

Technical Review Special Edition: Energy Systems

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Welcome to this special edition of our technical review featuring Energy Systems.

The business surrounding energy and the environment is changing rapidly with soaring energy prices, inflation, accelerated transition to a carbon-neutral society, and emerging geopolitical risks.

The soaring energy prices caused by the conflict in Ukraine have made people aware of the importance of energy security again, especially in Europe, and accelerated the introduction of renewable energy, which is an independent power source for respective regions. In the United States, the Inflation Reduction Act (IRA) was enacted in August 2022. This system is expected to enhance the economic incentives for the introduction of decarbonization technologies and accelerate energy transition. Also, for some countries in the Asia-Pacific region, such as Singapore and Australia, energy transition is becoming more active and studies to introduce hydrogen/ammonia power generation are beginning to take place.

The Japanese government is also accelerating its efforts to achieve carbon neutrality by 2050. It revised its Basic Hydrogen Strategy, which was formulated in 2017, on June 6, 2023. In this strategy, hydrogen/ammonia power generation is considered to be a driving force for increasing demand and reducing supply costs in establishing the first supply chain on a large scale by 2030.

Mitsubishi Heavy Industries Group declared "MISSION NET ZERO" in 2021, aiming for carbon neutrality by 2040, ten years ahead of the Japanese government's target, and Energy Systems is developing technologies, products, and services that contribute to the energy transition toward decarbonization on the energy supply side.

In this special edition, we will introduce hydrogen/ammonia gas turbines for hydrogen/ammonia power generation, ammonia burners for boilers, and compressors and ammonia detoxification technologies essential for the establishment of hydrogen/ammonia supply chains. We will also introduce our initiatives at Takasago Hydrogen Park, the world's first facility that enables integrated verification of technologies from hydrogen production to power generation, and Nagasaki Carbon Neutral Park, which promotes the development of elemental technologies essential for the carbon neutralization of Energy Systems products, as well as the development of decarbonization solutions for ports utilizing Energy Systems products. In addition, 13 reports will present Energy Systems' latest initiatives, including biomass power generation as an immediate solution for carbon neutrality, gas turbine combined cycle power generation certified by Guinness World Records as having the world's highest thermal efficiency and wind turbine maintenance solutions.

Toward the realization of a carbon-neutral society, we will offer realistic solutions with reliable technologies, products, and services, including the technologies introduced in this special edition, to meet the needs of our customers and society. We appreciate your continued understanding and support for our activities.