Oct 6, 2022

Innovation for Cool Earth Forum

NEDO Green Innovation Fund Projects Symposium "A Challenge toward Global Supply Chain Carbon Neutrality"

Development of "Integrated Project" with ammonia as marine fuel

ITOCHU Corporation Green Innovation Business Unit



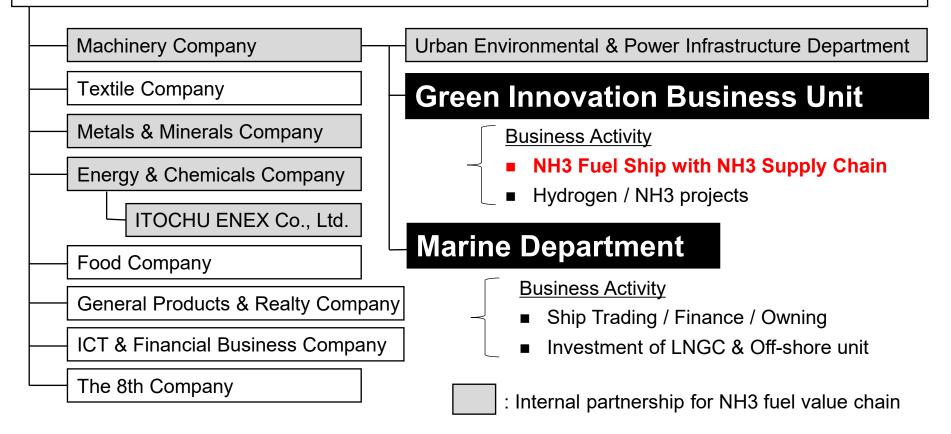
I am One with Infinite Missions

1. Introduction

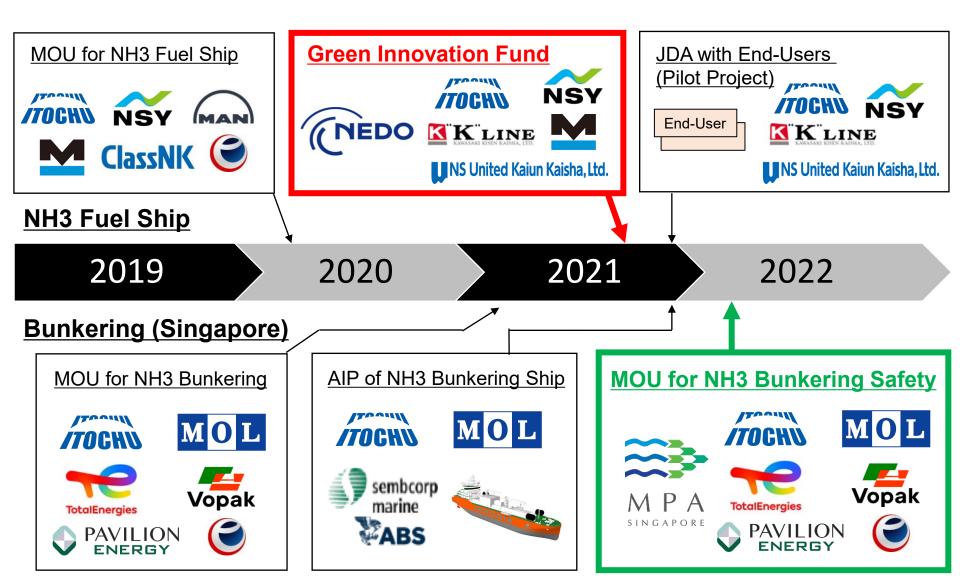




Founded : 1858 (incorporated 1949) Number of employees : 4,319 Number of offices: 94 (oversea) & 9 (domestic) Website: <u>http://www.itochu.co.jp</u>



2. Development of Integrated Project



/TOCH

3. Frameworks of JOINT STUDY





Original JOINT STUDY (established in 2021) for Common Issues, i.e.

- A) Safety for NH3 Fuel Ship
- Safety for NH3 Bunkering
- NH3 Fuel Specification
- NET CO2 emission of NH3
- Support from various companies, authorities, organization as experts for some category with around 40
- After Original JOINT STUDY program in 2021, ITOCHU proposed "Joint Session" as to item B) with separated framework of JOINT STUDY with port authorities for NH3 Bunkering Safety (established in 2022).
- **ITOCHU** established Working Group to focus on "Key Factors" for NH3 Bunkering among limited parties of JOINT STUDY.



Emission Rule

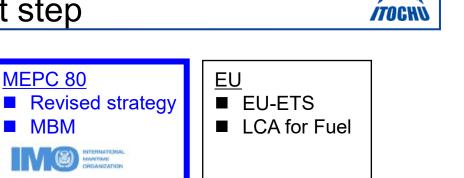
(EEXI / CII)

Bunkering

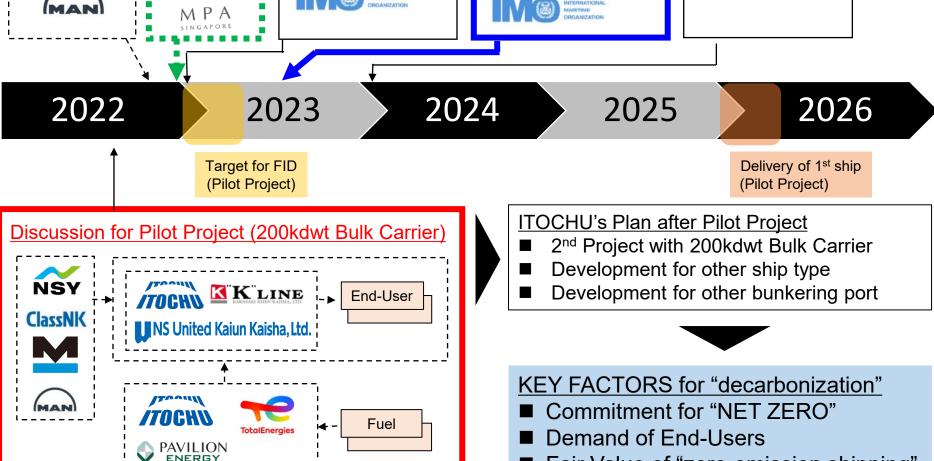
Guideline

Engine Test

(1-cylinder)



Fair Value of "zero-emission shipping"







THANKS