Obtained an Approval in Principle (AiP) by ABS for Blue Ammonia FPSO

Tokyo, January 30, 2025 – MODEC, Inc. ("MODEC") and Toyo Engineering Corporation ("TOYO") have jointly obtained an Approval in Principle (AiP) from the American Bureau of Shipping (ABS) for a Blue Ammonia[*1] Floating Production Storage and Offloading ("Blue Ammonia FPSO") that will produce ammonia from the gas supplied by Oil & Gas FPSO located nearby.

This Blue Ammonia FPSO is intended to produce and store blue ammonia by using associated gas which has conventionally been reinjected into the reservoir without specific applications. The FPSO is also equipped with Carbon Capture & Storage (CCS) facility to capture not only CO_2 generated in the process of converting associated gas to ammonia (NH_3), but also CO_2 from gas turbine generators (GTG). This makes it possible to minimize CO_2 emissions from the FPSO during ammonia production.
Additionally, the hull, which stores and offtakes the produced ammonia, was developed in collaboration with Mitsubishi Shipbuilding Co., Ltd.

Blue Ammonia FPSO (image)

This joint development is positioned as the first "Concept Design of Floating Alternative Energy Production Facility" as stated in the Mid-term Business Plan 2024-2026 "Explore a Sustainable Future with Innovation". The concept of producing blue ammonia offshore is achieved by combining MODEC's expertise in overall layout, hull design and mooring technology, cultivated in Oil & Gas FPSO projects, with TOYO's expertise in ammonia production process design and FPSO equipment design. This blue ammonia is expected to serve as an alternative fuel and hydrogen carrier in the energy transition.

MODEC considers this AiP as an initial step in the development of a floating solution for alternative energy production and will continue to strive to refine and mature this concept to address the key challenges for commercialization identified through this development, aiming to provide a safe and affordable alternative energy supply solution. We will contribute to the minimization of CO_2 emissions from FPSOs and the decarbonization of the global energy supply chain through developing new technologies for a sustainable future.

Photo from the AiP award ceremony
(Right to Left) Mr. Makoto Oba, ABS Business Director; Mr. Kazutaka Murayama, Function Manager, Engineering Department and Project manager of Blue Ammonia FPSO development, MODEC, Inc.; Mr. Katsuhiro Nishizawa, Deputy Division Director, Carbon Neutral Business Division, Toyo Engineering Corporation

*1 Blue ammonia: a type of ammonia that is produced using natural gas where CO_2 emissions have been mitigated by CCS or similar technologies.

About TOYO

Toyo Engineering Corporation has been at the forefront of engineering innovation since 1961. As a global engineering and project solutions partner, TOYO offers advanced technological solutions across a range of industries, from oil and gas to renewable energy and petrochemicals in over 60 countries. By leveraging its cutting-edge expertise and commitment to excellence, TOYO helps businesses worldwide achieve operational efficiency and sustainable development. With a mission of "Engineering for Sustainable Growth of the Global Community" Toyo is committed to driving progress and delivering solutions that benefit industries and communities alike.
Learn more at https://www.toyo-eng.com/jp/en/

About MODEC

MODEC is a leading provider of floating production solutions such as Floating Production Storage and Offloading (FPSO) vessels to the offshore oil & gas industry. MODEC performs Engineering, Procurement, Construction and Installation (EPCI) activities for FPSOs, and further by owning and operating its own FPSOs, it provides oil companies around the world with comprehensive and competitive solutions for oil & gas production services.
For more information, please visit https://www.modec.com

Contact: Corporate Planning & Strategies Dept. (Phone +81-3-5290-1240)