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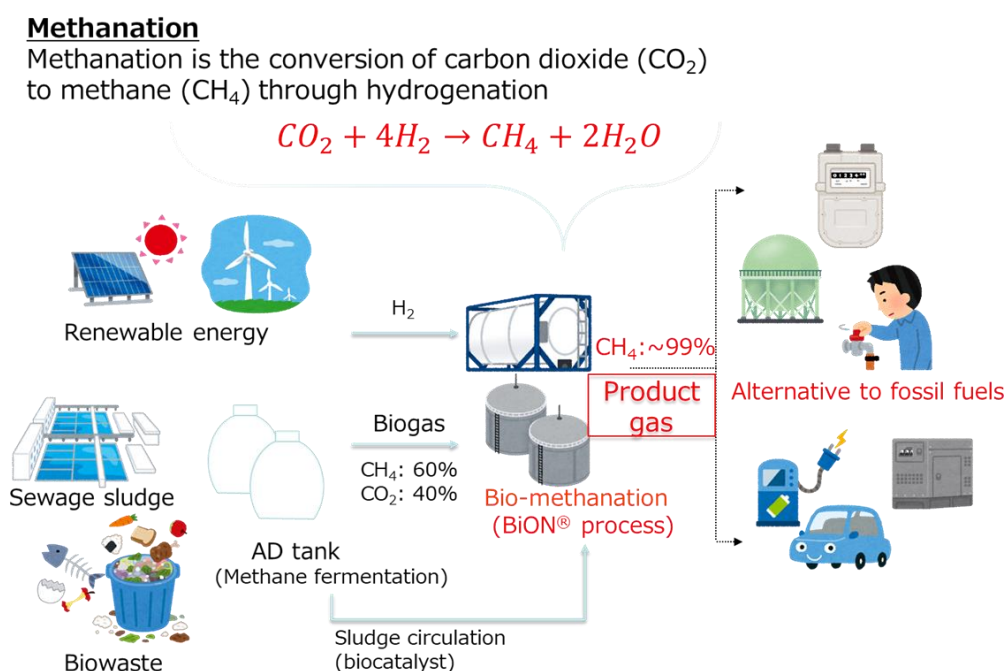
“Ex-situ” Type Biomethanation Project Proposal Is Adopted by Ministry of Land, Infrastructure, Transport and Tourism ~ Joint Research with Japan Sewage Works Agency, Using Our Group’s Technology ~

Hitachi Zosen Corporation (hereinafter, Hitachi Zosen) is pleased to announce that its proposal for a research project on Ex-situ type biomethanation reaction technology for sewage sludge digestion gas has been selected for the B-DASH FS Survey^{※1} of the FY2024 Sewerage Innovative Technology Demonstration Project (B-DASH Project^{※2}), for which the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) issued an open call in January 2024.

In implementing the project, Hitachi Zosen has signed a joint research agreement with the Japan Sewage Works Agency (Tokyo) for the above initiative.

In this project, the methane in digestion gas will be made highly concentrated by Ex-situ type biomethanation, and its use as an alternative fuel to city gas will be investigated. The project will be carried out until the end of March 2026, at the Akisato Sewage Sludge Terminal Treatment Plant in Tottori City as the test field, using testing equipment manufactured and installed by Hitachi Zosen, and examining the effects together with the Japan Sewage Works Agency.

【Image of biomethanation implementation at sewage treatment plant】



Biomethanation is a technology that synthesizes hydrogen and carbon dioxide into methane through the action of micro-organisms, and is available in both Ex-situ and In-situ types. In-situ type is a technology to perform biomethanation at the same time as the decomposition of organic substances in the digester. However, generally high concentration of methane is difficult. Ex-situ type we work with can achieve a methane level of 95% or higher by installing a methanation reactor outside the digester and carrying out the reaction under conditions suitable for biomethanation.

Our Group company, Hitachi Zosen Inova Schmack GmbH (HZI Schmack, Germany), has Ex-situ biomethanation technology and has commercialized a methane production capacity of 100 Nm³/h. In 2022, we delivered the equipment for Switzerland's first biomethanation project. Hitachi Zosen will leverage HZI Schmack's proven technology for this project, aiming for early social implementation.

The sewage sector emits approximately 5.16 million t-CO₂/year of greenhouse gases (FY2020 results, source: MLIT document 'Initiatives for decarbonization in the MLIT'). MLIT has stated that it aims to create a 'Green Innovation Sewerage System' that will lead the way in the future towards a decarbonized and recycling-oriented society, by maximizing the potential of sewers and creating new social and industrial models based on sewers.

Hitachi Zosen has developed and commercialized stoker-type incineration technology with low greenhouse gas (GHG) emissions for sewage sludge incineration, and we will further contribute to GHG reduction from the sewerage sector by utilizing the group's comprehensive strengths.

※1 B-DASH FS Survey

As a preliminary step of B-DASH project, the project examines the possibility of popularization including introduction effectiveness and confirms technology performance.

※2 Sewerage Innovative Technology Demonstration Project (B-DASH Project)

B-DASH Project: Breakthrough by Dynamic Approach in Sewage High Technology Project) promotes the creation of energy, energy conservation, flooding countermeasures, and aging countermeasures in the sewerage business by accelerating R&D and commercialization of new technologies. It also supports the overseas expansion of the water business by Japanese companies.

The outline of this project is as follows.

1. Public offering: Ministry of Land, Infrastructure and Transport
2. Project name: 2024 Sewerage Innovative Technology Demonstration Project (B-DASH Project), B-DASH FS survey
3. R&D Theme : Survey project on Ex-situ type biometanation response technology for sewage sludge digestion gas
4. Implementor : Hitachi Zosen Corporation and Japan Sewage Works Agency.
5. Site : Akisato Sewage Sludge Terminal Treatment Plant (Tottori City)
6. Period : March 31, 2026 from the day following the conclusion of the contract