

A photograph of Kumamoto Castle, a large multi-tiered Japanese castle with dark roofs and white walls, partially obscured by the branches of cherry blossom trees in full bloom. The sky is a clear, bright blue.

Changes in Energy Environment and Our Plan

Kumamoto
Castle

Jun Matsuzawa, Chairman,
Japan LP Gas Association
International LP Gas Seminar 2017
March 7, 2017

About the Japan LP Gas Association

Members: Primary Distributors of LP gas in Japan, Importers, and Producers

Chairman: Jun Matsuzawa (Representative Director and President, ENEOS GLOBE Corporation)

Establishment: 1963

Roles:

LP Gas Demand Development, Environmental Improvements, Stable Domestic Supplies, Prevention of LP Gas-related Accidents, Publicity Enhancement, Statistics, Policy Recommendations, etc.

Member Companies (11):

Astomos Energy Corporation

ENEOS GLOBE Corporation

Gyxis Corporation

Itochu Corporation

Iwatani Corporation

Japan Gas Energy Corporation

JAPEX-SKS Corporation

Kygnus LP-Gas Co., Ltd.

National Federation of Agricultural Co-operative Association

Taiyo Oil Co., Ltd.

Tokyo Gas Co., Ltd.

Contents

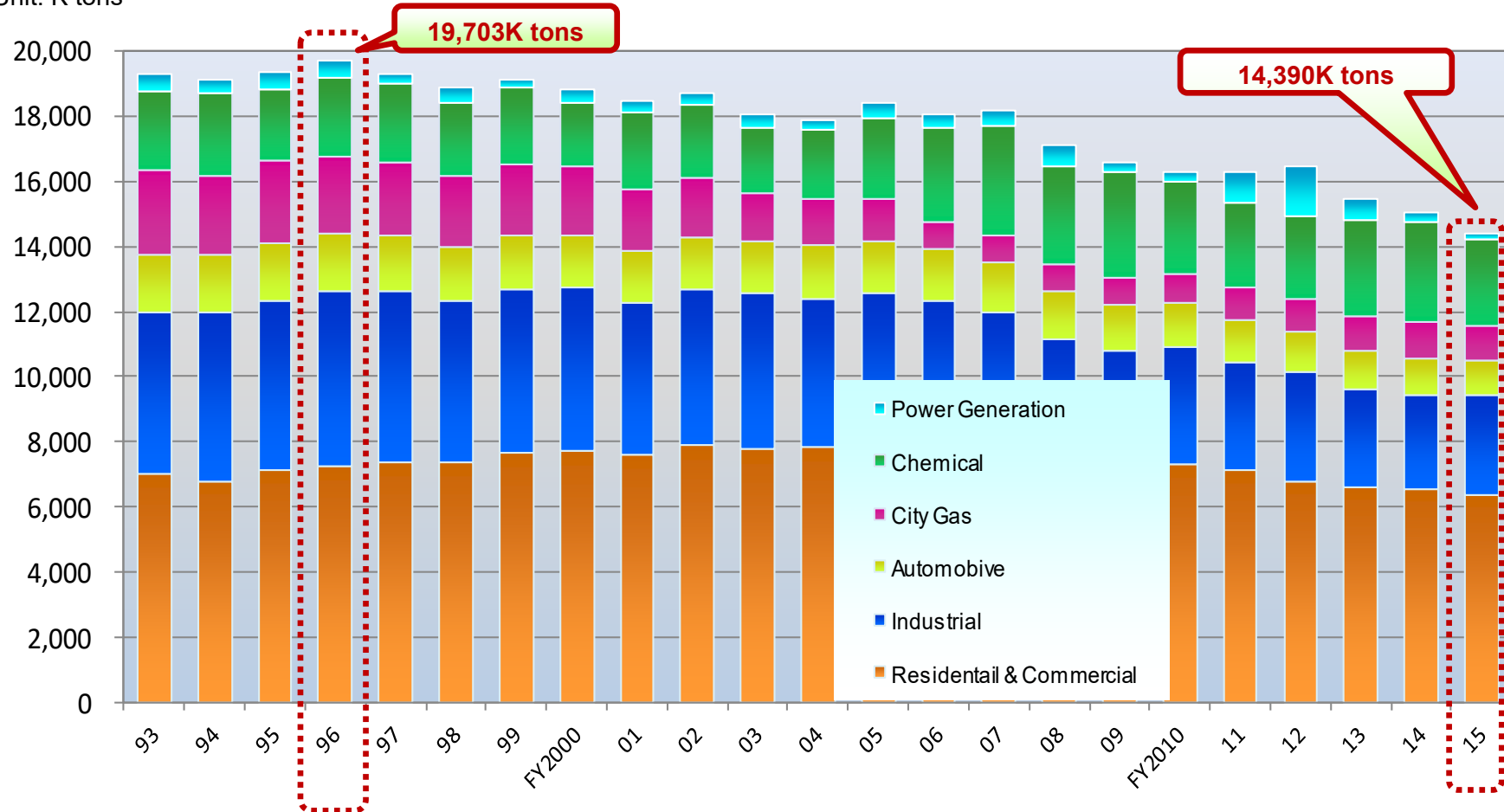
- 1. Global and National Energy Supply & Demand**
- 2. Environment Surrounding the LP Gas Industry in Japan**
- 3. Future Initiatives of the LP Gas Industry**

Chapter 1

Global and National Energy Supply & Demand

1-1 LP Gas Demand in Japan (FY1993-2015)

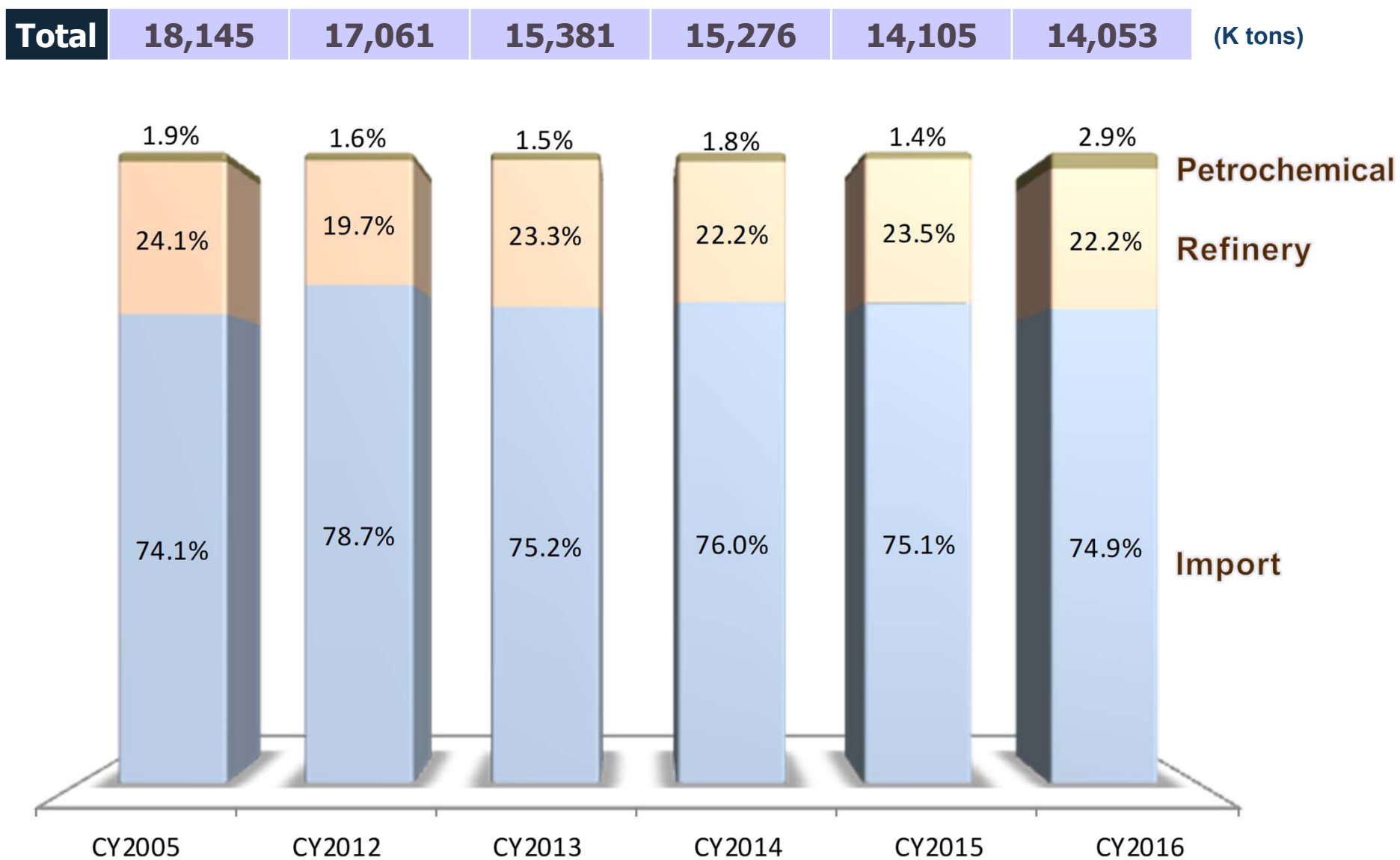
Unit: K tons



Source: Japan LP Gas Association

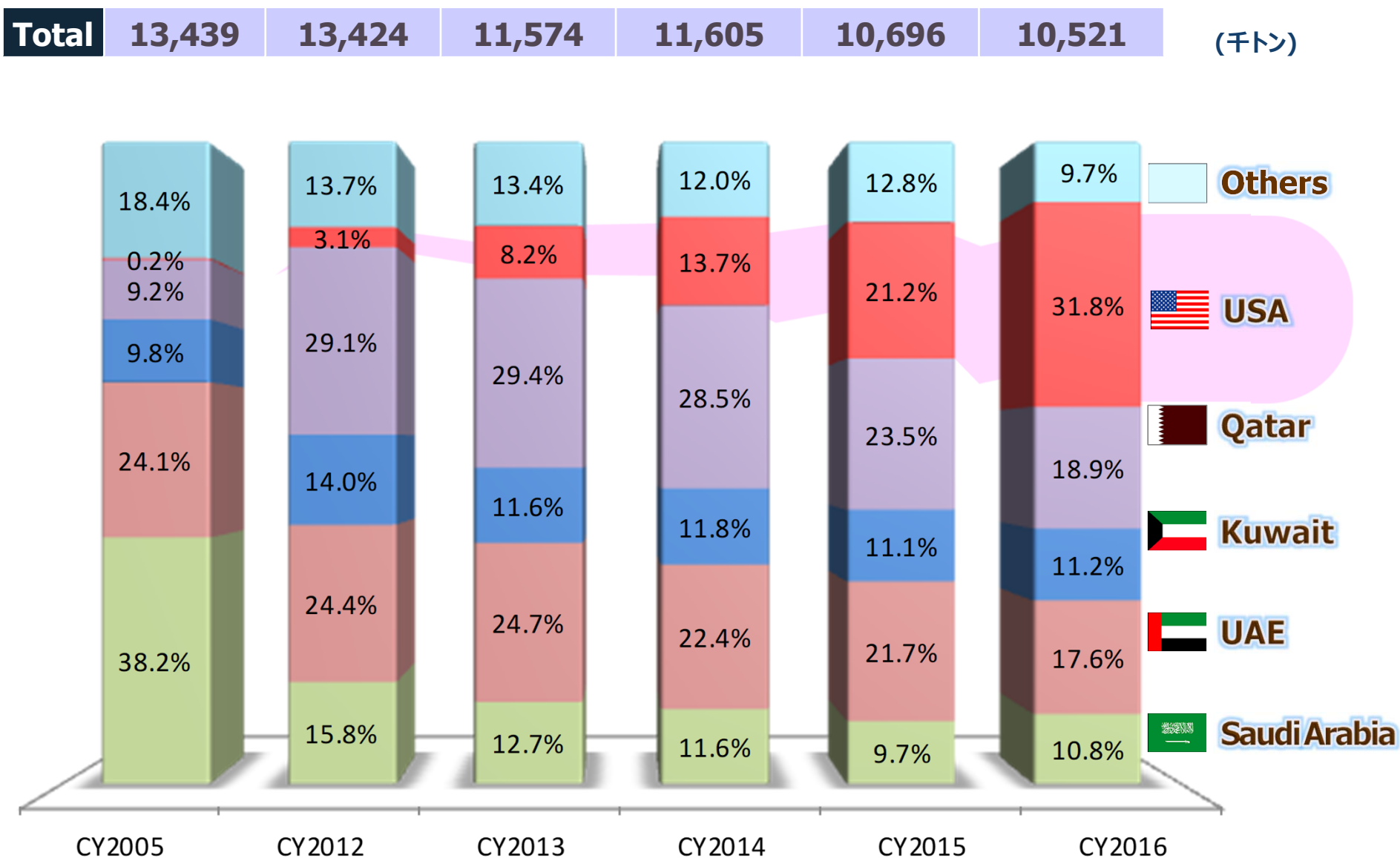
- The demand for LP Gas peaked in FY1996 and has been on a **gradual downward trend** since then.
A continuous decline was observed in FY2015 as well.

1-2 LP Gas Supply Patterns in Japan



Source: Japan LP Gas Association "Monthly Demand-Supply Report"

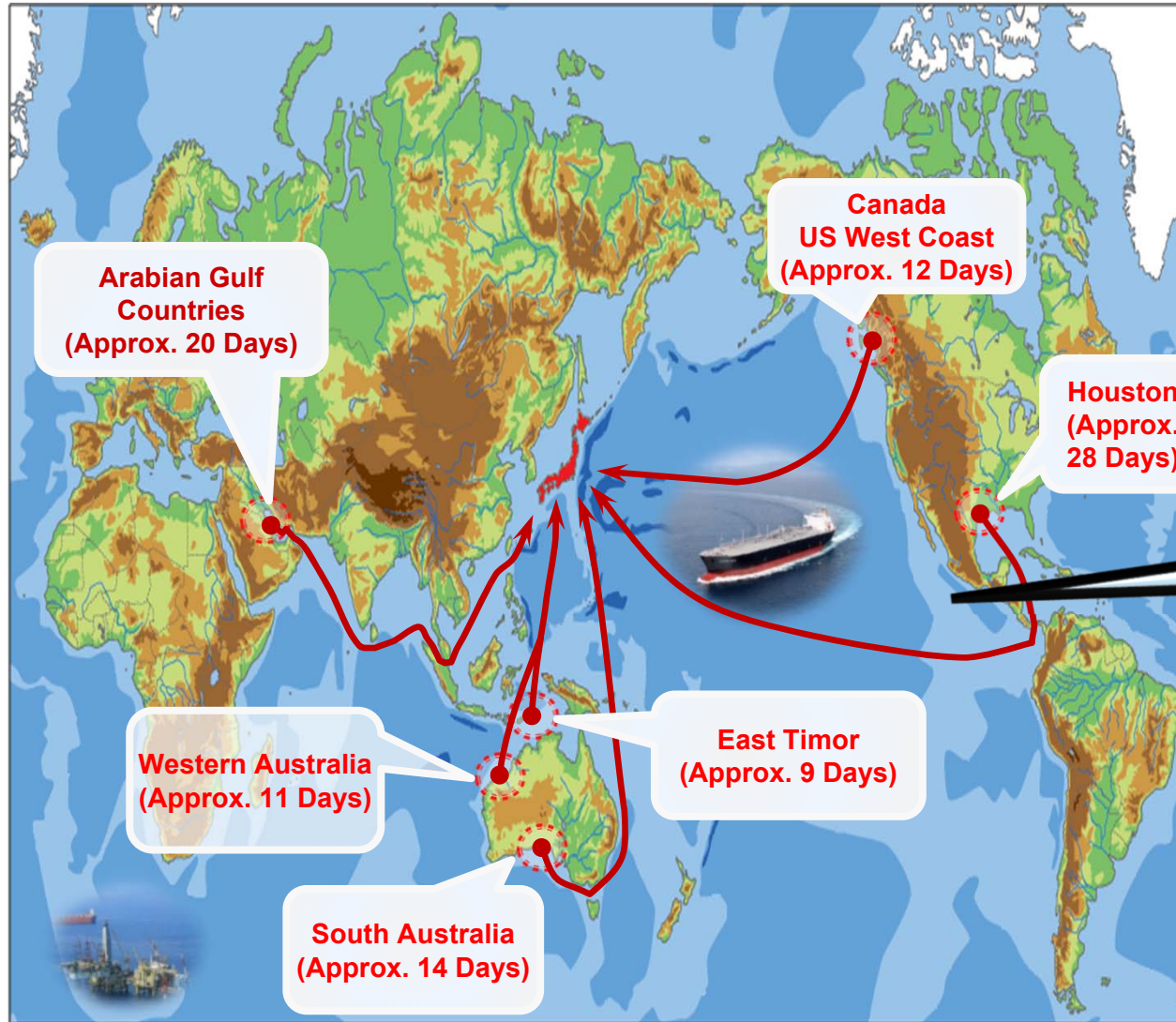
1-3 LP Gas import volumes of Japan by Country (Propane + Butane Total)



Source: Japan LP Gas Association "Monthly Demand-Supply Report"

1-4 Enhancement of Supply Sources Diversification and Freight Cost

- The start of commercial operations through the expanded Panama Canal and exploration for new sources of supply in the Pacific-rim regions

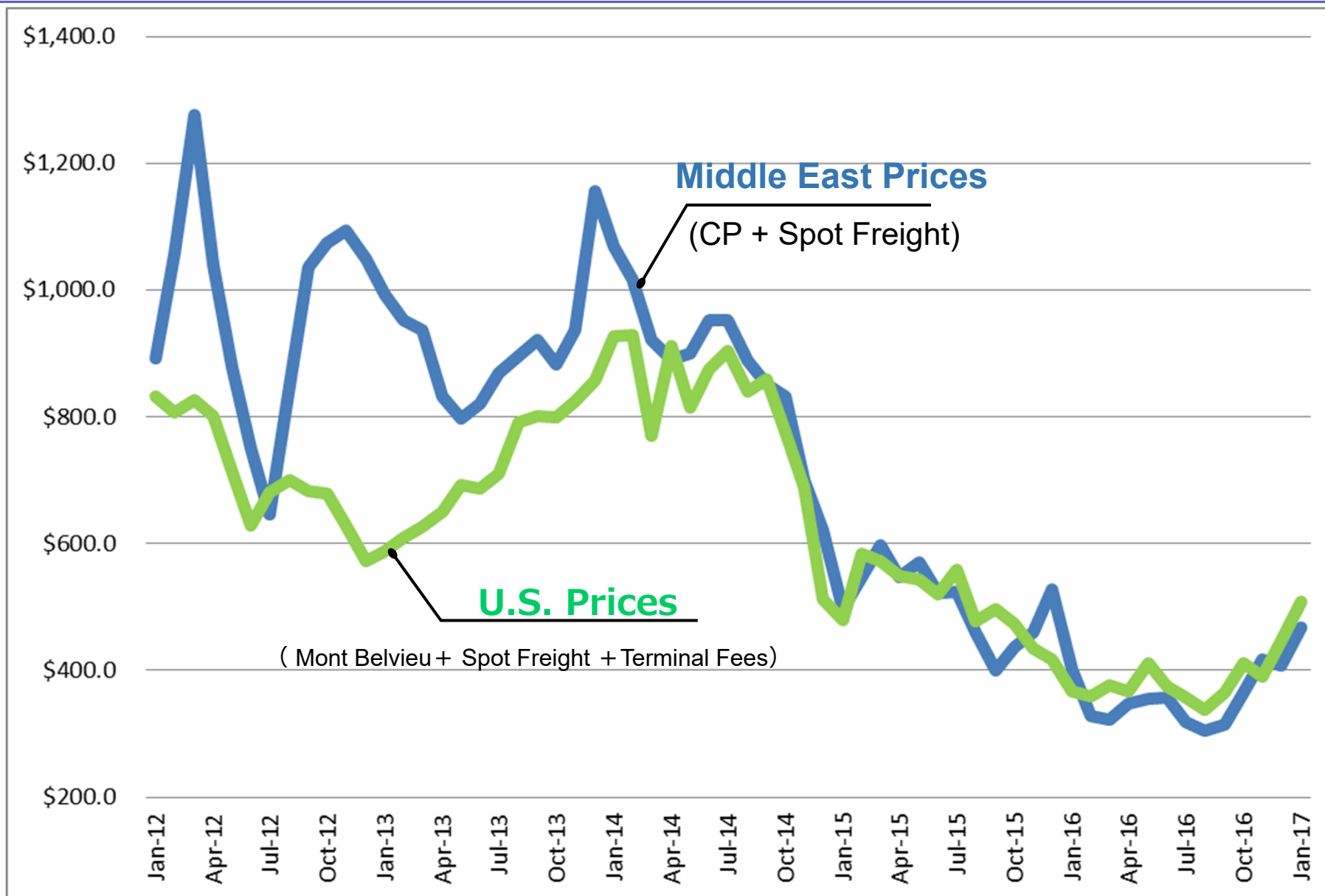


Panama Canal expansion reduces the travel time (between Houston and Japan) from 45 to 28 days

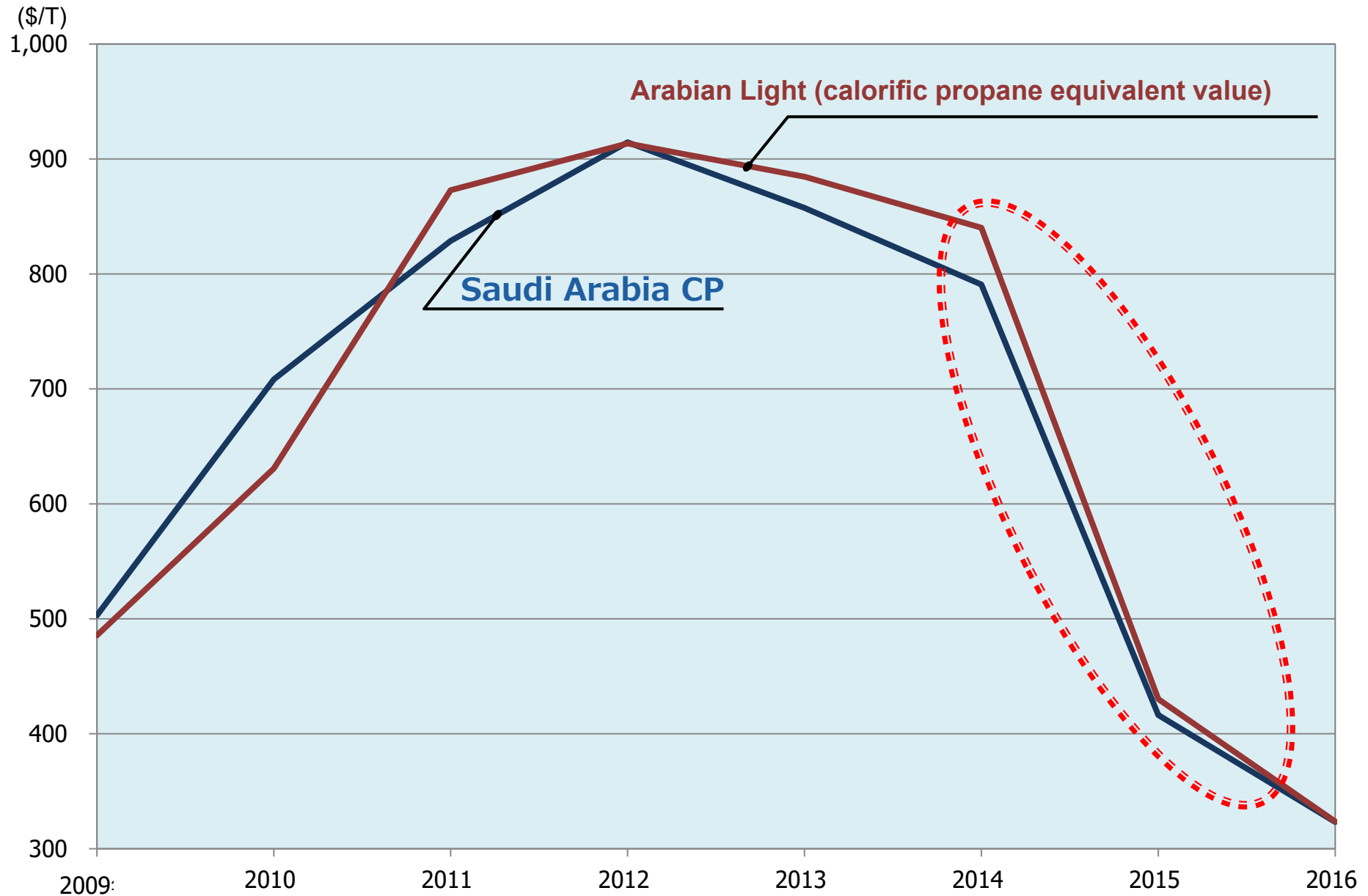


Pictures (above and bottom) show a Very Large Gas Carrier (VLGC) destined for Japan passing through the new Panama Canal on June 27, 2016.

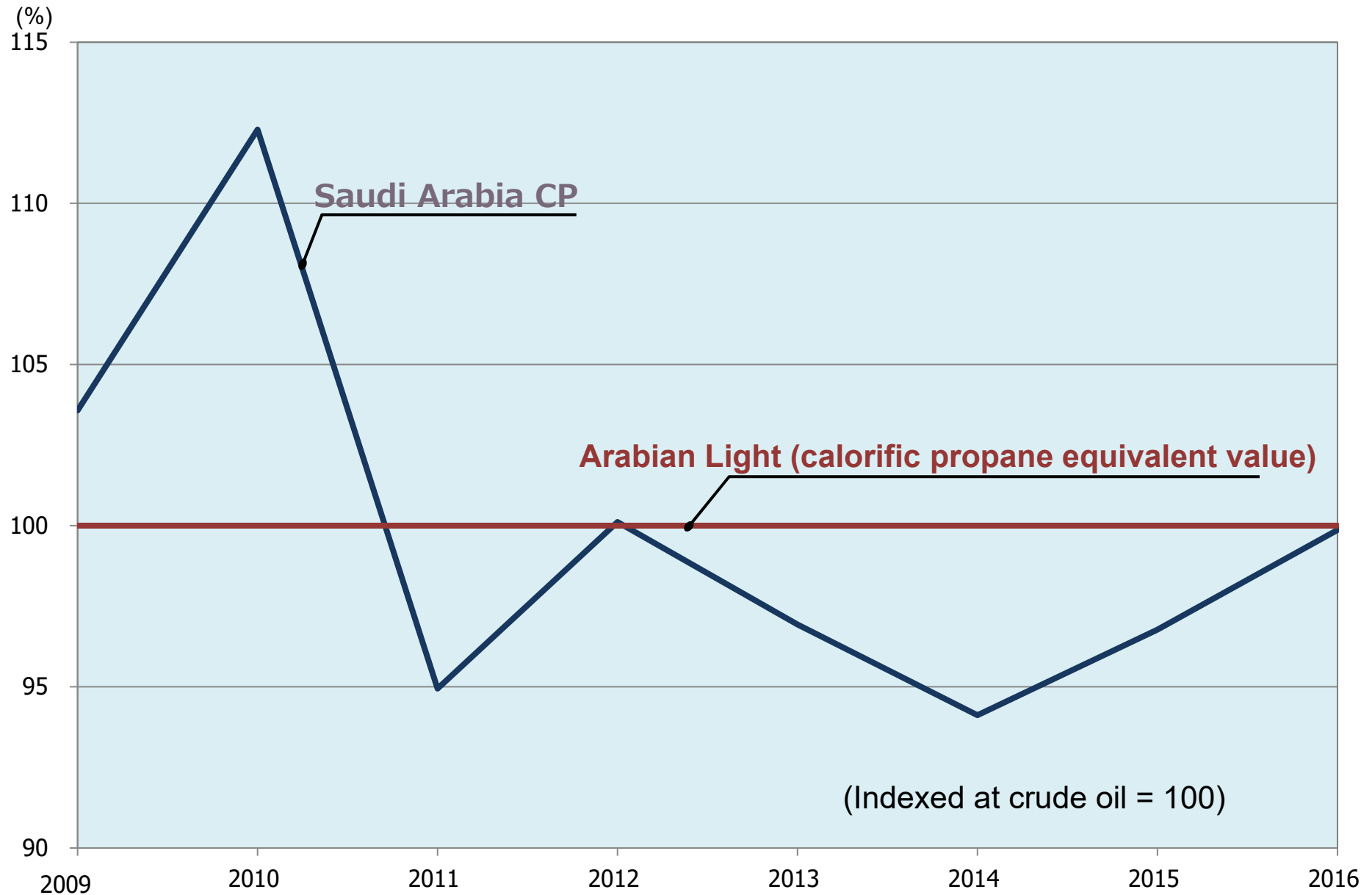
1-5 Price Trends of LP Gas Produced in the Middle East vs. U.S. (arrival bases in Japan)



1-6 Price Trends of Crude Oil and Propane (on annual average value)

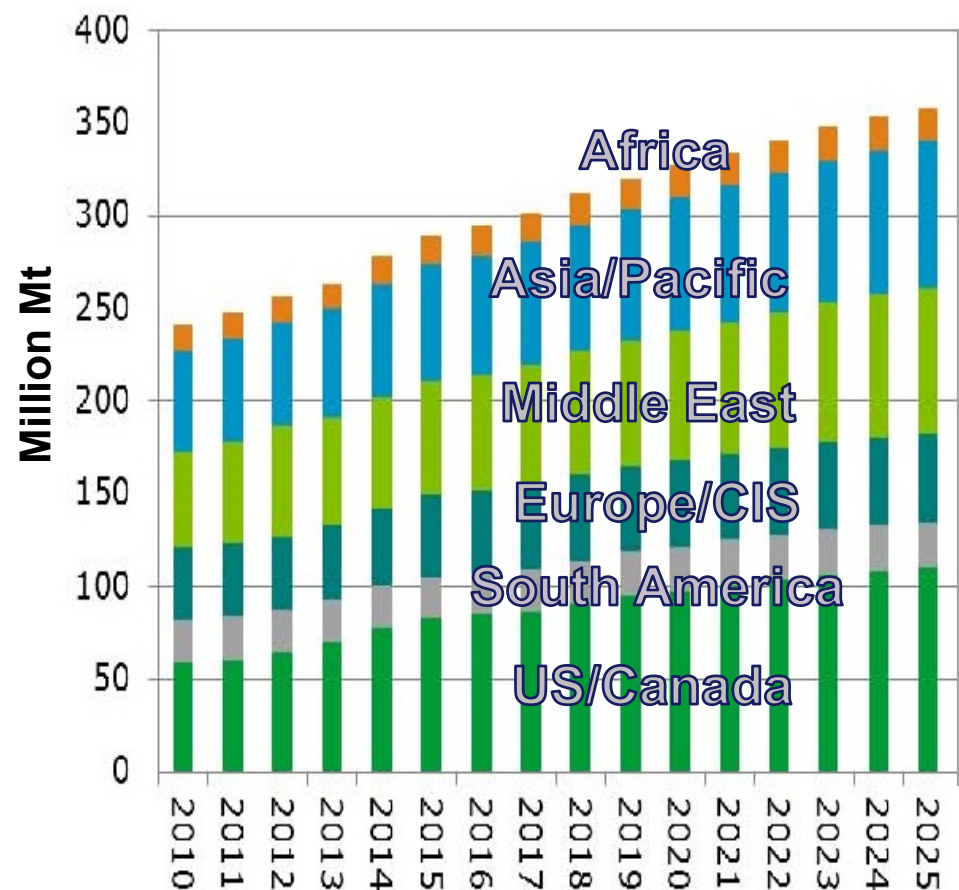


1-7 Price Trends of Crude Oil and Propane (on annual average value)

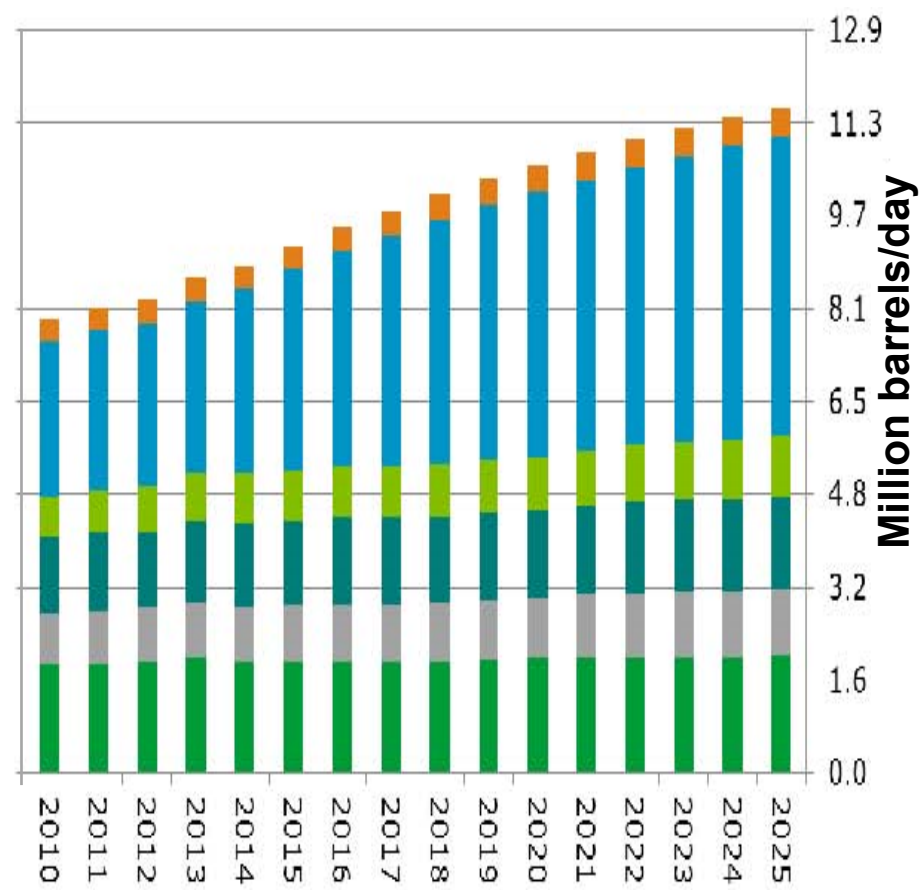


1-8 Trends and Projections of Global LP Gas Production/Demand

Global LPG Production



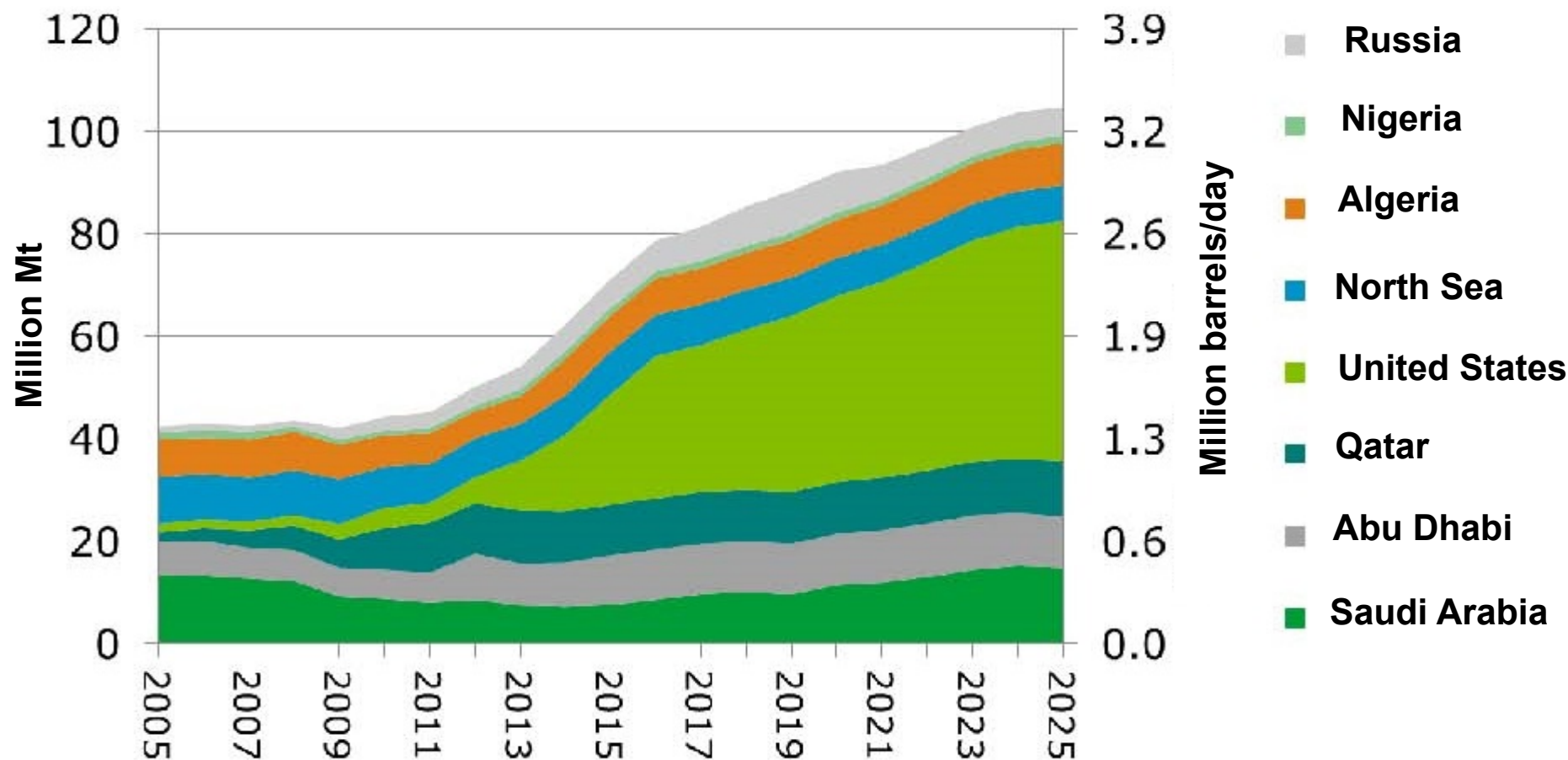
Global LPG Demand



Source: IHS

1-9 Trends and Projections of LP Gas Export Volumes of Major Exporting Countries

Global LPG Export Volumes of Major Exporting Countries

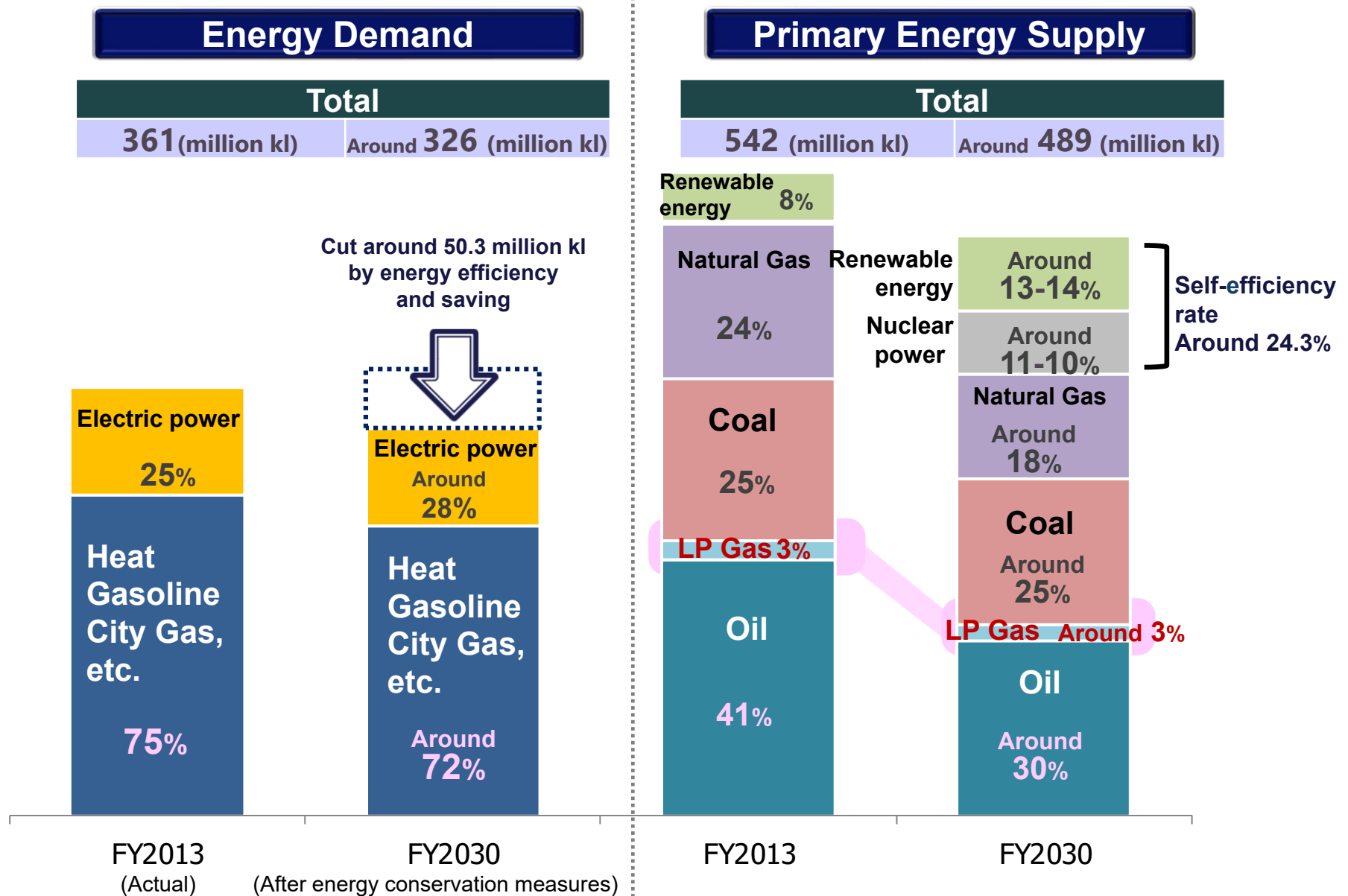


Source: IHS

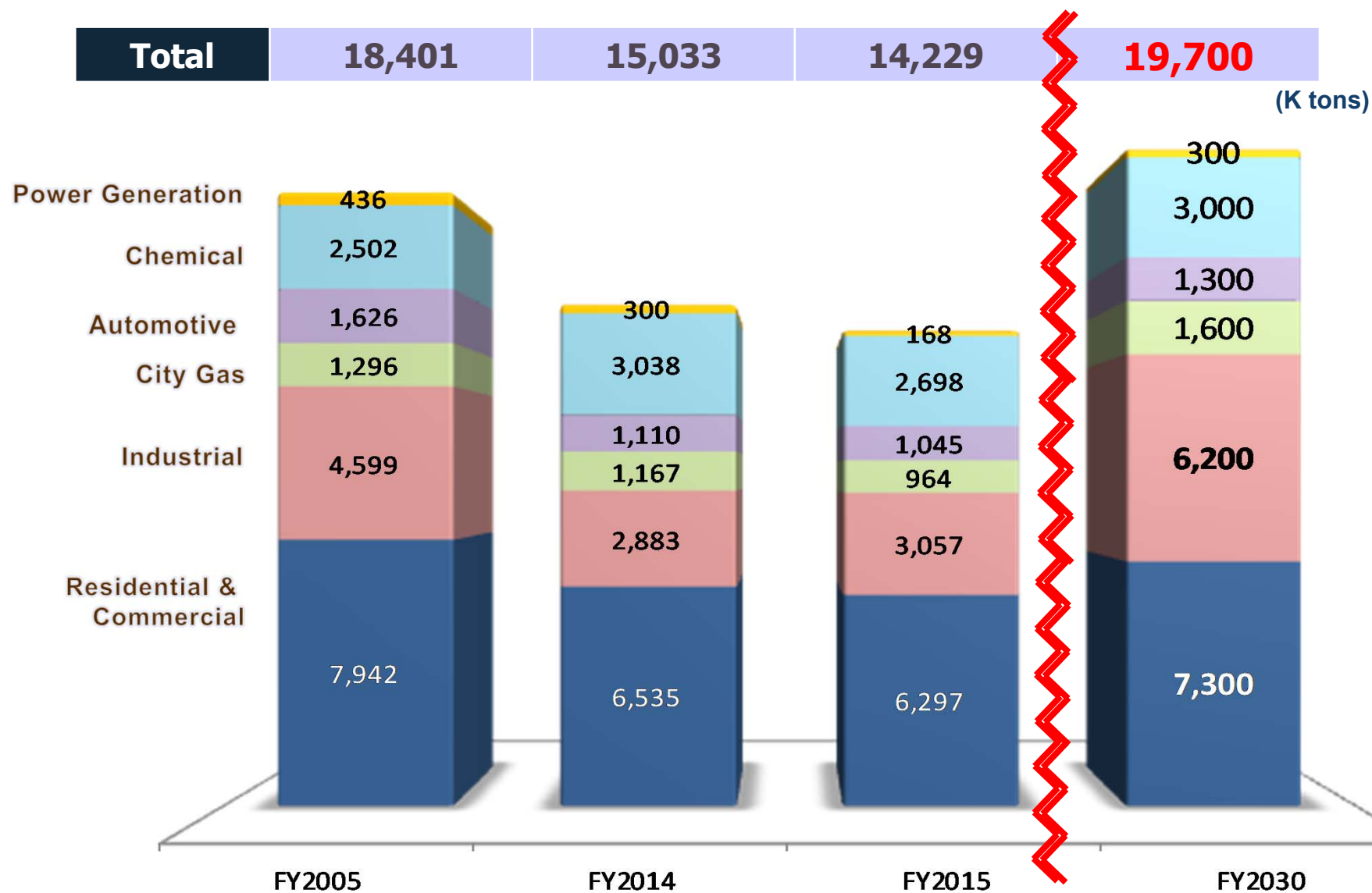
Chapter 2

Environment Surrounding the LP Gas Industry in Japan

2-1 “Long-term Energy Supply and Demand Outlook” prepared by METI



2-2 Trend in Domestic LP Gas Demand and the FY2030 Target set by the JLPGA's "Mid- to Long-term Outlook"



Source:[FY2005,2014-2015] METI, "Petroleum Products Demand Outlook Committee,
Liquefied Petroleum Gas WG
[FY2030] Japan LP Gas Association "Mid- to Long-term Outlook"

2-3 Initiatives for Creating LP Gas Demand by Sector

Residential

Demand: 5,100K tons
CO2 Reduction: 6,370K tons

Energy-efficient hot water heater

Target: 16,000K units



Home-use fuel cell system

Target: 1,500K units



FRP cylinder

Promotion of use

Commercial

Demand: 2,200K tons

GHP

Target: 1,200K kW equivalent



Co-generation systems, etc.

Target: 1,600K kW equivalent



Industrial

Demand: 6,200K tons
CO2 Reduction: 2,630K tons

Fuel conversion

Target: 1,580K tons



Transportation

Demand: 1,300K tons
CO2 Reduction: 1,320K tons

LPG vehicles

Target: 560K cars



JPN-TAXI



Dual-fuel trucks

Source: Japan LP Gas Association "Mid- to Long-Term Outlook" second revision, November 2015

LP Gas Total Demand: 19,700K tons
CO₂ Reduction: 10,700K tons

2-4 Promotions of Bulk Storage Tanks Instrations

A system that facilitates the efficient supply of LP Gas to public facilities and housing complex areas

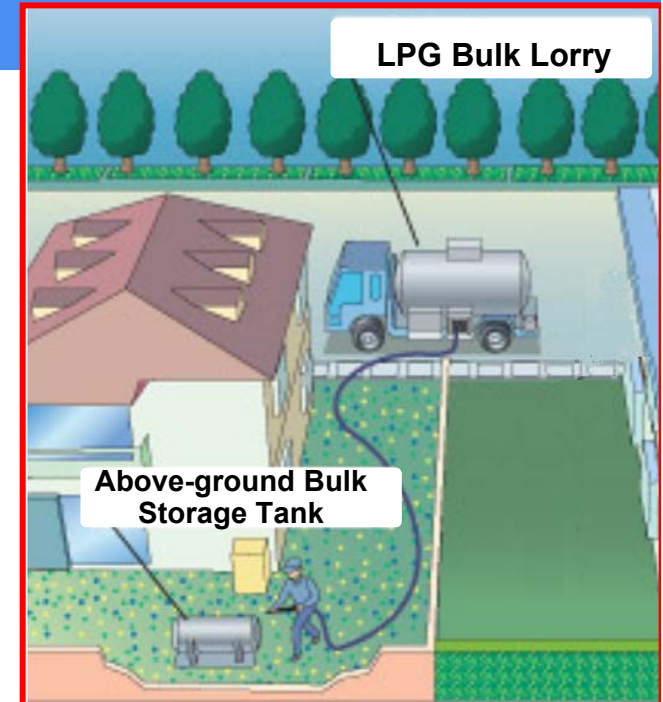
Horizontal Bulk Storage Tank



Vertical Bulk Storage Tank



* Both tanks have a storage capability of 990 kg



■ Inclusion in the Standard Specification for Public Works Construction

Since March of last year, the installation of bulk storage tanks has become one of the standard specifications for public works construction defined by the MLIT, which is expected to lead to further usage.

■ Promotion of regular use of LP Gas in public facilities and areas covered by city gas networks so that they can serve as a “last resort” in case of emergency

2-5 New Possibility of Domestic LP Gas-fueled Vehicles

■ LP Gas-monofueled Hybrid Vehicles

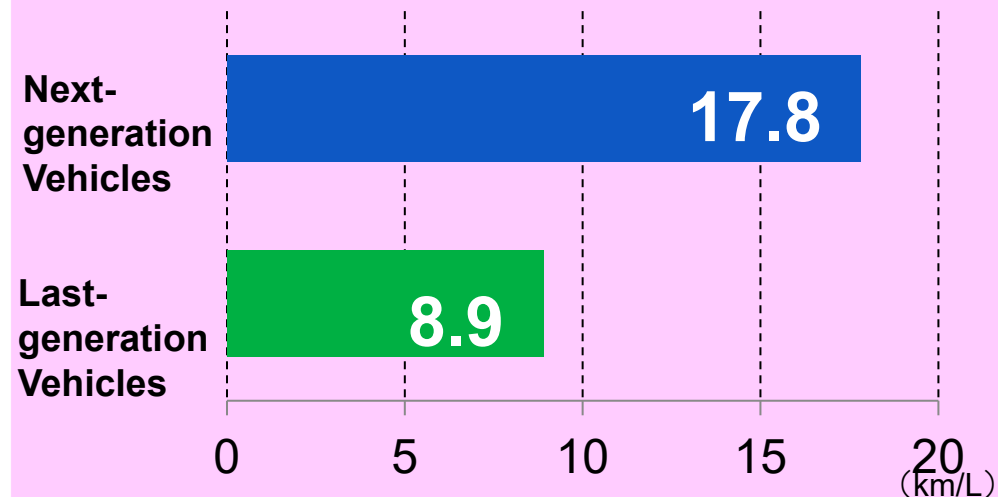
The Emergence of Next-generation Taxi



JAPAN TAXI (TOYOTA)

Coming in 2017

■ Comparison of Fuel Economy (km/l)



■ Special Taxation Measures

	Relevant tax	Overview of Measures
Eco-car Tax Break	Automobile weight tax	A full exemption from the tax imposed at the time of the initial inspection of newly acquired automobiles
	Automobile acquisition tax	A full exemption from the tax on the acquisition of automobiles
Automobile Green Tax Scheme	Automobile tax	Approx. 50% reduction in the annual automobile tax

2-6 LP Gas Industry's Responses to the "Kumamoto Earthquake"

■ April 14 (Thu) 21:26 JST, M 6.5 Earthquake with a seismic intensity of 7 occurred in Kumamoto





Emergent safety check of the areas affected by the earthquake, including the LP Gas supply facilities in accordance with the agreement between JLPGA's member companies (Mutual Assistance Agreement)

■ April 16 (Sat) 1:25 JST, M7.3 Earthquake with a seismic intensity of upper 6 occurred in Kumamoto

9:29 JST The Minister of METI declared a "Recommendation for implementation of cooperative action in LPG supply during a disaster"

→ Participant companies across Chugoku, Shikoku and Kyushu Districts

<Industry's Responses>

-  Deployment of generator-mounted vehicle owned by the JLPGA's member companies
-  Disaster relief activities by domestic LP Gas dealers of JLPGA's member companies
-  Dispatch of the "Team LPG," organized by members of the Kumamoto LPG Association to Mashiki-Municipality
-  Safety check was completed on April 20 in Oita Prefecture and on April 25 in Kumamoto Prefecture

2-7 LP Gas Industry's Responses to the "Kumamoto Earthquake"

- Dispatch of generator-mounted vehicle owned by JLPGA's member companies



*Source: Astomos Energy

- Disaster relief activities by LP Gas dealers



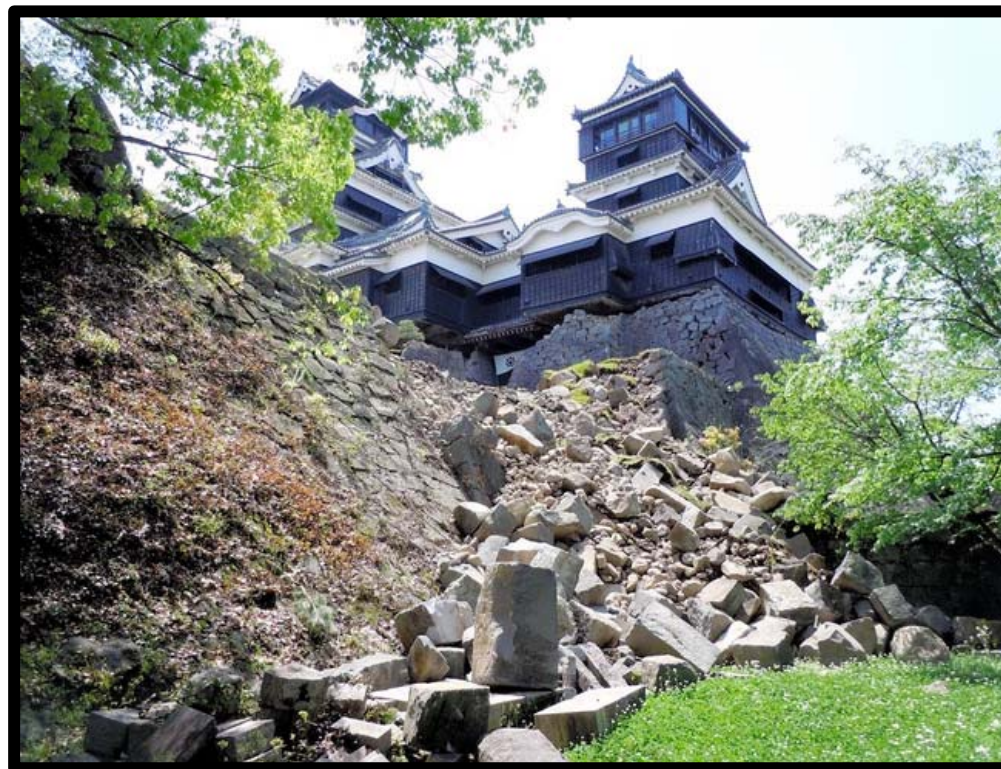
*Source: Iwatani Corporation "MaruiGas Disaster Rescue Team"

- Kumamoto LPG Association "Team LPG"



*Source: Sekiyu-Kagaku-Shinbunsha "Propane-Butane News"

(Reference) Kumamoto Castle after the earthquake



Kumamoto
Castle

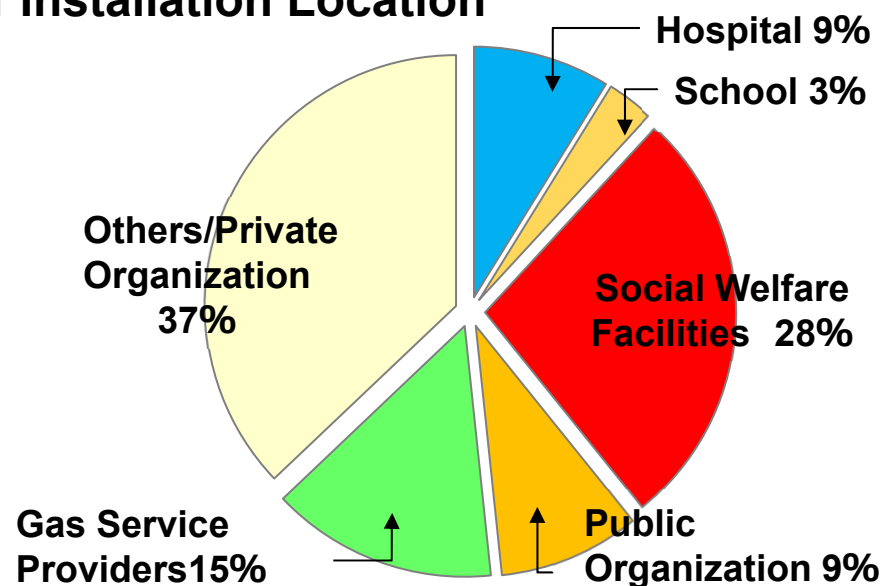


2-8 Promotion of the Installation of a Bulk Supply System for Emergency & Disaster

■ Encouragement of user-side stockpiles by making use of the Government's Subsidy Programs



■ Installation Location



■ Subsidy Delivered (FY2012-2015)

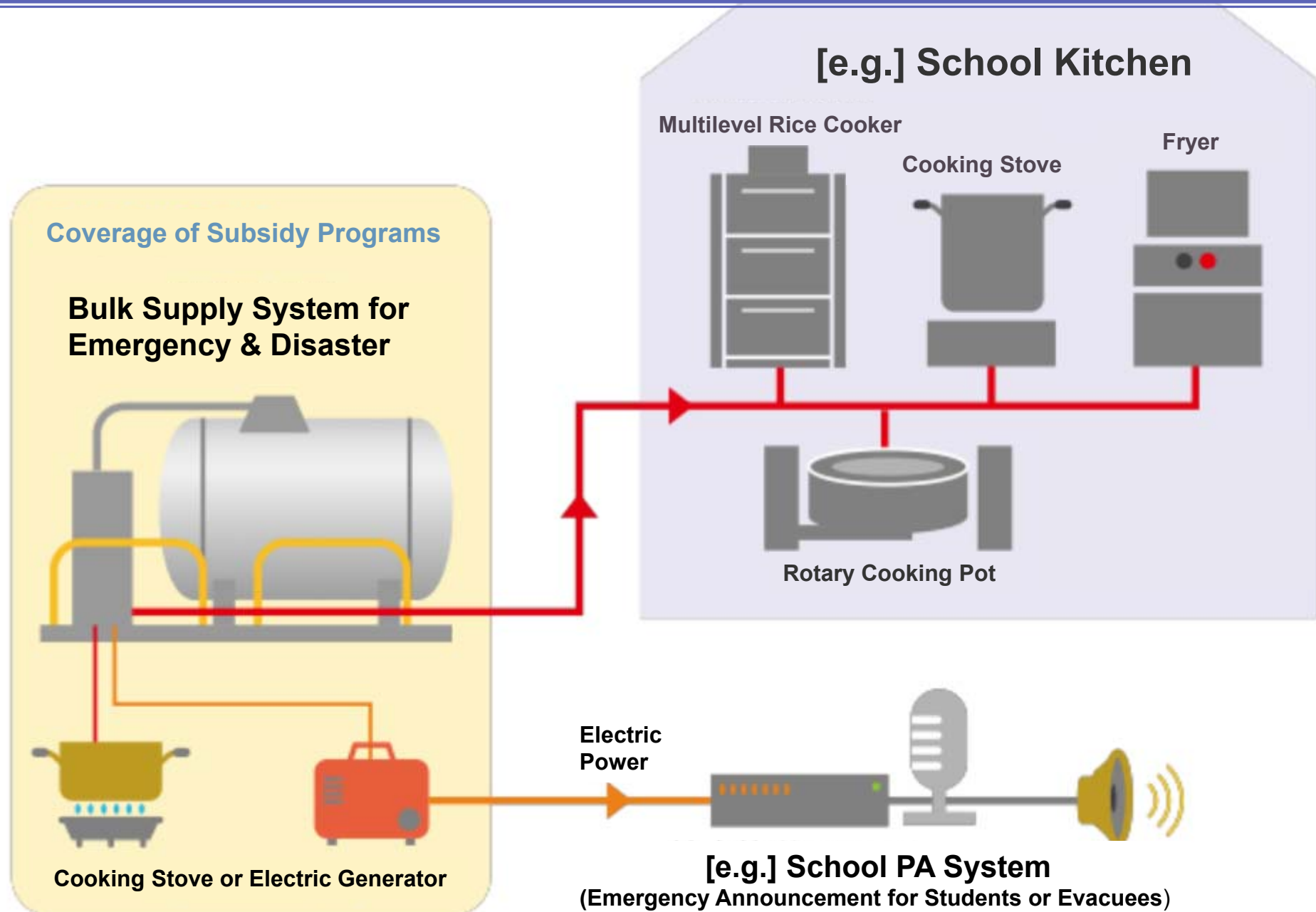
No. of Installations	Approx. 300 units
Total Subsidy	Approx. 1.2 billion yen

■ Subsidy Program for FY2017

Location	Hospital, Nursing home, Public/Temporary evacuation shelter, etc.
Budget	600 million yen
Subsidy Rate	1. Private sector: 2/3 2. Public sector (e.g. Local government): 1/2

Source: Conference of LP Gas Associated Organizations "Subsidy projects" 2012-2015

2-9 Promotion of the Installation of a Bulk Supply System in Preparation for Disaster



2-10 Supply-side Resiliency Measures

Enhancement of the Bases' Shipping Function

- Deploying generator-mounted vehicles at **four bases** to maintain their shipping function even in case of loss of grid power due to disasters
- Installing power receiving systems at **seven bases** to receive the electricity sent by generator-mounted vehicles
- Deploying and installing satellite phones in each base as well as on each generator-mounted vehicle

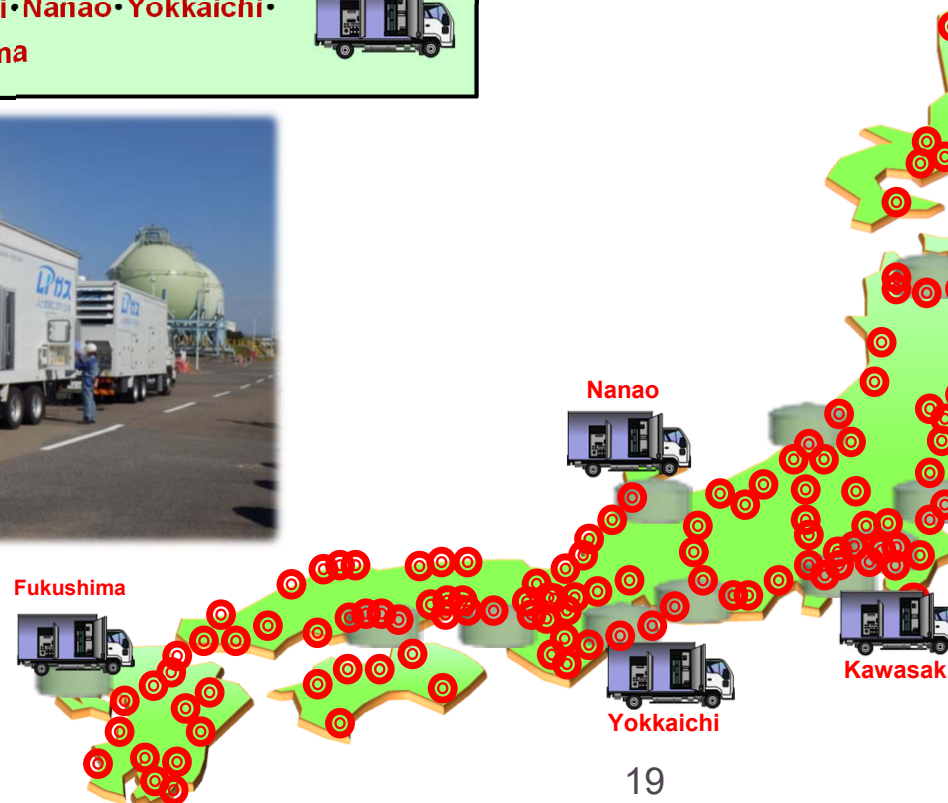
Generator-mounted vehicle
Kawasaki•**Nanao**•**Yokkaichi**•
Fukushima



Development of Core Filling Stations

- Designating **344** filling stations across the nation as “Core Filling Stations” to enhance their functions
 - ✎ Installing LP Gas-fueled power generators
 - ✎ Deploying LP Gas dispensers for vehicles
 - ✎ Deploying LP Gas vehicles for delivering LP Gas cylinders
 - ✎ Installing satellite communications facilities

Core Filling Stations 
344 stations across the nation

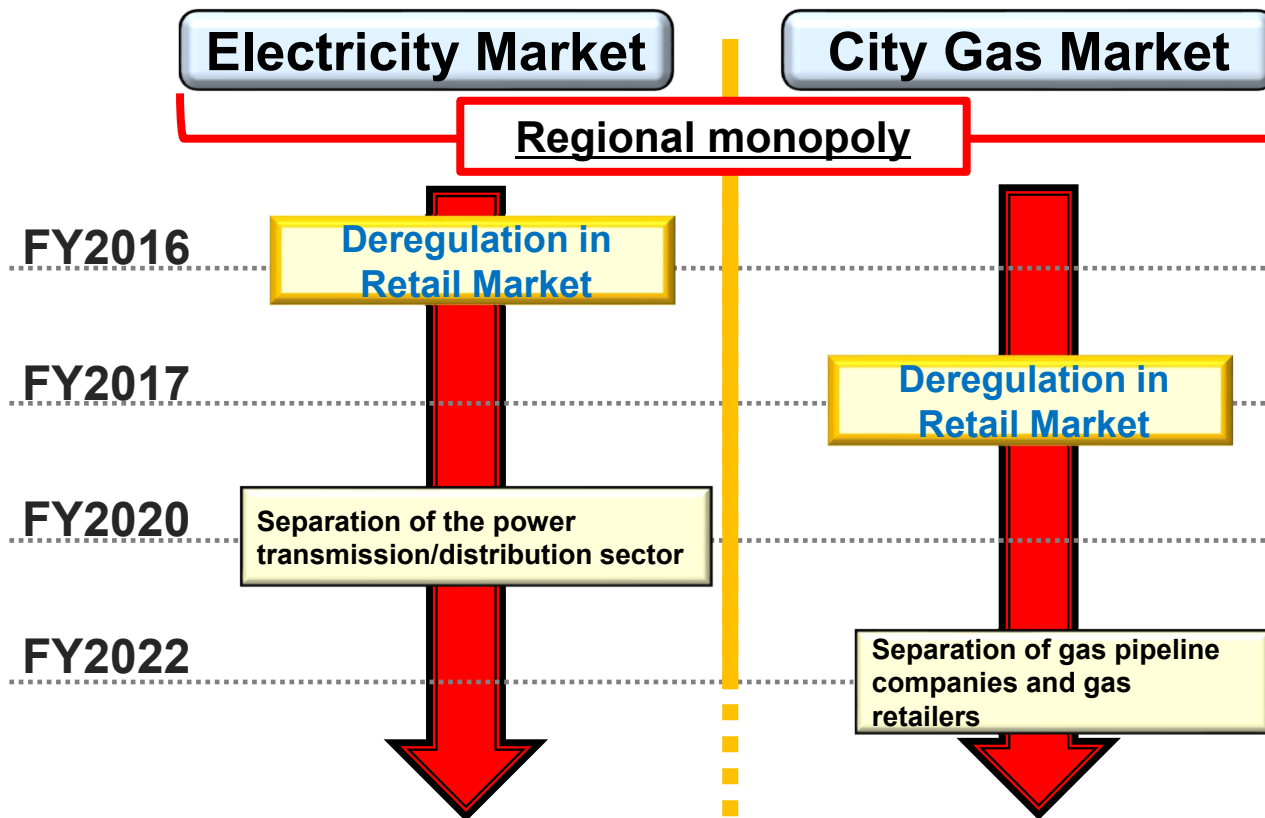


Chapter 3

Future Initiatives of the LP Gas Industry

Energy Deregulation in Japan

Creation of a Comprehensive Energy Market



Current Demand (no. of households)

Total Households	53 million*
All-electrified	6 million
City Gas	25 million
LP Gas	24 million

*Includes households that use multiple energies.
Source: Japan LP Gas Association "LP Gas Statistics of Japan" 2016; Fuji Keizai "Energy market forecast 2016 by type of energy, service, relevant device, area"

Non-energy Industries

- IT Industry
- Automobile Industry, etc.



New Entrants

<<< **Removal of barriers between markets** >>>

**Full-scale inter-energy competition
further intensified by new entrants from
non-energy industries**

Future Initiatives of the LP Gas Industry

- In preparation for the anticipated growing inter-energy competition, we, JLPGA, will focus on the improvement of distribution environments through “securing further transparency of fee structure” and “optimized distribution system”, while making efforts to strengthen competitiveness of LPGas, with the cooperation of relevant parties such as the Conference of LP Gas Associated Organizations.
- JLPGA will continue efforts to “further generate demands” by sectors in order to achieve the 2030 target.
- As the disaster-resistant energy, we will continue efforts to further “enhance disaster response capabilities.”
- We will explore “more diversified supply sources” to maintain and secure a stable supply as well as price competitiveness.
- Also leveraging many years of experience and know-how in ensuring security and safety supply of LPGas, we will further seek opportunities to “encourage relationship-building with other countries” ,including those in Southeast Asia.



LPガス
人と地球にスマイルを

ご清聴ありがとうございました。

Thank you for your kind attention.

日本LPガス協会
Japan LP Gas Association

<http://www.j-lpgas.gr.jp>