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Japan Organization for Metals and Energy Security
Division in Charge: Subsurface Division
Tel:+81-43-276-9220
PR in Charge: Public Relations Division
Tel:+81-3-6758-8106 Fax:+81-3-6758-8008

JOGMEC and INPEX commence a demonstration project for the production of clean hydrogen and ammonia combined with CO2 storage and utilization in Kashiwazaki-city, Niigata Prefecture, Japan

Japan Organization for Metals and Energy Security（JOGMEC）and INPEX CORPORATION（“INPEX”）commenced a demonstration project in Kashiwazaki-city, Niigata Prefecture, Japan for the production of clean hydrogen and ammonia combined with CO2 storage and utilization（hereinafter “project”）from November 2022.

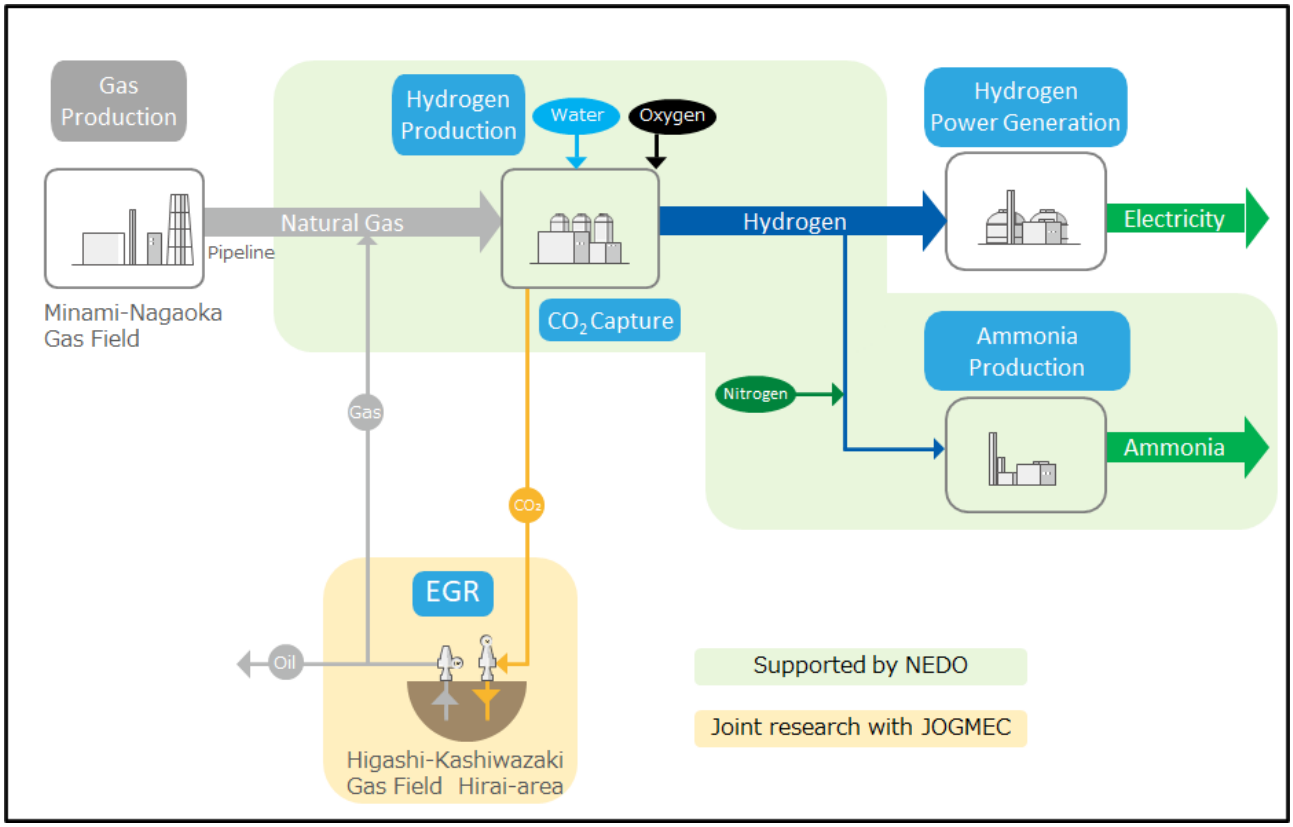
In this project, it is planned that produced hydrocarbon gas from INPEX’s gas field in Minami-Nagaoka is transported to the Hirai area in the Higashi-Kashiwazaki gas field via an existing pipeline and is used to produce hydrogen and ammonia in this area（Note）. By-product CO2 associated with the production process is planned to be separated, captured, and injected into a depleted gas reservoir in the Hirai area in which hydrocarbon gas production already ceased. This makes it possible to suppress CO2 emissions of the process and to produce clean hydrogen and ammonia having low carbon intensity. In addition, we also plan to investigate the effect of enhanced gas recovery, EGR, since the enhancement of hydrocarbon gas recovery by the injection of CO2 into the depleted gas reservoir is expected. We plan to employ several monitoring tools to monitor the behavior of the injected CO2 in the reservoir, while ensuring the safe operation of CO2 injection.

JOGMEC and INPEX under the collaborative research agreement on “Demonstration test on identifying possible CO2 storage solutions utilizing domestic depleted oil and gas fields （hereinafter “demonstration test”）” signed in April 2022 have been investigating the design of this demonstration test on carbon dioxide capture, utilization and storage, CCUS. From the demonstration test, we aim to gain operational experience in CCUS and an understanding of the CO2 storage potential of Japanese depleted gas reservoirs.

In November 2022, INPEX have taken a final investment decision（FID）on the project for clean hydrogen and ammonia production including CO2 storage and its utilization for EGR covered by the collaborative research between JOGMEC and INPEX. This will be the first clean hydrogen and ammonia production project in Japan, and one of the few projects in the world in which FID has already taken. Furthermore, since in this project, clean hydrogen and ammonia will be produced

from domestic hydrocarbon gas, which is important from the perspective of Japan's energy security, the project encourages the development of domestic natural gas fields.

（Note）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."



Project diagram

JOGMEC and INPEX continue to engage in the development of energy and its stable supply, while proactively persuading energy transition towards the realization of a net zero carbon society by 2050. Through this project, we promote the technology development of the enhancement of hydrocarbon gas production and the reduction in CO2 emissions in an upstream sector.

■ Reference

INPEX Takes FID on Blue Hydrogen, Ammonia Production and Usage Demonstration Project in Niigata Prefecture, Japan（November 15, 2022）

（URL）https://www.inpex.co.jp/english/news/assets/pdf/20221115.pdf