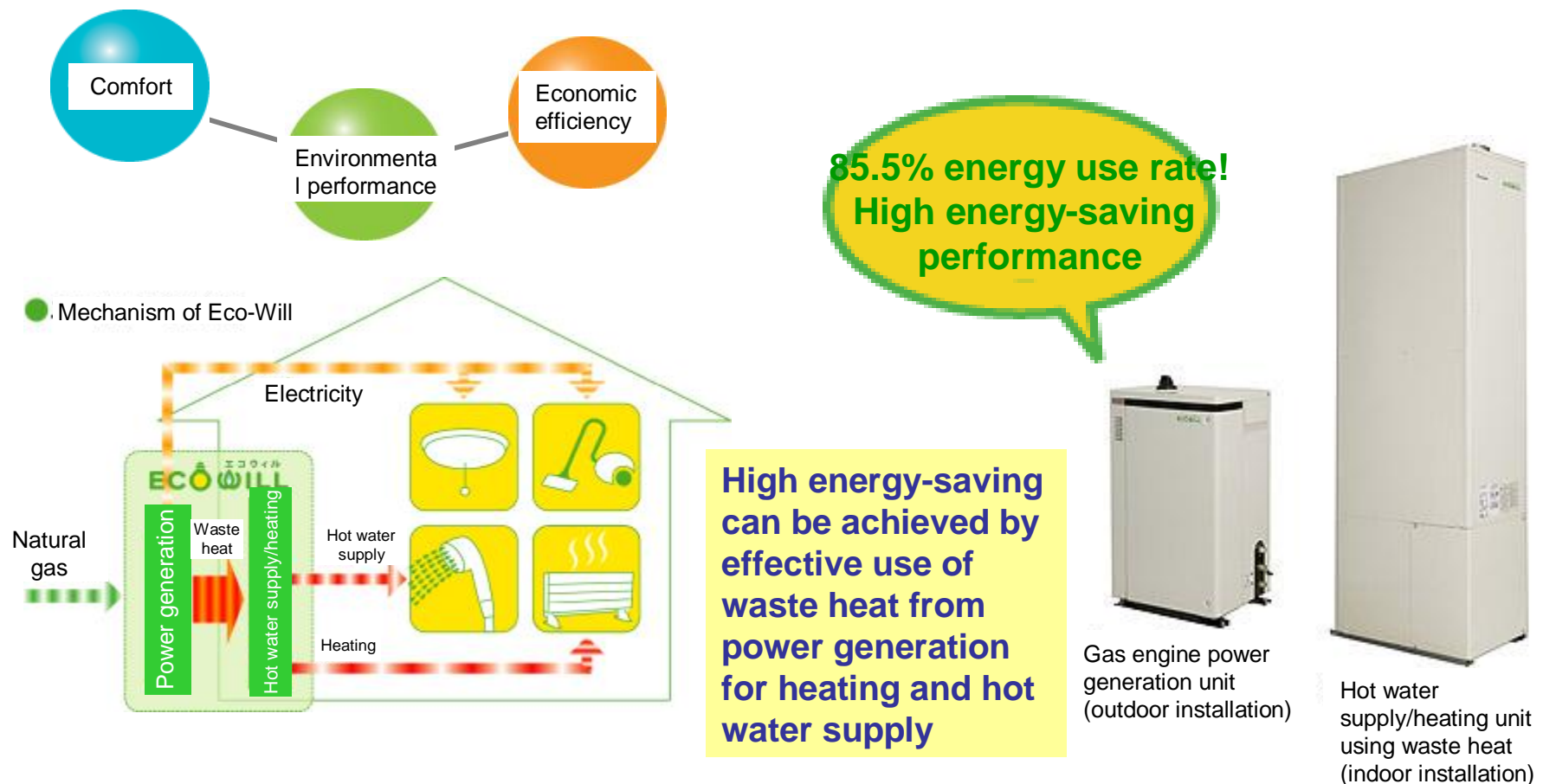
Contribution to CO₂ reduction
CO₂ reduction of approx. 21% or 430 kg a year (compared with the conventional type)

3. Specific Details of Sales Strategies

3-4. Development/spread of energy-saving devices and systems



Promotion of the spread of Eco-Will (a residential-use cogeneration system)



3. Specific Details of Sales Strategies

3-4. Development/spread of energy-saving devices and systems

Promotion of the spread of the Double Generation system to leverage the blessings of the skies and the earth

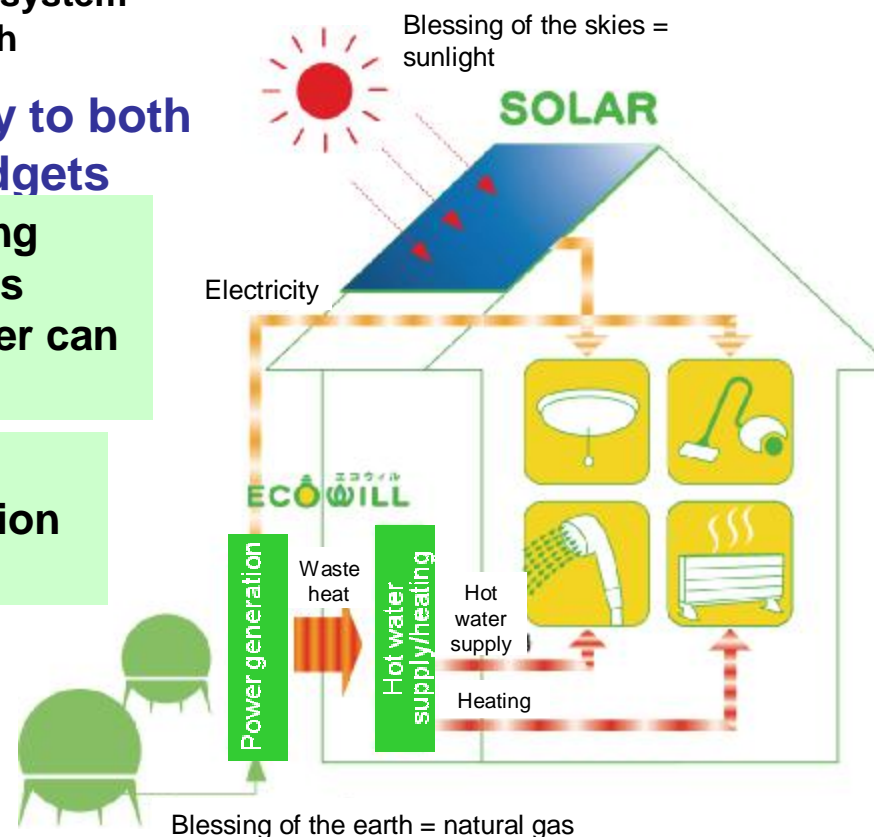
Realization of a lifestyle that is friendly to both the global environment and family budgets

● Energy costs can be reduced by combining Eco-Will and solar power generation. This is economically advantageous as excess power can be sold.

● A rational system that reduces power consumption through the optimal combination of electricity and gas

● The Double Generation system further increases the CO₂ reduction effect.

エコウィル
ECO-WILL × SOLAR



3. Specific Details of Sales Strategies

3-4. Development/spread of energy-saving devices and systems

Efforts for R&D and commercialization of Ene-Farm technology (fuel cells for residential use) for cold regions



- Joint research with Hokkaido University (2001 –)
- Participation in NEF's experimental study (2002, 2003)
- Participation in METI's large-scale demonstration project (2005 – 2008)
- Joint development with manufacturers (Ebara Ballard, Panasonic) (2005 –)
- Acceleration of R&D related to devices designed for cold regions with the goal of introduction to the market

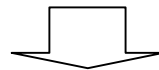


3. Specific Details of Sales Strategies

3-5. Future tasks

- Stop the downward trend in the number of customers and the diffusion rate
 - Halt conversion to other energy sources (electricity, LPG), expand market share for use in newly constructed houses

- Expand the volume of gas sales for use in existing residences
 - Promote fuel conversion targeting demand for hot water supply/heating by kerosene



Paradigm shift from kerosene culture to natural gas culture

4. Conclusion

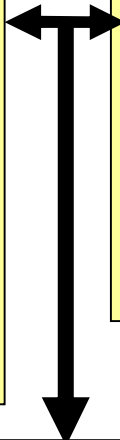


Characteristics of Hokkaido

- **High dependence on oil**
 - 61% of primary energy sources (48.1% nationwide)
 - Kerosene accounts for more than 90% of heat sources in domestic hot water supply/heating.
 - ※Share of natural gas in primary energy sources: 1.6%
- **Per-capita CO₂ emissions are 1.3 times the national average.**

Hokkaido Gas

- **Establishment of gas supply bases**
 - Opening of a large LNG base (December 2012)
- **Promotion of community-based sales**
 - Integrated Regional Channel (January 2010)
- **Development of products suited to the characteristics of cold, snowy regions**



Realization of an environmentally friendly society in Hokkaido by expanding the use of natural gas