INPEX, Osaka Gas to Commence Construction of Test Facility for CO2 Emissions Reduction and Practical Application of Effective CO2 Use Through One of World's Largest Methanation Operations

- Targeting Practical Application of Technology Enabling Carbon Neutralization of City Gas -

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INPEX CORPORATION
Osaka Gas Co., Ltd.

INPEX CORPORATION (INPEX) and Osaka Gas Co., Ltd. (Osaka Gas) today announced they will jointly commence construction of one the world's largest CO2-methanation test facilities capable of producing 400 normal cubic meters of methane per hour, equivalent to the amount of methane consumed by about 10,000 households in Japan per day. The construction work will be carried out by Chiyoda Corporation based on an engineering, procurement and construction (EPC) contract signed between the parties.

This project is part of a joint technical development initiative that INPEX and Osaka Gas launched in 2021 targeting the practical application of a CO2-methanation system aimed at the carbon neutralization of natural gas. In turn, the initiative is based on a subsidized project commissioned to INPEX by the New Energy and Industrial Technology Development Organization (NEDO).

The test facility will consist of methanation, raw material supply, utility equipment and other components, and is planned to be connected to the Koshijihara Plant at INPEX's Nagaoka Field Office in Nagaoka City, Niigata Prefecture, Japan. The Project is scheduled to consist of a demonstration test involving the production of synthetic methane (e-methane[1]) using CO2 extracted from INPEX's Nagaoka Field Office beginning in fiscal year 2025 and introducing the synthetic methane into INPEX's natural gas trunk pipeline network.

[1] In November 2022, the Japan Gas Association announced it will standardize reference of synthetic methane to "e-methane" to improve international recognition.

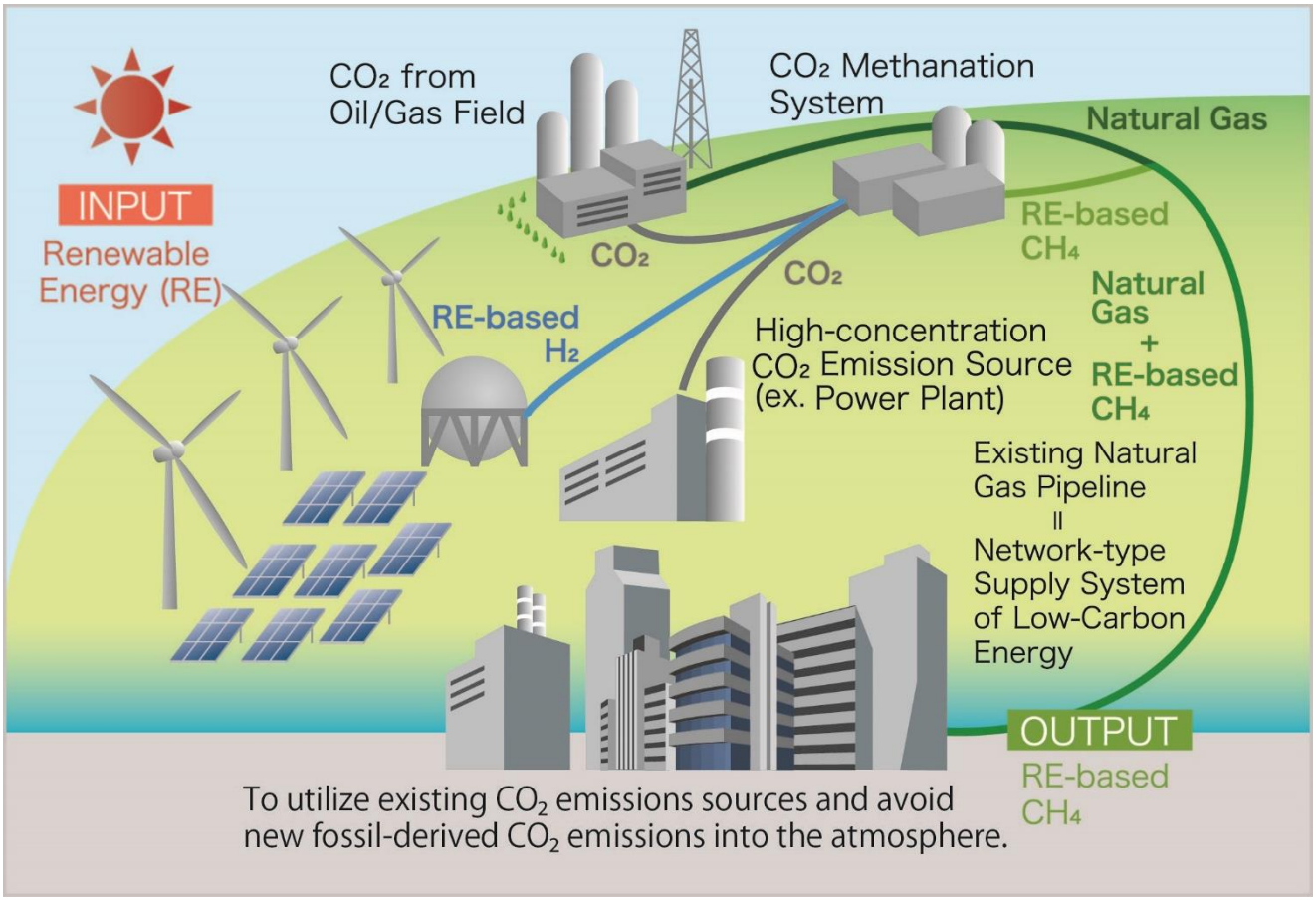
Since 2017, INPEX has conducted basic technical development of CO2 methanation at its Nagaoka Field Office, achieving a synthetic methane production capacity of eight normal cubic meters per hour. INPEX will leverage this experience to oversee the joint technical development initiative and operate the test facility. Meanwhile, Osaka Gas will make use of its engineering capabilities including its design know-how concerning catalytic technology to produce synthetic methane while saving energy as well as scale ups, having nurtured these capabilities since the time it produced city gas and alternative natural gas from crude oil-based resources, to oversee the design of the CO2 methanation facilities as well as the optimization of the process.

Through the joint technical development initiative, INPEX and Osaka Gas will work toward the early-stage adoption of city gas carbon-neutralized through CO2 methanation.

1. Overview of the methanation demonstration business

The Project	Development of CO2 utilization technology for gaseous fuel/Development of practical technology for pipeline injection using large-scale CO2-methanation system
Parties and areas of responsibility	INPEX CORPORATION (scheduled subsidization from NEDO): evaluation of commercial scale applicability Osaka Gas (scheduled outsourcing from INPEX): development of reaction process technology Nagoya University (scheduled outsourcing from INPEX): development of simulation technology
Timeline	Second half of fiscal year 2021 until end of fiscal year 2025 (scheduled)
Location	Newly built location connected to the Koshijihara Plant at INPEX's Nagaoka Field Office
Key components	1) Development of reaction simulation technology with the objective of understanding the reactive behavior of CO2 methanation against catalysts 2) Development of large-scale CO2 methanation reaction process technology with the objective of evaluating and establishing the basic process performance and the long-term durability of catalysts 3) Evaluation of applicability of reaction system with the objective of reviewing commercial scale expansion, applicability and economics, etc.

2. Graphic illustration of the joint technical development initiative



3. 3D model of the test facility