Strictly Confidential

Nobuyuki Tomita

✓ Professional Experience

Osaka Gas (2004 – Present)

Over 20 years of expertise in engineering and business development.

- **Project Management & O&M for Natural Gas Pipelines: 10 years**
- **Strategic Planning for Natural Gas Transmission Pipelines: 5 years**
- **Business Development for Overseas Markets from the viewpoint of Technical Due Diligence: 3 years**
- **Osaka Gas India: 2.5 years (since 2022)**

✓ Education

Graduated from TOKUYAMA KOSEN

(National Institute of Technology, Tokuyama College) in 2004

Strictly Confidential

マスタ タイトルの書式設定

（as of March 31, 2024）

1905

We started our business as a gas distributor in the Kansai region.

- Daigas Group's corporate motto is **"Service First"**
- We prioritize **"TRUST"** above all

Consolidated number of employees

Approx. 21k

Group Businesses

- Domestic/International Energy
- Life & Business Solutions
  - Urban Development
  - Information Solutions
  - Materials Solutions

Number of customers

gas supply contracts

Approx. 5 M

low-voltage electricity supply contracts

Approx. 1.8 M

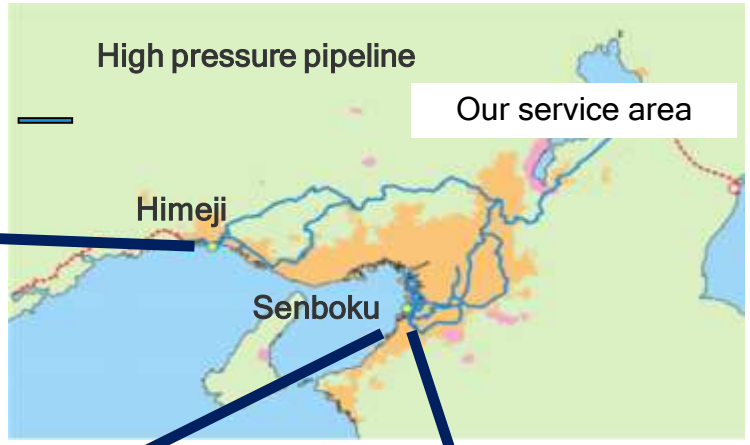
Osaka Gas Co., Ltd. All Rights Reserved

Strictly Confidential

LNG terminals owned by Daigas Group

Himeji LNG Terminal (online 1984)
8 LNG tanks,
Annual vaporization capacity 6.9 million tons

Senboku LNG Terminal 2 (online 1977)
16 LNG tanks
Annual vaporization capacity 10 million tons



Senboku LNG Terminal 1 (online 1972)
1 LNG tank , annal vaporization capacity 1.9 million tons

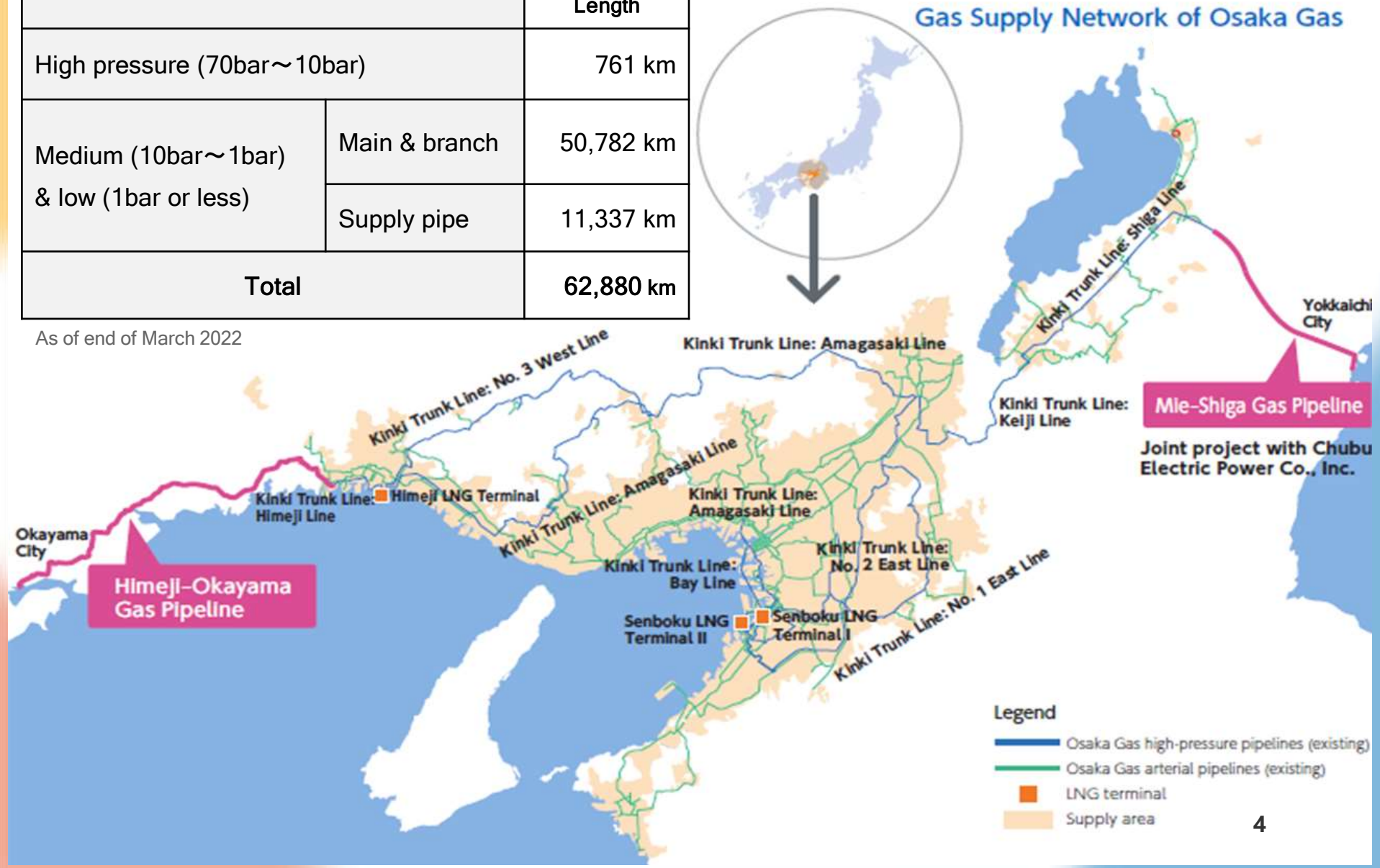
Osaka Gas Co., Ltd. All Rights Reserved

Strictly Confidential

Gas Pipeline Network

		Pipeline Length
High pressure (70bar～10bar)		761 km
Medium (10bar～1bar) & low (1bar or less)	Main & branch	50,782 km
	Supply pipe	11,337 km
Total		**62,880 km**

As of end of March 2022



Strictly Confidential

History of Major Incidents

- 1897 Osaka Gas Co., Ltd. established
- 1970 Gas explosion accident at Tenroku (79 people died, 420 seriously injured)
- 1981 Gas explosion accident in Kyoto (5 seriously injured)
- 1995 Great Hanshin-Awaji (Kobe) Earthquake
- 2011 Great East Japan Earthquake
- 2018 Northern Osaka Earthquake

Gas explosion accident at Tenroku

Strictly Confidential

Great Hanshin-Awaji (Kobe) Earthquake in 1995

Kobe City

Collapsed Highway

Damaged Building

Repairing gas pipe vicinity of damaged water pipe

Strictly Confidential

Helping each other with CGD

JGA (Japanese Gas Association) takes the lead in helping each other.

Restoration response

There is an industry-wide organization in place to provide assistance in the event of a major disaster in which the manufacture and supply of gas are stopped.

No. of residences needing service restoration and no. of restoration personnel

(Note: For the Great Hanshin-Awaji Earthquake, no. of households that experienced a supply interruption)

Great Hanshin-Awaji Earthquake
January 17, 1995
Recovery organization (utilities nationwide)
No. of personnel (at peak):
Approx.9,700
No. of households that experienced a supply interruption:Approx. 857,400

Great East Japan Earthquake
March 11, 2011
Recovery organization (utilities nationwide)
No. of personnel (at peak):
Approx.4,600
No. of households for service restoration:Approx. 402,000

Kumamoto Earthquake
April 16, 2016
Recovery organization (utilities nationwide)
No. of personnel (at peak):
Approx.4,600
No. of households for service restoration:Approx.101,000
Note: On day of earthquake

2018 Osaka Earthquake
June 18, 2018
Recovery organization (utilities nationwide)
No. of personnel (at peak):
Approx.5,100
No. of households for service restoration:Aprox. 112,000

Reference : JGA

Osaka Gas Support Team
(1,300 personnel dispatched from Daigas Group)

"Other CGDs helped Osaka Gas in the Great Hanshin Earthquake (1995).

Now is the time to give back."

Departure Ceremony for those who assisted with the Great East Japan Earthquake in 2011.

Strictly Confidential

Safety Management System in Japan

Japanese City Gas Distributers have voluntarily improved their safety standards.

Negotiate on behalf of the industry

Japan Gas Association ⟷ **METI (Regulatory Board)**

- Take the lead during disasters
- **Support collaboration among CGDs**

- Establish technical standards
- **Minimal government involvement**

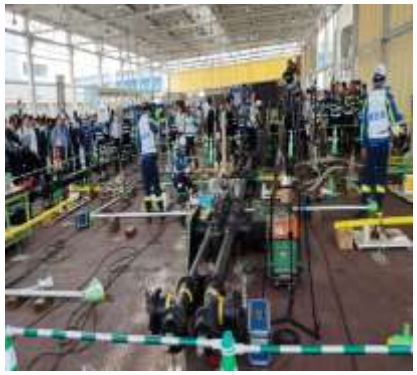
City Gas Distributers: CGDs (About **200 companies**, such as Osaka Gas, Tokyo Gas)

Voluntary initiatives for safety improvement

- **Human resource development**
- Building a safety-oriented mindset

Learn from past accidents

Mind: Pride in safety

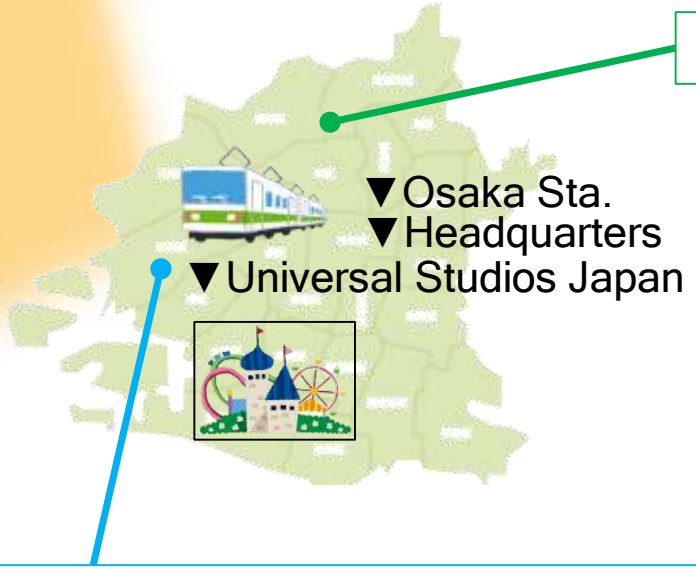


Technical Olympic

Practical training

Strictly Confidential

Osaka Gas Training Center



Kanzakigawa（Premises pipe）

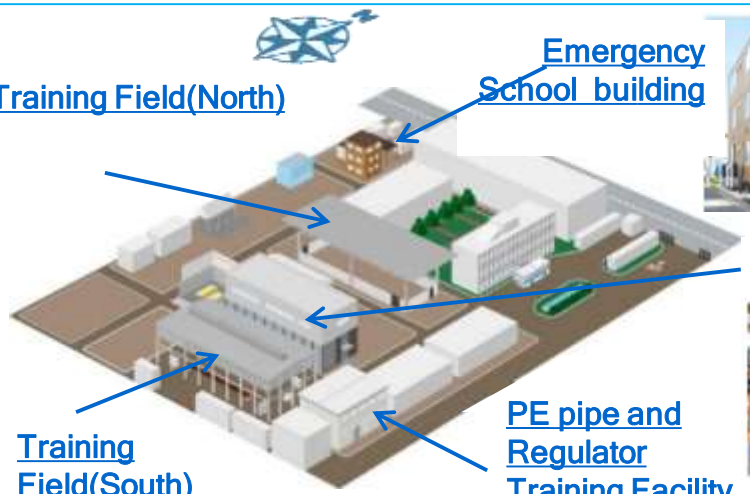
Plumbing booth

Facility security inspection booth

Torishima（Construction, Maintenance, Emergency security）

Training Field(North)

Training Field(South)



Emergency School building

（Emergency repairs training facility）

Training Facility and Office

PE pipe and Regulator Training Facility

（Regulator training room）

（PE pipe training room）

Strictly Confidential

Osaka Gas Training Center (Emergency response)

Training centra

Trainees

Simulated gas leak location

Trainer

Strictly Confidential

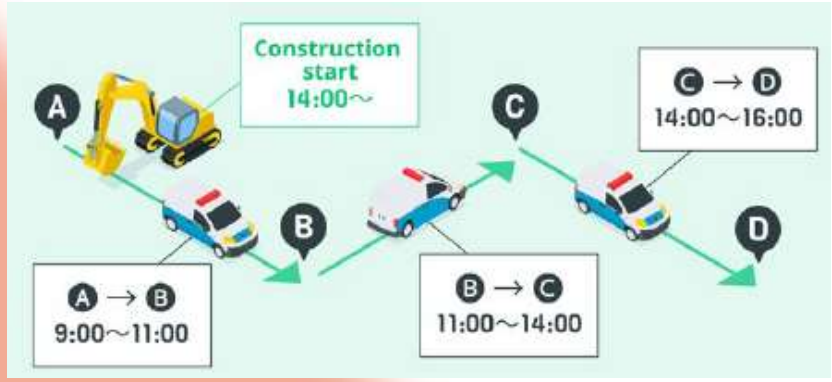
Daily patrol with AI technology

Introduced cameras and AI technology into daily patrols.

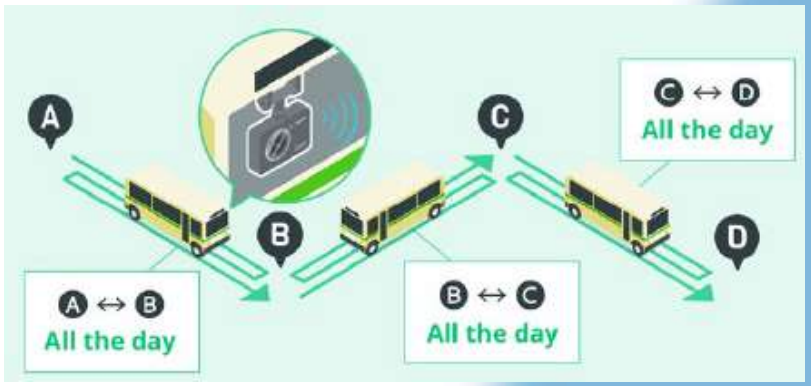
Principle of third party works detection using AI

The AI automatically recognizes traffic cones and construction sign as third party works features.

AI cameras on city route buses



It is possible to inspect gas pipelines multiple times a day.



Strictly Confidential

Safety for Household customers

Gas Stove

Flame Failure Safety Device

Intelligent Gas Meter

Automatically Shut-Off function

- Seismic Shock
- Abnormal Flow Rate Over
- Abnormal Pressure Drop

Smoke and Gas Leak Detectors

Gas tap

Automatically Shut-Off function

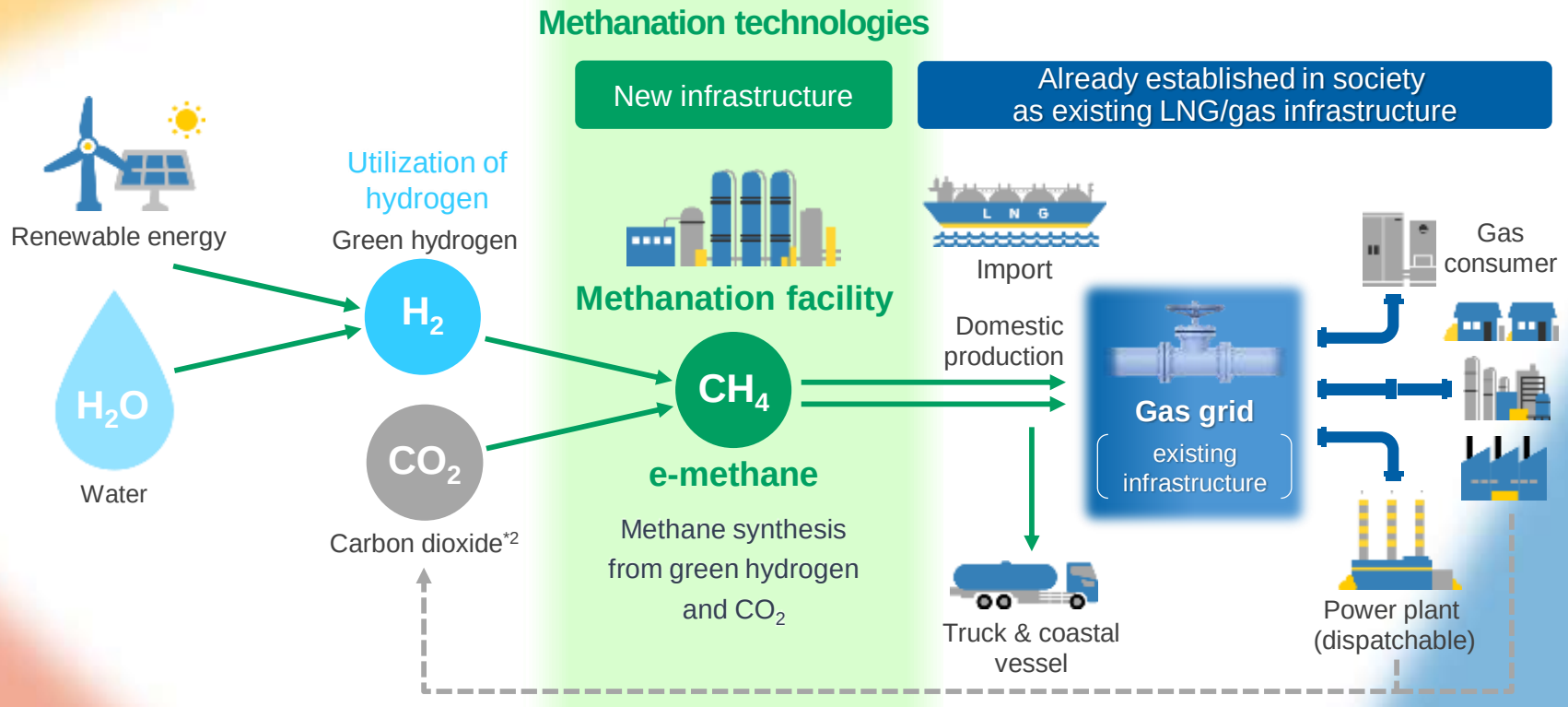
- Abnormal Flow Rate Over

Strictly Confidential

e-methane: key carbon neutral energy carrier

- **e-methane** is a **carbon neutral hydrogen carrier**[*1] synthesized through methanation **using CO_2 captured from emissions**
- Working on **phased transition** to minimize the social costs for energy conversion, **especially in the thermal energy field**

e-methane supply chain



Carbon recycling (CCU*3) = **No increase in atmospheric CO_2**

*1 Hydrogen compounds that achieve efficient storage, transport, and utilization of hydrogen, which cannot be stored and transported over long distances efficiently in its gaseous state

*2 Biogenic CO_2 and possibly DAC (Direct Air Capture) might be utilized in the future.

*3 Carbon dioxide Capture and Utilization

Strictly Confidential

THANK YOU

All questions are welcome :)