

## Establishment of the Innovative Methanation Technology Social Implementation Review Committee (Joint Committee) to Achieve Carbon Neutrality by 2050

December 20, 2022  
Tokyo Gas Co., Ltd.  
Osaka Gas Co., Ltd.

Tokyo Gas Co., Ltd. (President: Takashi Uchida, hereinafter, "Tokyo Gas") and Osaka Gas Co., Ltd. (President: Masataka Fujiwara, hereinafter, "Osaka Gas") jointly established the Innovative Methanation Technology Social Implementation Review Committee (chaired by Prof. Kikkawa) in order to receive advice on the social implementation of the innovative methanation technologies that both companies are individually working on in the Green Innovation Fund (hereinafter, "GI Fund") Projects of the New Energy and Industrial Technology Development Organization (NEDO).

Based on the advice of intellectuals and industry experts in this joint committee, the two companies will proceed with the reliable social implementation of innovative methanation technologies.

Toward the realization of carbon neutrality by 2050, the decarbonization of gaseous energy, which supports heat demand in the industrial, commercial, and residential sectors, is an important issue. Under these circumstances, e-methane, which is produced via methanation using hydrogen and carbon dioxide (hereinafter, "CO<sub>2</sub>") as raw materials, allows existing city gas infrastructure and consumer equipment to be used, thereby enabling both a smooth transition to carbon neutrality and a reduction in additional social costs. Furthermore, e-methane is also expected to be used in the fields of power generation and transportation.

For the social implementation and spread of the use of e-methane, significant cost reductions are required. Therefore, the two companies are individually working on the research and development of highly efficient, innovative methanation technologies in the GI Fund Projects for the stable, inexpensive supply of e-methane.

Toward the social implementation of the innovative methanation technologies, the two companies will formulate their respective social implementation plans, while working together to examine common issues by, for example, obtaining advice through this joint committee.

Specifically, we will work together to identify issues in order to realize an even more inexpensive, stable supply of e-methane in the future, and to examine production and supply scenarios and social implementation models in order to make our business commercially feasible. In addition, based on the advice of each member of the committee, which consists of intellectuals and experts from industries that are considering reducing CO<sub>2</sub> emissions through carbon recycling and industries that are possible e-methane users, we aim to formulate a plan with a higher probability of achieving social implementation.

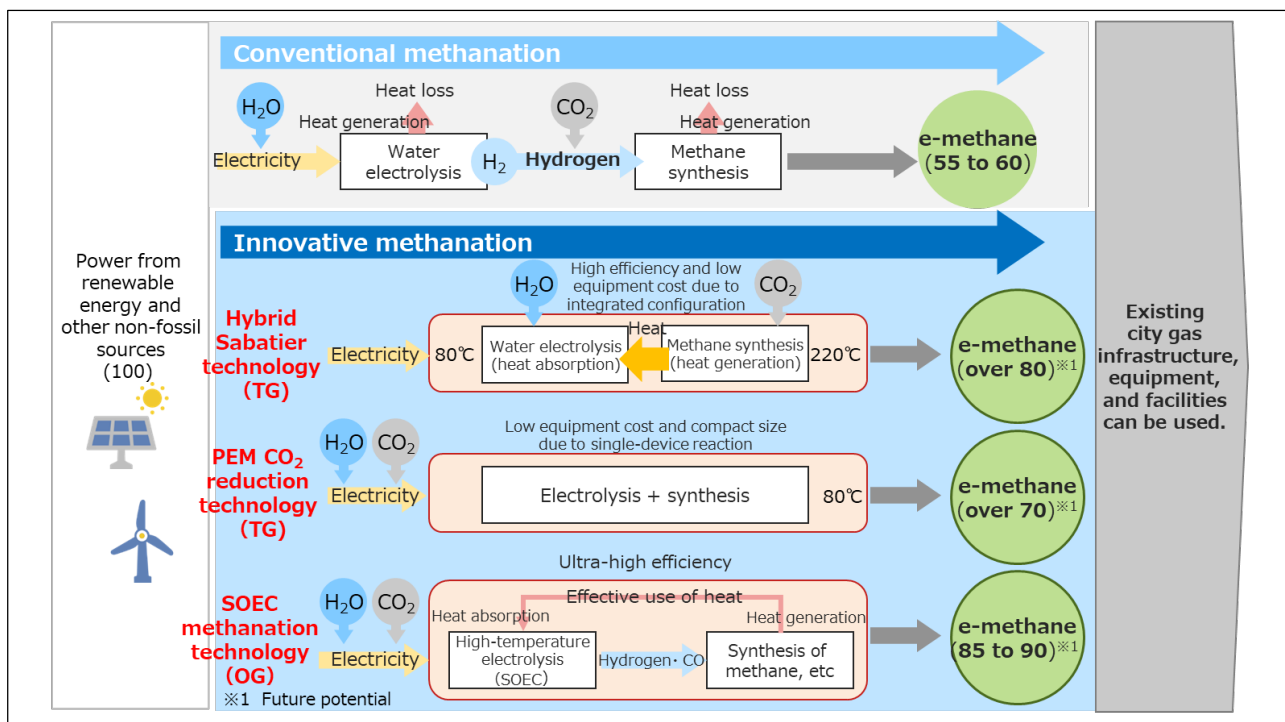
### 1. Overview of the joint committee

Name	NEDO Green Innovation Fund Projects "Innovative Methanation Technology Social Implementation Review Committee"
Date of establishment	December 20, 2022
Chairperson	Takeo Kikkawa (Vice President, International University of Japan; Professor, Graduate School of International Management)
Administrator	Tokyo Gas, Osaka Gas
Description of research and examination	Based on various surveys, the two companies will examine the validity of the assumptions and models for project implementation, as well as issues and countermeasures, and receive advice on these matters. <Main items to be examined> Candidate sites suitable for raw material procurement and production (in and outside Japan) Creation of production and supply scenarios (first draft) Creation of a social implementation model and a roadmap (first draft)
Meeting schedule	First meeting: December 20, 2022 Thereafter: Scheduled to be held once every six months

## 2. Innovative methanation technologies

The innovative methanation technologies that the two companies are working on have two epoch-making common features that are not found in conventional methanation technology (Sabatier reaction). These features shown below help reduce costs.

- (1) High energy conversion efficiency achieved through the integrated production process and the use of waste heat
- (2) Ability to produce e-methane directly from water and CO<sub>2</sub> with a high degree of efficiency without the need to procure hydrogen



In addition to holding meetings of this joint committee, the two companies plan to hold a symposium on the innovative methanation technologies on March 22, 2023 as one of the GI Fund Projects. Targeting people in a wide range of fields who are interested in carbon neutrality, we will introduce our initiatives related to the innovative methanation technologies in the GI Fund Projects. Some lectures and a panel discussion by experts on the significance and issues relating to the initiatives will also be held.

Through collaboration between these GI Fund Projects, the two companies will advance efforts to promote the social implementation and spread of innovative methanation technologies to help achieve carbon neutrality by 2050.