

“Towards a ‘Green Future’ with Natural Gas in Asia”

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Outline and Significance of the Paris Agreement

The Paris Agreement, which was adopted at COP 21 in December 2015, was a historic turning point in the following context.

- It was the first fair agreement participated by all countries.
- Quantitative restriction target (2°C target) on temperature rise was set.



Source: The Government of France

Japan's GHG Emission Reduction Target

Japan's GHG emission reduction target is -26% in FY2030 compared to FY2013.

■ Japan's Major Efforts towards Reduction of GHG

- Promoting introduction of facilities/equipment with high energy-saving performance
- Enhancing energy-saving of buildings (housing)
- Expanding area-wide energy use
- Introducing to the best degree, renewable energies
- Conducting thorough energy management using HEMS, smart meters, etc.

■ Plans Promised by Major Countries

	Comparison with 1990	Comparison with 2005	Comparison with 2013	To be reduced by
Japan	-18.0%	-25.4%	<u>-26.0%</u>	2030
U.S.	-14% – 16%	<u>-26% – 28%</u>	-18% – 21%	2025
EU	<u>-40%</u>	-35%	-24%	2030

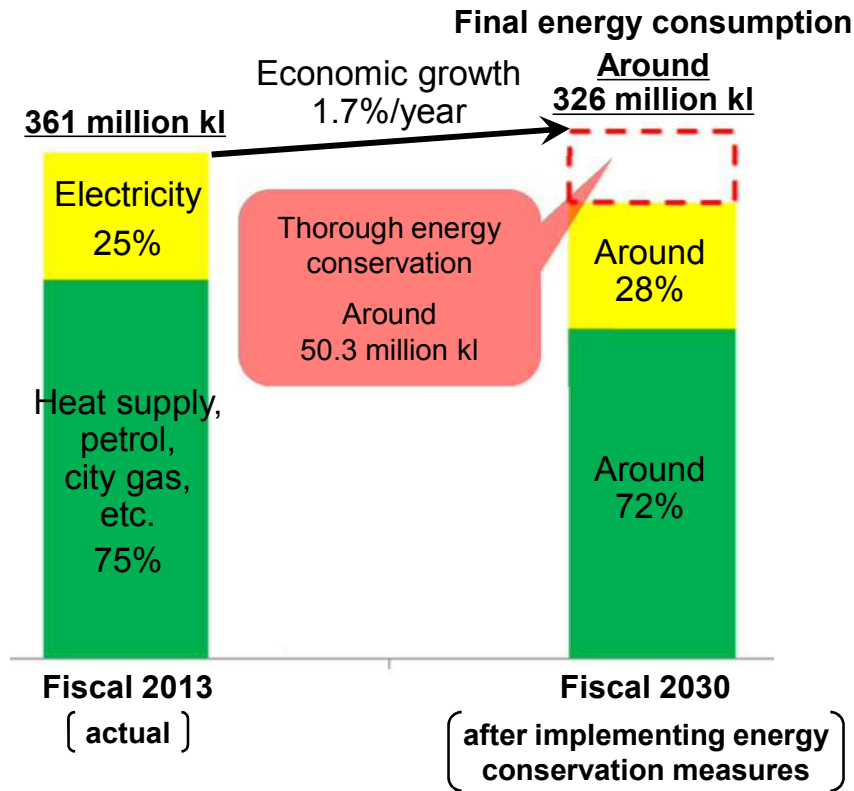
Source: Energy White Paper

*Underlines indicate the country's base year

Japan's Energy Policy

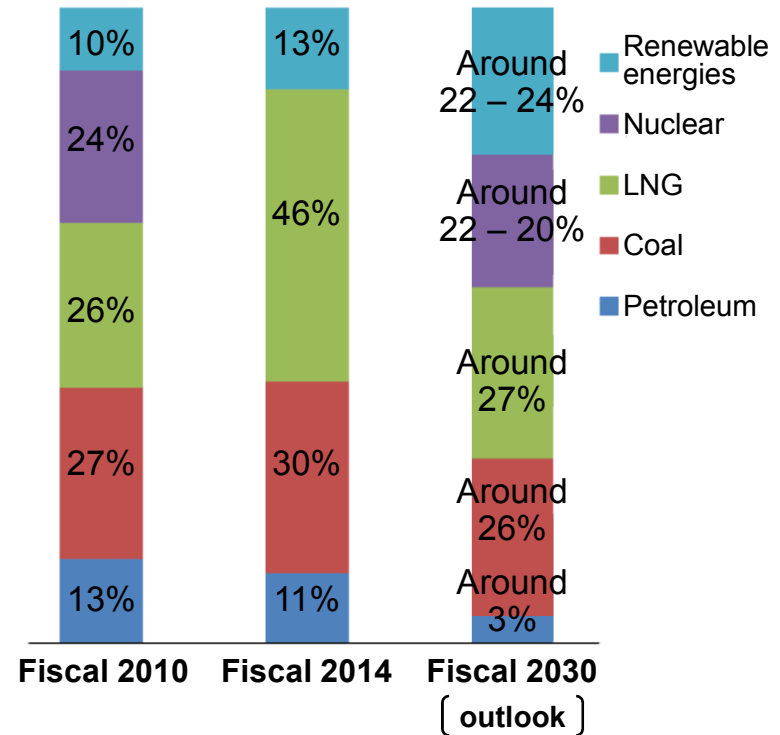
According to the Long-Term Energy Supply and Demand Outlook provided by the Japanese government, energy demand can be reduced by 13% in 2030 compared to 2013 by taking thorough energy conservation measures in all industries.

Energy Demand



Source: The Long-Term Energy Supply and Demand Outlook

Electric Power Source Composition



Source: Energy White Paper

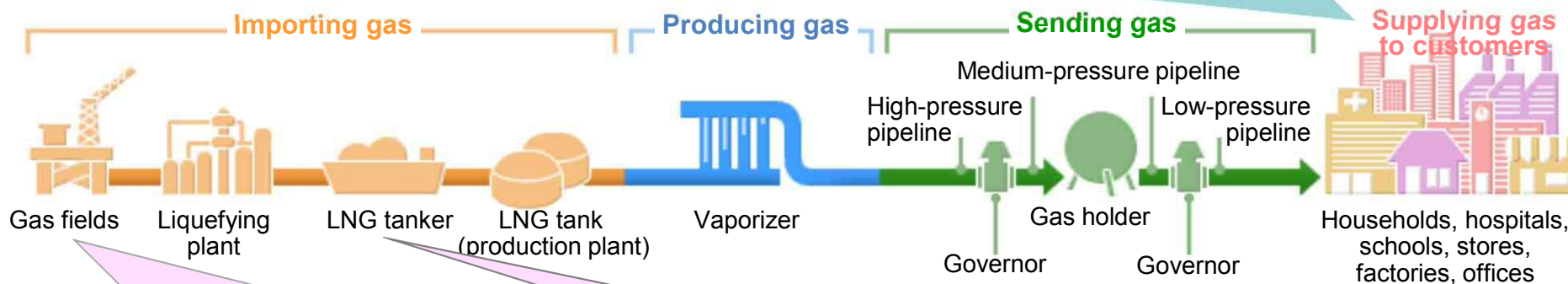
Efforts for the Entire LNG Value Chain

Japan's city gas operators have expanded the business domain in the LNG value chain and have promoted reduction of CO2 emissions by widely spreading use of natural gas utilizing energy conservation technologies.

Efforts in the LNG Value Chain

[Sales]

Advanced energy conservation engineering technologies



[Development]

Investment in upstream business
(CO2 underground reservoir, etc.)



[Imports]

Introduction of highly efficient LNG tankers



2. Efforts for Environmental Preservation by Japan's City Gas Industry The Japan Gas Association

Japan's city gas operators are contributing to the reduction of CO₂ from consumer energy consumption by expanding use of highly efficient equipment and shifting fuel to natural gas.

Widespread Use of Highly Efficient Equipment

Commercial & industrial use cogeneration



Latent-heat-recovery-type water heater

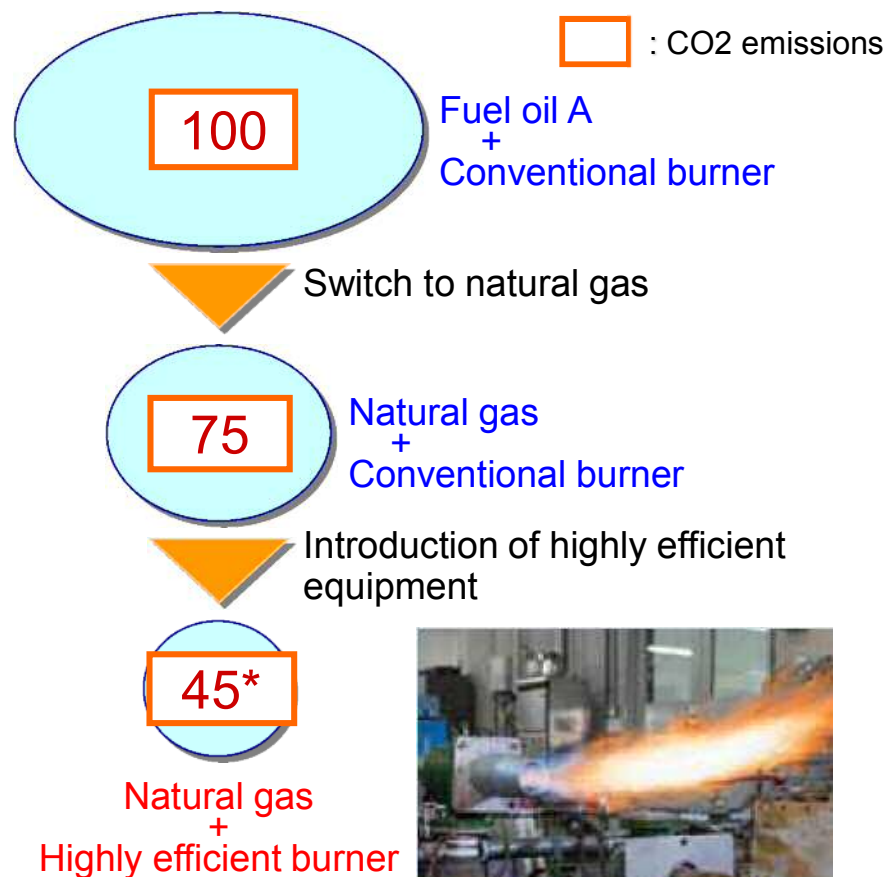


Residential fuel cells



Source: Osaka Gas Co., Ltd.

Fuel Shift to Natural Gas for Industrial-use Thermal Demand

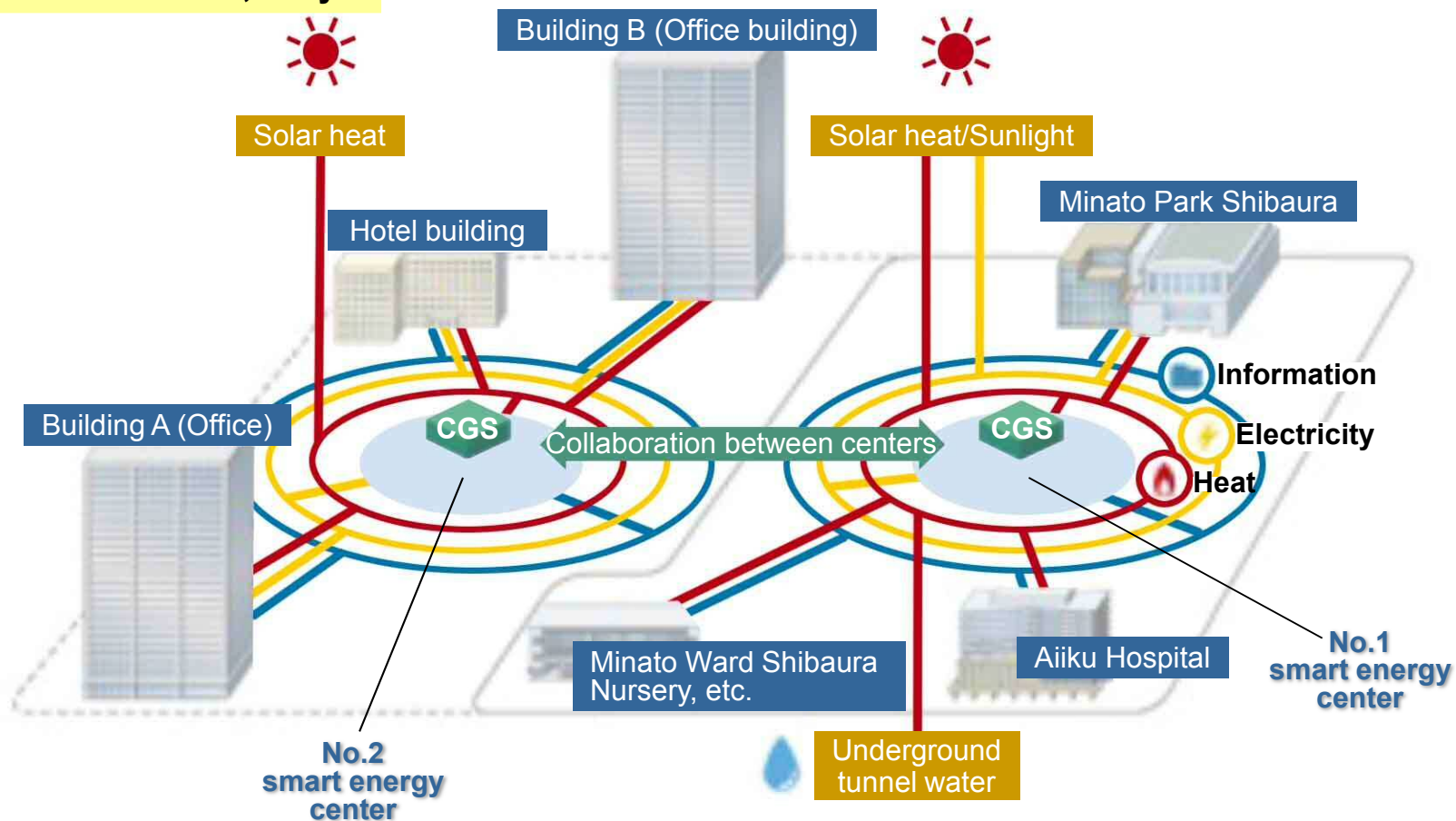


*Regenerative burner in use

Constructing a smart energy network focusing on natural gas and distributed energy systems toward a low carbon society.

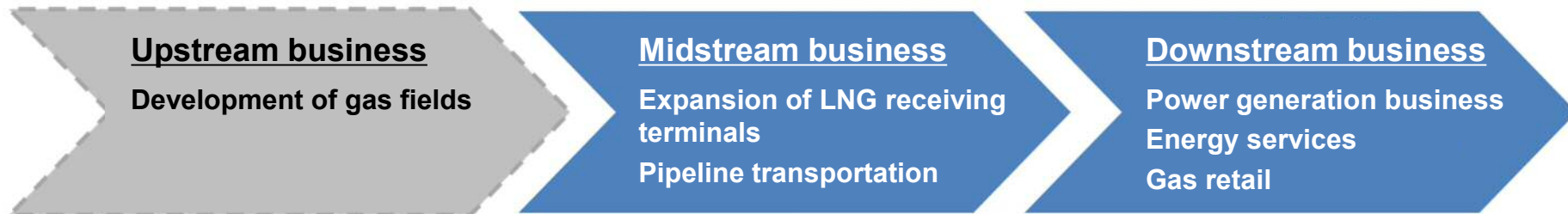
Smart Energy Network Concept

Case of Tamachi, Tokyo



Contribution to Asia

Japan's city gas operators will contribute to realizing a 'green future' in Asia by utilizing their comprehensive know-how encompassing businesses from upstream to downstream.



Source: Tokyo Gas Co., Ltd., Osaka Gas Co., Ltd.

Thank you for your attention.