



TOHO GAS GROUP



PRESS RELEASE

TotalEnergies, TES, Osaka Gas, Toho Gas and ITOCHU Partner Up to Develop the Live Oak Project for e-NG Production in Nebraska

Paris, December 2, 2025 – TotalEnergies, TES, Osaka Gas, Toho Gas, and ITOCHU have signed a Joint Development and Operating Agreement, granting the Japanese companies a combined 33.3% stake in the Live Oak project — a large-scale facility to produce electric natural gas (e-NG) also known as e-methane, initiated by TotalEnergies and TES and currently under development in Nebraska, United States. Following the agreement, TotalEnergies and TES will each maintain a 33.35 % stake in the project.

The partners are now preparing the Front-End Engineering Design (FEED) phase, targeting a capacity of approximately 250 MW of electrolysis and 75 ktpa of methanation. The project, subject to a Final Investment Decision in 2027, is scheduled to begin commercial operations by 2030, with plans to export e-NG to Japan. Osaka Gas and Toho Gas will be the primary offtakers. This project helps the Japanese gas majors in achieving their goal of injecting 1% carbon neutral gas (such as e-NG) into the gas grid by 2030.

The agreement builds on the strategic partnership established between TotalEnergies and TES in [2023](#) to pioneer at scale production of e-NG. The Live Oak project will leverage Nebraska's abundant biogenic CO₂ resources, captured from bioethanol plants, and the growing renewable power generation capacity in the United States.

The participation of Osaka Gas, Toho Gas, and ITOCHU (as a coordinator of Japanese companies), underscores their commitment to decarbonization with the adoption of e-NG and positions Live Oak as the leading project for carbon-neutral gas production for Japan.

e-NG is a synthetic gas produced from renewable hydrogen and CO₂. Chemically identical to conventional natural gas, e-NG can be seamlessly integrated into existing LNG infrastructure—liquefaction, transport, regasification, and distribution—without any alterations to consumer equipment.

About TotalEnergies

TotalEnergies is a global integrated energy company that produces and markets energies: oil and biofuels, natural gas, biogas and low-carbon hydrogen, renewables and electricity. Our more than 100,000 employees are committed to provide as many people as possible with energy that is more reliable, more affordable and more sustainable. Active in about 120 countries, TotalEnergies places sustainability at the heart of its strategy, its projects and its operations.

About TES

TES is a global green energy company developing giga-scale projects to accelerate the energy transition. In Europe, TES' projects strengthen energy security and the diversification of energy imports, as well as

support the European Union's decarbonisation efforts. In Wilhelmshaven, Germany, TES is developing green energy terminal, that will serve as a major hub for sustainable molecules. The already operating floating storage and regasification unit (FSRU) will be followed by a large-scale onshore LNG terminal and a CO₂ export terminal. Globally, TES leverages renewable energy solar, wind, and hydro, along with climate-neutral CO₂ for the production of e-NG (electric natural gas). Large-scale e-NG projects are underway in the US (Live Oak), Canada (Project Maurice), and across Europe, and the Middle East. These green molecules support the shift to real zero emissions across industries and help win the race against climate change.

About Osaka Gas

The Daigas Group is dedicated to realizing a carbon-neutral future through its Carbon Neutral Vision and Energy Transition 2050 initiative. As part of this effort, the Group aims to integrate 1% e-methane into its gas grid by 2030, paving the way for broader adoption across society. To achieve this goal, the Group is actively advancing e-methane technologies, conducting demonstration projects, and building supply chains both in Japan and overseas—driving progress toward carbon neutrality by 2050.

About Toho Gas

Toho Gas aims to make its entire supply chain including its customers' sites carbon neutral by 2050. To this end, Toho Gas is currently accelerating initiatives that contribute to the low-carbon transition and further decarbonization of its customers. Toho Gas will devote itself to realizing a decarbonized society and further development of Chubu region by securing and providing diverse and optimal decarbonized energy sources, including e-methane and biogas.

About ITOCHU

ITOCHU is involved in domestic trading, import/export, and overseas trading of various products, as well as business investment in Japan and overseas.

ITOCHU, with the group's corporate mission "Sampo-yoshi" (good for the seller, good for the buyer and good for society), is pursuing a policy of enhancing its contribution to and engagement with the SDGs through business activities, including promoting e-NG, as a member of the e-NG Coalition.

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