

Osaka Gas Completes the Construction of Bakeru LABO, an E-methane Production (Methanation) Demonstration Facility, at the Venue of Expo 2025 Osaka, Kansai, Japan
— Certified as Osaka Gas’s first “clean gas production facility”
based on the Clean Gas Certificate Program —

March 13, 2025
 Osaka Gas Co., Ltd.

Osaka Gas Co., Ltd. (Representative Director and President: Masataka Fujiwara; hereinafter, “Osaka Gas”) is pleased to announce that it today completed the construction of Bakeru LABO, an e-methane production (methanation) demonstration facility which had been under construction within the Carbon Recycling Factory*¹ at the venue of Expo 2025 Osaka, Kansai, Japan.

On March 11, 2025, the demonstration facility was certified as a “clean gas production facility” under the Clean Gas Certificate Program.*² This is the first time for Osaka Gas to obtain the certification.

1. Overview of Bakeru LABO

Under the “Project to Construct and Demonstrate a Model for Reducing the Cost of Hydrogen Supply by Utilizing the Existing Infrastructure” adopted by the Ministry of the Environment,*³ demonstration experiments will be conducted at Bakeru LABO to produce e-methane, which is the city gas of the future, using food waste and carbon dioxide (hereinafter, “CO₂”) to be generated at the venue.

Biogas*⁴ containing CO₂, which is generated by fermenting food waste, CO₂, which is captured by the direct air capture (DAC) demonstration system,*⁵ CO₂ capture system,*⁶ and Japan Pavilion biogas plant,*⁷ and green hydrogen, which is derived from renewable energy, will be used in demonstration experiments to produce e-methane, whose quantity is equivalent to that consumed by about 170 general households (7 Nm³/h), by the methanation system,*⁸ and the e-methane will be used at the Guest House kitchen and the gas cogeneration facility.

During the period of Expo 2025 Osaka, Kansai, Japan, demonstration facility tours be organized using tablets and augmented reality (AR) with advance reservations.*⁹

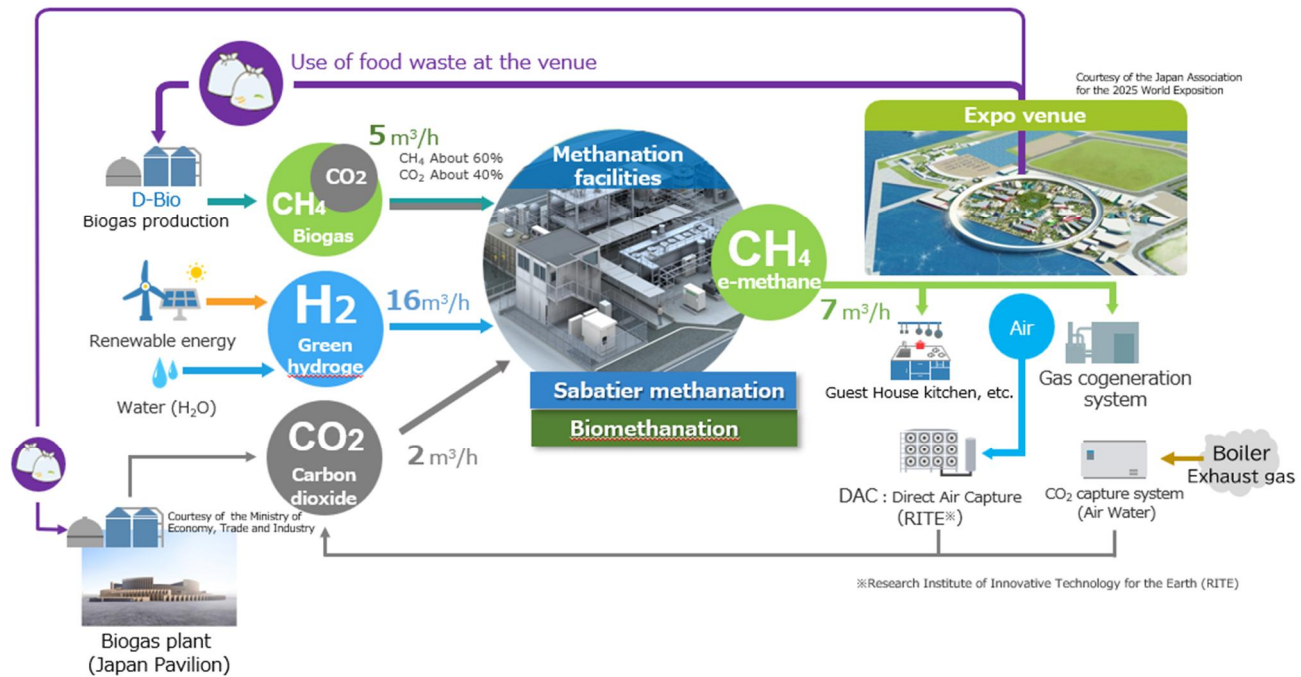
■ Appearance of Bakeru LABO



■ Image of a facility tour



■ Overview including the e-methane production demonstration at the Expo venue



2. Acquisition of certification as a clean gas production facility

A clean gas certificate signifies the value of e-methane and biogas, which are considered to not increase CO₂ in the atmosphere when burned (environmental value). The environmental value of e-methane and biogas can be transferred using clean gas certificates.

The Clean Gas Certificate Program came into operation in April 2024. The Clean Gas Certificate Evaluation Committee certifies clean gas production facilities and validates the quantity equivalent to clean gas produced by certified facilities.

On March 11, 2025, Osaka Gas obtained certification for the demonstration facility as a clean gas production facility under the name of the “Biogas/E-methane Production Demonstration Facility at the Venue of Expo 2025 Osaka, Kansai, Japan.”

Osaka Gas will obtain validation for the quantity equivalent to clean gas produced by the demonstration facility.

3. Future plan

After the demonstration project, while scaling up the methanation facilities, Osaka Gas aims to introduce a system that produces e-methane from renewable energy-derived hydrogen and CO₂ contained in biogas derived from food waste to incinerators and food processing plants mainly in the Kinki region by 2030.

The Daigas Group, under the “Energy Transition 2050” initiative announced in February 2025, remains committed to developing technologies and services that contribute to a decarbonized society and solving social issues, including climate change, in order to become a corporate group that contributes to the “further evolution” of customers’ lives and businesses.

- *1: Initiative at the Carbon Recycling Factory (webpage of the Japan Association for the 2025 World Exposition):
<https://www.expo2025.or.jp/future-index/green/> (in Japanese)
- *2: Website of the Clean Gas Certificate Evaluation Committee:
<https://www.clean-gas-certificate.com/> (in Japanese)
- *3: Hydrogen Supply Chain Demonstration Project of Methanation Utilizing Renewable Hydrogen and Food Waste Biogas in Urban Areas (Released on April 27, 2022)
https://www.osakagas.co.jp/company/press/pr2022/1306105_49634.html
- *4: Gas which is generated by fermenting food waste and consists of methane (about 60%) and CO₂ (about 40%)
- *5: Webpage of the Research Institute of Innovative Technology for the Earth (RITE): <https://rite.or.jp/expo2025/en/>
- *6: Webpage of Air Water Inc.: <https://site.awi.co.jp/expo2025/green-expo/> (in Japanese)
- *7: Webpage of the Ministry of Economy, Trade and Industry: https://www.meti.go.jp/english/press/2025/0114_001.html
- *8: Osaka Gas's biomethanation system and Kanadevia Corporation's Sabatier methanation system will be used.
- *9: The reservation site is currently under construction on the Daigas Group's webpage for Expo 2025 Osaka, Kansai, Japan. Daigas Group's webpage for Expo 2025 Osaka, Kansai, Japan
<https://www.daigasgroup.com/expo2025/> (in Japanese)