

Technical Review Special Edition: Plants and Infrastructure Projects

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Welcome to this special edition of our technical review featuring plants and infrastructure projects.

The conflict in Ukraine has shaken not only those directly involved but also the entire world. Japan has once again been confronted with the critical challenge of so-called economic security such as stable supply of energy and securing of supply chains. My heart goes out to the victims of the war. We hope that peace will return as soon as possible.

Under the banner of “Mission Net Zero”, Mitsubishi Heavy Industries, Ltd. (MHI) aims to achieve net-zero CO₂ emissions by 2040, not only in our company but also throughout the value chain. In the domain of Plants and Infrastructure Systems, various technologies and products have been and are being developed with an eye to fulfilling this goal. This special edition presents some of our undertakings.

Firstly, in relation to shipbuilding, “Development of liquefied CO₂ carriers and onboard CO₂ capture systems for realization of carbon neutral society,” and “From LNG-as-fuel to ammonia-as-fuel (fuel transition for marine vessels to achieve carbon neutrality)” are presented. Introduced for the topic of engineering and environmental chemistry are: “MHI Group’s recent CO₂ capture technology for carbon neutral society,” “AI remote monitoring and operational support system MaiDAS® for the sustainability of waste to energy plants,” and “Start of commercial operation of the state-of-the-art stoker-type waste incinerator.” In the field of ironmaking equipment, “Hydrogen-based fine-ore reduction” is covered.

Also presented as part of our efforts to meet a variety of customer needs by making full use of the combined capabilities of MHI Group are “Business development for platform screen door system with integrated engineering, comprehensive management including civil and architectural activities” and “MHI Group’s facility engineering project to offer customers a wide range of services.”

Lastly, as the technological development achievements of all of our companies, “Inverse reinforcement learning technology contributing to imitation and know-how visualization of plant expert operations” is introduced to describe our efforts to tackle the challenge of passing on plant operation know-how to the next generation of operators.

In the domain of Plants and Infrastructure Systems, we will keep working on the development of technologies and products required to realize a sustainable world. We appreciate your continued understanding and support for our activities.