

## Technical Review Special Edition: Carbon Neutrality

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Welcome to this special edition of our technical review featuring carbon neutrality.

With increasing awareness of global warming and climate change as common challenges facing humanity, each country is accelerating its efforts for decarbonization. On the other hand, it is also essential to sincerely work on the issues to realize an energy supply that is economical and stable. We consider it necessary to tap the technologies and resources of Mitsubishi Heavy Industries, Ltd. (MHI) Group and advance our efforts.

Under such circumstances, in October 2021, MHI Group released the “Carbon Neutrality Declaration by 2040” with the theme of “MISSION NET ZERO”. Many countries including Japan have pledged to achieve carbon neutrality by 2050. To fulfill this goal, we have set the target year for Net Zero CO<sub>2</sub> emissions as 2040, a decade earlier than the government, considering the lead time required for our products and technologies to be implemented in society. Although this is quite ambitious goal setting, it is our responsibility as a company that has long been supporting social infrastructure. Our approach is to focus on the two areas of growth we have set: “Energy Transition” aiming to decarbonize the energy supply side, and “Smart Infrastructure” to realize decarbonization, energy conservation, and less labor-intensiveness on the energy use side.

In this edition, some of the MHI Group’s “MISSION NET ZERO” initiatives for carbon neutrality are presented in 19 reports.

The first set of reports focuses on the “Energy Transition”, which pertains to the initiatives on the energy supply side. These present the Takasago Hydrogen Park project for the realization of a hydrogen society, the status of development of hydrogen/ammonia-fired gas turbines and hydrogen/ammonia engines, the technology for ammonia co-firing in coal-fired boilers, and the nuclear energy business that can realize a stable, carbon-free energy supply. Furthermore, “CO<sub>2</sub> capture, circulation and utilization” is indispensable in carbon neutrality. Presented in relation to this topic are the large-scale carbon dioxide capture, utilization and storage (CCUS) and compact CO<sub>2</sub> capture systems, sustainable aviation fuel (SAF) that can help decarbonize the aviation industry, and the recovery and recycling system of biomass resources in municipal waste.

The next set of reports focuses on the “Smart Infrastructure”, which pertains to the initiatives on the energy use side. These include the projects about: decarbonization in the iron and steelmaking sector; heat pump technology – the key to decarbonizing the industrial sector; smartification of logistics; social infrastructure to support mobility; large-capacity electric compressors for air-conditioning systems in electric vehicles; advanced composite material technology to reduce the weight of future aircraft; and data centers with power-saving features that will be the foundation for the next-generation social infrastructure. Also presented in relation to the projects undertaken with the aim of “providing total solutions” for the smartification of social infrastructure are the

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decarbonization of factories/works/plants as well as the energy management system for carbon neutrality.

We appreciate your continued understanding and support for our activities.