

Value Creation Story 01



Creating a decarbonized society

As the movement toward decarbonization as a measure against global warming, in the shipping industry the International Maritime Organization (IMO) is advocating for the phasing-out of greenhouse emissions (zero emissions) as soon as possible during this century. Meanwhile, the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) has announced that it will work to create "carbon neutral ports" by upgrading port functions with consideration for decarbonization, and there are also calls for our products which are deeply involved in the area of Marine Logistics & Transportation to contribute to decarbonization.

Mitsui E&S Group was one of the first to start developing environmentally friendly products in response to the global trend toward decarbonization. We provide environmentally friendly marine propulsion systems and port cargo handling equipment that supports the shift toward decarbonization.

Expansion of production of large marine diesel engines that comply with the NOx Tier III regulations



THS2
(Turbo Hydraulic System type2)
- waste heat recovery system

We accumulate a wide variety of technologies that reduce nitrogen oxide (NOx), sulfur oxide (SOx) and greenhouse gas (GHG) emissions, such as dual fuel engines, exhaust gas recirculation and waste heat recovery. We provide propulsion engines and related machineries, including those developed independently, that comply with environmental regulations, to help conserve the global environment and develop sustainable marine logistics and transport.

NZE (Near Zero Emission) Transtainer®



NZE Transtainer®

We have launched sales of NZE Transtainer® cranes, which enable support for achieving zero emissions in the future.

Additionally, to cope with the widespread adoption of hydrogen supply infrastructure in the future, we are also developing a Transtainer® that will achieve zero emissions by replacing diesel engines generator with hydrogen fuel cell FC power pack.

Target / KPI

○ We will contribute to the Commitment to a Low Carbon Society for the Shipbuilding Industry set out by the Shipbuilders' Association of Japan (SAJ) and the Cooperative Association of Japan Shipbuilders (CAJS).

- Reduce CO₂ emissions by 6.5% by FY2030 in comparison with FY2013.
- Contribute to the reduction of CO₂ emissions in international shipping through the development of energy-saving vessels.
- Increase the level of sophistication of shipbuilding processes by utilizing IoT and other technologies.

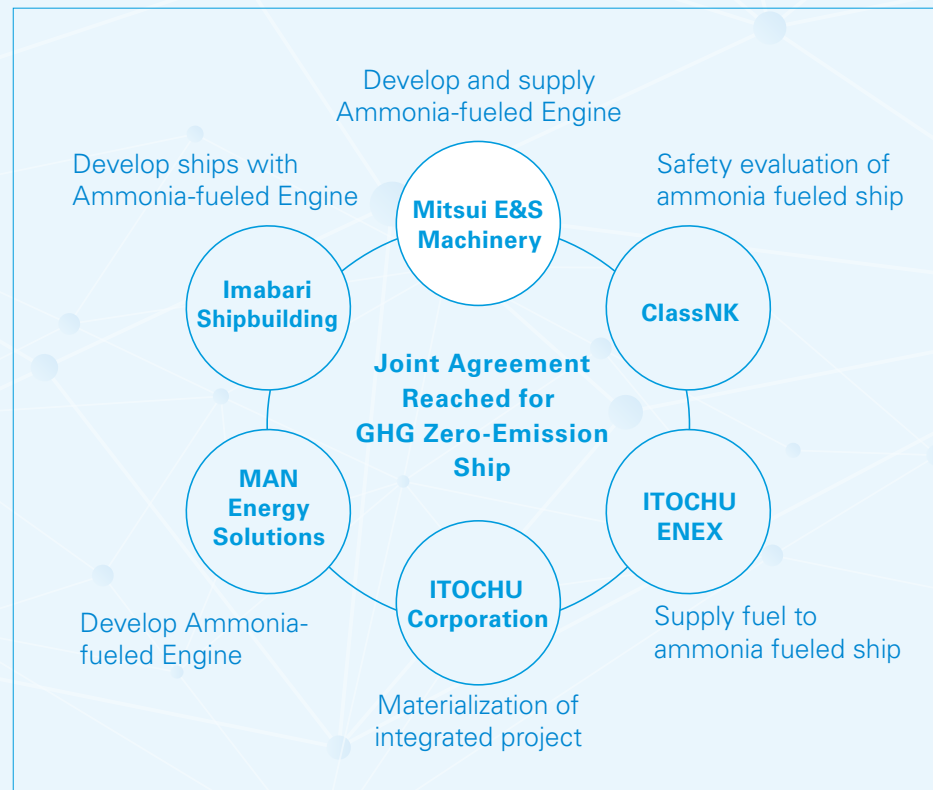
○ We will contribute to create Carbon Neutral Port (CNP) set out by Ministry of Land, Infrastructure, Transport and Tourism.

Further challenges toward realizing a decarbonized society

Challenge Joint Agreement Reached for GHG Zero-Emission Ship

Mitsui E&S Machinery Co., Ltd. is working together with ITOCHU Corporation, Imabari Shipbuilding Co., Ltd., Nippon Kaiji Kyokai (ClassNK) and ITOCHU ENEX Co., Ltd. on the joint development of vessels equipped with ammonia-fueled main engines developed by MAN Energy Solutions (MAN).

Mitsui E&S Machinery Co., Ltd., in cooperation with MAN, is developing an ammonia-burning engine and providing the critical data necessary for designing ships equipped with ammonia-fueled engines. We will contribute to this project by participating from the supplier's standpoint in verifying the safety and reliability of the entire life cycle, including manufacturing and test operation of factories for propulsion systems.



Challenge To Participate on Japan Hydrogen Association

Mitsui E&S Machinery Co., Ltd. and Kaji Technology Corporation have joined the Japan Hydrogen Association, a new organization that promotes global collaboration in the hydrogen field and the formation of a hydrogen supply chain. In the future, we will utilize hydrogen as a fuel and fuel cells as a source of driving power. We will also contribute to the actualization of a hydrogen society by providing compressors for hydrogen-related businesses such as hydrogen refueling stations and hydrogen shipping facilities.



Challenge Engineering services for improving propulsion systems to reduce greenhouse emissions for ships in service

Mitsui E&S Shipbuilding Co., Ltd. and Mitsui E&S Machinery Co., Ltd. have launched propulsion system improvement engineering services to achieve reductions in greenhouse gas emissions for ships currently in service. Working in collaboration with Group subsidiary Akishima Laboratories (Mitsui Zosen) Inc., the two companies will design energy-saving additions and propeller shapes suitable for ship types to improve propulsion efficiency using optimization design technologies utilizing the latest simulation technologies based on ship type data for ships in service.