



INPEX CORPORATION

Public Relations Group, Corporate Communications Unit
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INPEX Commences Construction of Surface Plant Facilities of Kashiwazaki Clean Hydrogen/Ammonia Project in Niigata Prefecture, Japan

TOKYO, JAPAN - [INPEX CORPORATION](#) (INPEX) announced today it held a groundbreaking ceremony to commence construction of surface plant facilities of the “Kashiwazaki Clean Hydrogen/Ammonia Project” (hereinafter “project”) to be implemented at the INPEX-owned Higashi-Kashiwazaki Gas Field in the Hirai district of Kashiwazaki City, Niigata Prefecture, Japan.

The project is the first in Japan to build an integrated hydrogen and ammonia value chain from production to usage. Hydrogen and ammonia are forms of clean energy that do not generate CO₂ when used.

Natural gas produced in Niigata Prefecture will be used as a raw material to produce the hydrogen and ammonia. The CO₂ generated during the production process will be separated, pressurized and injected in the Higashi-Kashiwazaki Gas Field Reservoir, a subsurface gas reservoir where gas production has terminated, as a Carbon dioxide Capture, Utilization and Storage (CCUS) effort. Hydrogen produced in this manner is referred to as blue hydrogen¹.

Blue hydrogen produced in this demonstration test will be converted into electricity through a hydrogen power generation system and supplied to end users in Niigata Prefecture. Some of the blue hydrogen will be used to produce blue ammonia¹ with the aim of supplying it for fertilizer use to consumers also in Niigata Prefecture.

Through the project, INPEX will contribute to enhancing Japan’s energy security by realizing clean energy production from domestic gas. In addition, INPEX will use its findings from the project to build a blue hydrogen production plant in Niigata Prefecture utilizing its natural gas field and existing infrastructure, aiming for commercialization by around 2030. The company will also continue to study opportunities for blue hydrogen/ammonia and CCS/CCUS projects internationally, leveraging the knowledge and experience gained from this project.

The surface plant facilities will have an annual production scale of 700 tons, infrastructure to separate and capture CO₂ generated during hydrogen production, CO₂ subsurface injection infrastructure and facilities to produce, store and ship ammonia. All these features involve advanced technologies contributing to a low-carbon society.

The hydrogen production facility will use Air Liquide Global E&C Solutions’ ATR (Autothermal Reforming) technology, which can reduce the energy required to separate CO₂ during hydrogen production. The CO₂ separation/capture facility will adopt a process called HiPACT by JGC Global Co., Ltd./BASF, which enables the reduction of power required to pressurize CO₂ by



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recovering CO₂ at high pressure. The ammonia production facility adopts the technology of Tsubame BHB Co., Ltd., which makes it possible to synthesize ammonia at low temperature and low pressure by adopting a unique catalyst. Daiichi Jitsugyo Co., Ltd. will handle the design, equipment procurement, construction work (EPC), and commissioning services related to these facilities. JGC Corporation will construct hydrogen production equipment, CO₂ separation/recovery equipment, underground injection equipment, and other equipment.

Preparatory work for the surface plant facilities will begin in June 2023, and the main construction work will begin in July 2023. Commissioning will begin in March 2025, with the aim of completing construction in August 2025. In constructing the surface plant, the company will give due consideration to safety and the environment.

The project's hydrogen and ammonia production and CO₂ recovery will be subsidized by the New Energy and Industrial Technology Development Organization (NEDO) as an initiative for "Technology Development for the Utilization and Production of Ammonia as Fuel / Technology development for Blue Ammonia production."

In addition, INPEX will conduct joint research with Japan Organization for Metals and Energy Security (JOGMEC) on the evaluation and implementation of subsurface storage of CO₂ as part of the "Demonstration test on identifying possible CO₂ storage solutions utilizing domestic depleted oil and gas fields."

INPEX seeks to develop a hydrogen and CCUS business, which is one of the 5 net zero businesses outlined in the company's [INPEX Vision @2022](#) announced on February 9, 2022. The company plans to commercialize three or more projects by around 2030 and aims to produce and supply 100 thousand tons or more of hydrogen/ammonia per year targeting an annual CO₂ injection volume of 2.5 million tons or more in around 2030

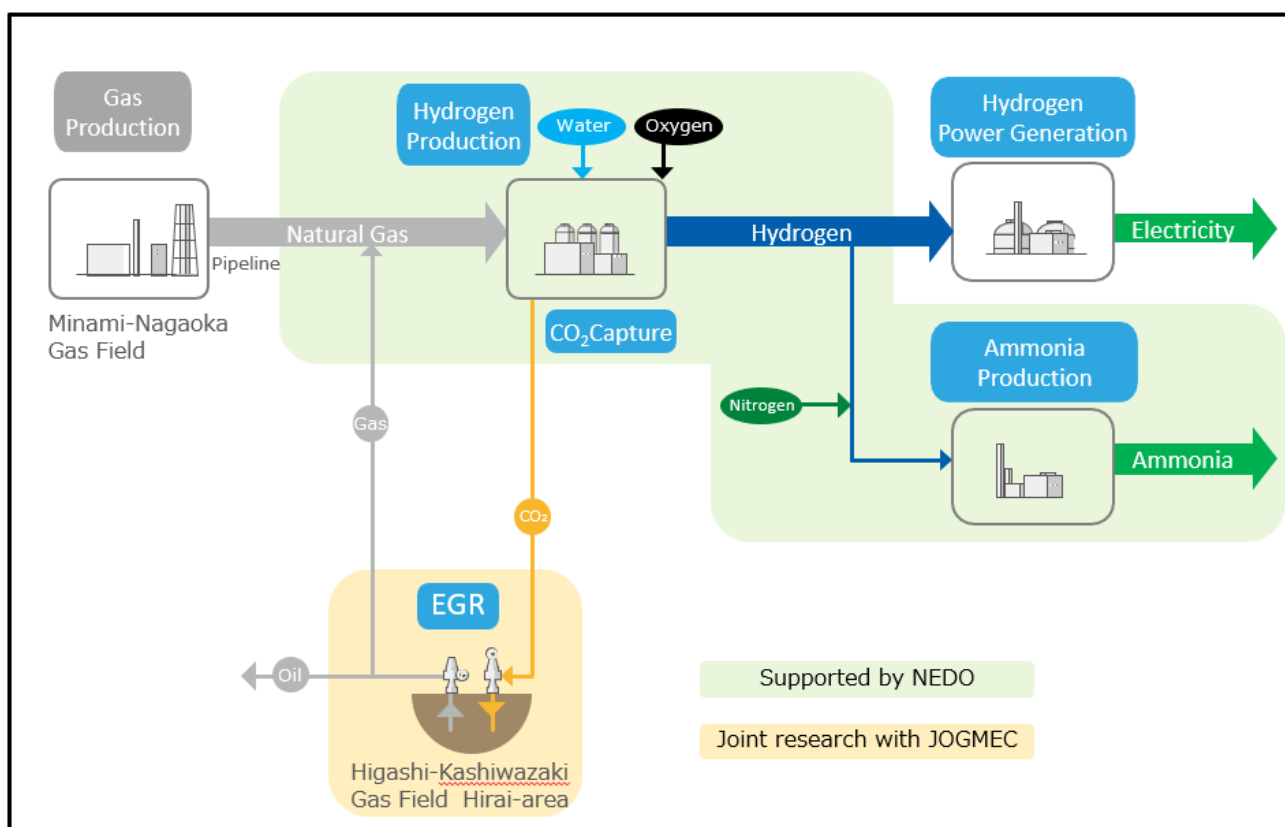
This project will play an important role in the achievement of these goals, and the start of construction work is an important milestone for the success of this demonstration project.

¹ Hydrogen with reduced CO₂ emissions by combining CCS and CCUS technologies that capture, store, and utilize the CO₂ emitted in the manufacturing process of hydrogen produced from fossil fuels is called "blue hydrogen." Ammonia produced from this "blue hydrogen" is called "blue ammonia."

1. Project overview

Content	<ul style="list-style-type: none"> - Hydrogen/ammonia production and CO2 recovery (NEDO subsidization expected) - Evaluation of CO2 storage potential of depleted oil and gas fields in Japan (Joint research with JOGMEC)
Timeline	Second half of fiscal 2022 until end of fiscal 2025
Location	INPEX Higashi-Kashiwazaki Gas Field Hirai District, Kashiwazaki City, Niigata Prefecture
Summary	<ol style="list-style-type: none"> 1) Demonstration of production of blue hydrogen and supply of clean electricity using blue hydrogen 2) Ammonia production using a recently developed low-temperature, low-pressure synthesis process 3) Evaluation and verification of CO2 storage potential of depleted oil and gas fields in Japan 4) Confirmation of enhanced gas recovery (EGR) by CO2 injection 5) Implementation of CO2 injection monitoring to confirm safety

2. Project diagram

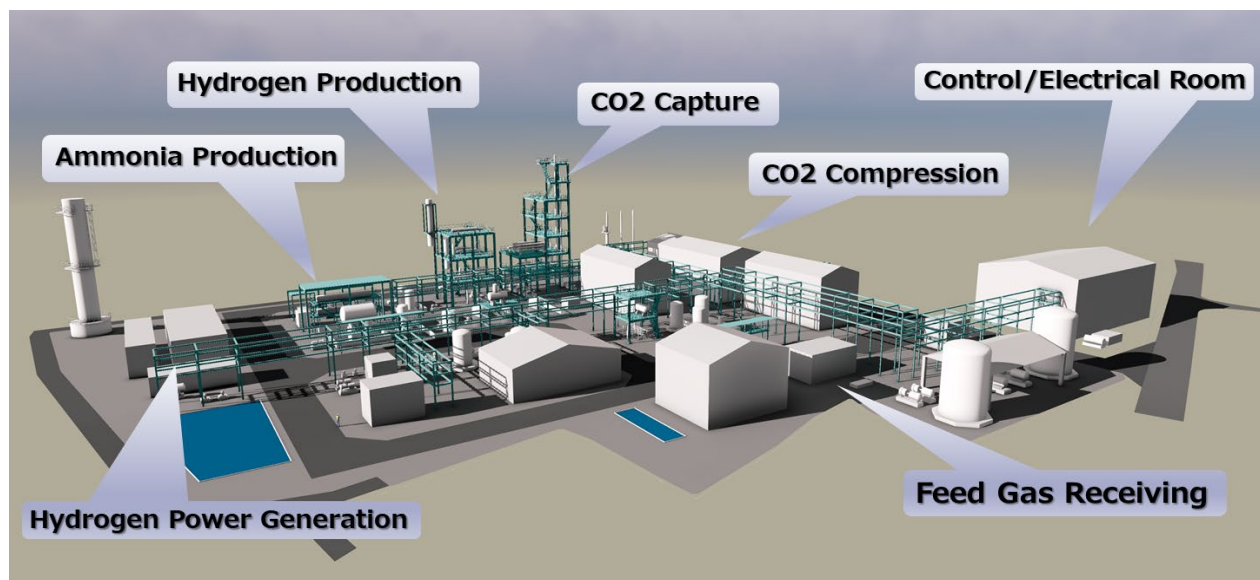


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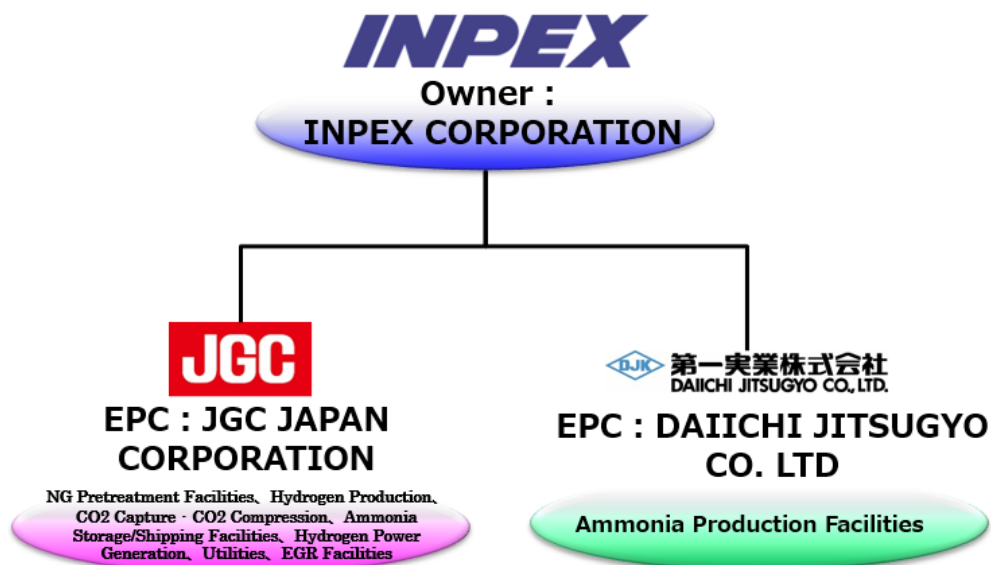
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3. Rendering of completed plant



4. Operation of plant facility construction





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About INPEX

INPEX CORPORATION is Japan's largest exploration and production (E&P) company, and is currently involved in projects across multiple continents, including the Ichthys LNG Project in Australia as Operator. Through building a cleaner upstream business and advancing hydrogen and renewables solutions, INPEX aims to become a leading energy company and continue providing a stable and efficient supply of energy to its customers while pioneering energy transformation towards a net zero carbon society by 2050. For more information, visit <https://www.inpex.co.jp/english/index.html>.

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