

NTT and Osaka Gas to Convert the Polylactic Acid Fabric That Adorned the NTT Pavilion into Energy

—Effective utilization of biomass resources for achieving a circular economy—

February 24, 2026
NTT Group
Osaka Gas Co., Ltd.

TOKYO—February 24, 2026—The NTT Pavilion, exhibited by the NTT Group (NTT, NTT DOCOMO, NTT East, NTT West, NTT DATA, and NTT Urban Solutions) at the 2025 Japan International Exposition (hereinafter the “Osaka-Kansai Expo”), featured “A green Pavilion” as one of its architectural themes. The pavilion incorporated fabric made from polylactic acid, a material that is 100% biodegradable, as part of its construction elements. The NTT Group and Osaka Gas Co., Ltd. are pleased to announce that Osaka Gas will utilize a portion of the fabric to convert it into energy and reuse it at a sewage treatment plant.



■ Overview

Osaka Gas will utilize a portion (60 kg) of the fabric used in the NTT Pavilion at the Osaka-Kansai Expo and, using its proprietary technology, convert polylactic acid into lactic acid. The lactic acid will be fed into the digester at the Osaka City Nakahama Sewage Treatment Plant, where it will be converted into biogas and used as energy within the treatment plant. The collected fabric is expected to yield 60 m³ of biogas (equivalent to the daily city gas consumption of approximately 30 households).

Polylactic acid is a biodegradable bioplastic derived from plants and decomposed by microorganisms under specific conditions. Bio-based plastics are expected to contribute to reducing the use of fossil resources and other finite resources and curbing greenhouse gas emissions. The government has announced a plan*¹ to increase the domestic introduction of bio-based plastics to 2 million tons by 2030, approximately 30 times the 2018 level (70,000 tons).



▲ NTT Pavilion seen from above ▲ Fabric on the wall surface that will be reused as energy

■ Roles of each company

The NTT Group is promoting initiatives aimed at realizing a circular society and introduced a sustainable architectural concept at the NTT Pavilion. When introducing biodegradable fabric designed for recycling, the NTT Group prioritized both durability and aesthetic appeal as requirements, and selected fabric made from polylactic acid after extensive verification, including testing for degradability and adaptability to environmental conditions. During the construction phase, the NTT Group verified the degradability of the dyed materials and their performance in outdoor environments exposed to sea breezes and dust.

Osaka Gas will use proprietary technology to decompose collected polylactic acid-based fabric into lactic acid, which is then converted into biogas together with sewage sludge at the sewage treatment plant. The biogas will be reused as energy within the plant.

■ Comments from each company

Under the architectural concept of “Emotional architecture,” the NTT Group has created spaces where people, nature, and digital technology coexist in harmony. It is committed to building with low environmental impact and promoting the recycling of resources. The NTT Group will continue to pursue new value creation, global sustainability, and the achievement of carbon neutrality by fiscal year 2040 under its environmental and energy vision, “[NTT Green Innovation toward 2040](#).”

Osaka Gas has focused on bioplastics (polylactic acid) since around 2009, developing proprietary technology to decompose polylactic acid into lactic acid and conducting demonstration projects^{*2*3} on the anaerobic digestion of lactic acid at sewage treatment plants in Osaka City. Under the “[Daigas Group Energy Transition 2050](#)” program announced in February last year, Osaka Gas will continue to develop technologies and services that contribute to a carbon-neutral society and strive to address social challenges, including climate change.

The NTT Group and Osaka Gas will continue to effectively utilize biomass resources and strive to realize a circular economy.

■ Overview of the NTT Pavilion

Name	NTT Pavilion
Client	NTT, Inc.
Design and supervision	NTT Facilities, Inc.
Construction	Okumura Corporation
Development and production of polylactic acid fabric	Unitika Trading Co., Ltd.
Site area	3507.92 m ²
Building area	1179.25 m ²
Total floor area	1407.57 m ²

*1: Roadmap for Bioplastics Introduction

<https://www.env.go.jp/content/900534219.pdf>

*2: Conducted jointly with Kyoto University, NJS Co., Ltd., and the municipal government of Osaka under the Ministry of Land, Infrastructure, Transport and Tourism's FY2022 Sewage Application Research.

https://www.osakagas.co.jp/company/press/pr2022/1305412_49634.html (Japanese)

*3: [Japan's first project of this kind / Industry-academia-government collaboration with Osaka Metropolitan University and Osaka City] Demonstration of Biogas Production From Waste Bioplastics Aiming to effectively utilize biomass resources and build a model for local energy production and consumption

https://www.osakagas.co.jp/en/whatsnew/_icsFiles/afieldfile/2025/12/19/251016.pdf