

Tokyo GX Week
Second International Conference on Fuel Ammonia



Fuel Ammonia Value Chains The Key to Achieving Carbon Neutrality

IHI

September 28th, 2022

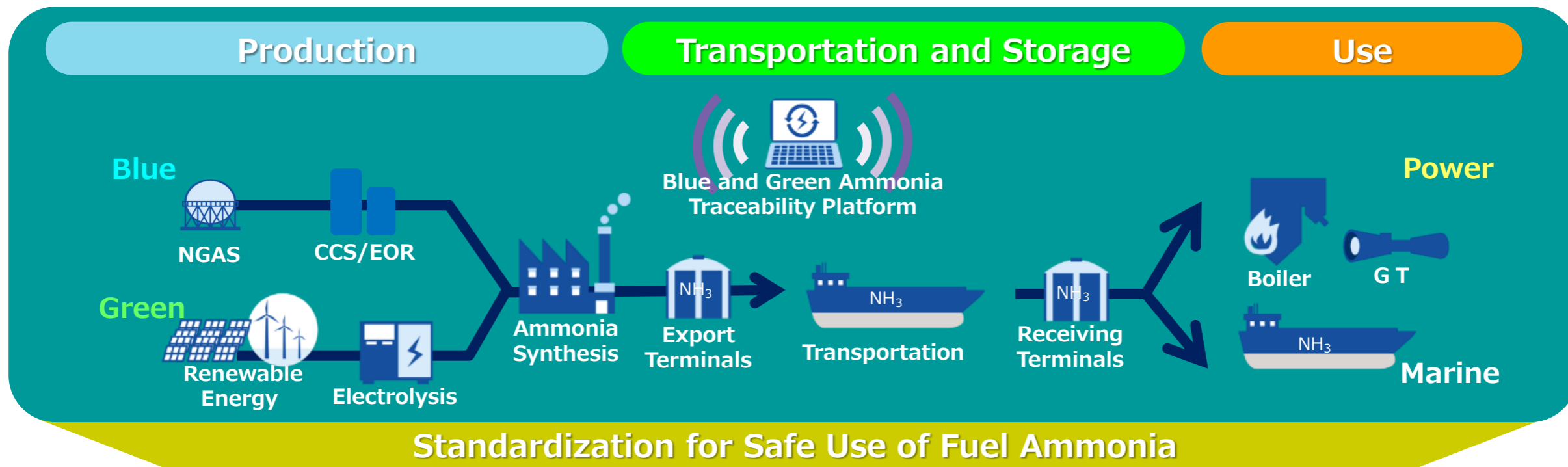
Hiroshi IDE

President

Chief Executive Officer

I H I Corporation

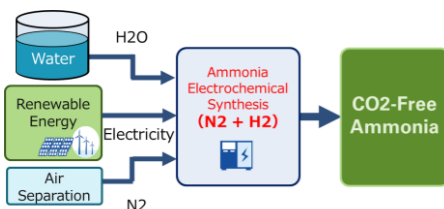
Building Fuel Ammonia Businesses Through New Value Chains



➤ Some of IHI's ongoing activities

Future Technologies

Direct synthesis of CO₂-free ammonia from water and nitrogen



Technology Development

Ammonia Receiving Terminal and Tank for Carbon Neutral Port



Value Chain Demo

Clean Ammonia Supply Chain Demonstration Linking UAE and Japan



Joint Project

New Environmental Value Distribution Platform using Blockchain Technology



Academia Collaboration

"Co-creation Research Center of Ammonia Value Chain for Carbon Neutrality"



IHI Roadmap Towards Pure Ammonia Fired BTG & GT

- With the support of the Green Innovation Fund, IHI is accelerating its efforts to convert thermal power plants with Zero carbon emissions

BTG Boiler Turbine Generator

FY2010~2018
Base Technology for ammonia co-firing (SIP:2014~)

FY2022
Succeeded in combusting 100% ammonia in a single test burner for boiler with suppressed NOx formation (Press release on May 17)



FY2023
20% ammonia co-firing demonstration using 1,000MW commercial BTG

FY2028
More than 50% ammonia co-firing demonstration using 1,000MW commercial BTG



Goal
100% pure ammonia fired BTG & GT for Zero carbon emissions thermal power plants

GT Gas Turbine

FY2020
Achieved 70% co-firing with liquid ammonia direct combustion

FY2022
CO₂-free power generation achieved with the world's first GT using 100% liquid ammonia (Press release on June 16)



FY2027
Development of 100% ammonia fired 2MW GT

Partnering for Success in Fuel Ammonia with IHI

➤ Collaborating Around the World to Deploy Fuel Ammonia

Morocco

Feasibility study:
Ammonia co-firing at
Coal Fired Power Plant

Malaysia

Feasibility Study:
Decarbonizing the Power
Sector



Japan

Accelerating Large-
Volume Co-firing Demo
Project



Resource
Production

Co-firing
Technology

India

Feasibility Study:
Ammonia Co-Firing at
Coal Fired Power Plant



Australia

EPC Contract: Demo
Plant for Carbon-Free
Hydrogen Production



Indonesia

Verification:
Ammonia Co-Firing and
Mono-Firing Technologies



IHI is also engaged in discussions with numerous potential partners in the **Middle East, Europe, and Latin America.**

Australia

Investigation: Green
Ammonia Production and
Export



