

Social Initiatives

2 Customers and Business Partners

Providing “reliable technologies, products, and services” is one of the aims set out in the Core Values of KOBELCO. By strengthening our *monozukuri* (manufacturing) capabilities, we aim to maintain the trust and satisfaction of our customers and business partners, both inside and outside Japan, through unparalleled products and services.

Promoting *Monozukuri*

The Kobe Steel Group has been working to improve information sharing, synergy, and human resource development in order to strengthen its manufacturing capabilities. We will continue to work to strengthen quality, on-site manufacturing capabilities, and energy conservation to increase manufacturing capabilities throughout the Kobe Steel Group and provide reliable products and services.

Strengthening Groupwide Collaboration

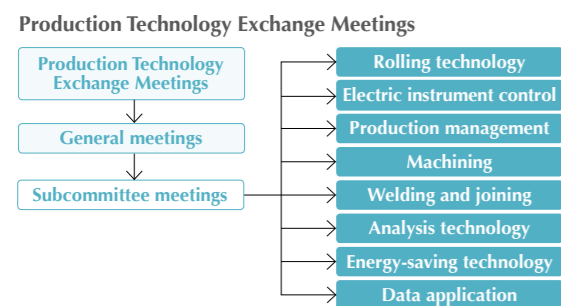
Representatives from each manufacturing facility participate in our Meetings for Monozukuri Promotion Leaders. These meetings allow participants to discuss companywide policies, present examples of positive initiatives and share information. Our Production Technology Exchange Meetings, meanwhile, provide opportunities for engineers to share information on elemental technologies and raise the Group’s overall technical level.

Meetings for Monozukuri Promotion Leaders

Each manufacturing facility in the Group has a monozukuri promotion leader (at the General Manager or Deputy General Manager level) who acts as a contact person for Kobe Steel Group monozukuri promotion activities. The leaders gather to attend the Meetings for Monozukuri Promotion Leaders, which are held regularly. Examples of internal and external initiatives are reported on, progress reports for ongoing initiatives are shared, and debates on new measures are carried out. Initiatives outlined during these meetings are then used as guidelines for improvement activities at each facility. When members are interested, we also arrange for on-site meetings with the facilities where improvements have been introduced.

Production Technology Exchange Meetings

The Kobe Steel Group holds Production Technology Exchange Meetings to allow engineers to interact and exchange ideas with others in the same field within the Group. The meetings currently include eight subcommittee meetings split according to technological field, as shown in the diagram below. These subcommittee meetings go beyond the organizational framework of business units and companies. Engineers participate and tackle the issues of information-sharing, human resource development, and business contributions.



Initiatives to Strengthen On-Site Manufacturing Capabilities

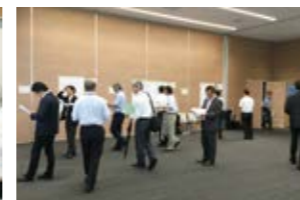
As the basis for its on-site manufacturing capabilities, the Kobe Steel Group considers 5S^{*1} activities to be of utmost importance, and is working to strengthen such activities for all manufacturing workplaces.

We also proactively promote on-site quality control circle activities. In particular, we hold a KOBELCO Quality Control Circle Conference once per year, aiming to improve the level of activities through Groupwide, cross-functional information sharing and education.

*1 5S stands for *seiri* (sort, classify), *seiton* (set in order, straighten up), *seiso* (shine, clean), *seiketsu* (standardize cleanups), and *shitsuke* (sustain discipline). 5S activities stress the importance of improving the work environment on the manufacturing floor.



Group discussion



Presentation of discussion outcomes



KOBELCO Quality Control Circle Conference



5S inspection

Initiatives toward Open Innovation

Creation of Framework for Advancing Open Innovation with National Institute for Materials Science and Three Steelmakers

The National Institute for Materials Science (NIMS), Nippon Steel & Sumitomo Metal Corporation, JFE Steel Corporation and Kobe Steel signed a memorandum of understanding on June 30, 2017 for creating an open platform called Materials Open Platform (MOP), with NIMS at the center, for the purpose of advancing open innovation in the steel industry.

Under MOP, longer-term issues shared by each company that are challenging to tackle alone will be collectively addressed through an “all-Japan” system of horizontal collaboration.

While enhancing innovation and creativeness, the aim is to strengthen the core technologies that will support the international competitiveness of Japan’s steel industry into the future. By having all parties working together to advance the results of their research, MOP aims to contribute to the creation of a safe, secure society and reduce environmental impact while promoting infrastructure exports.



Signing ceremony

Field Testing of Compressed Air Energy Storage (CAES) System

NEDO, Waseda University, and the Institute of Applied Energy are validating a Compressed Air Energy Storage (CAES) system that uses control technologies based on projections of the amount of electricity generated by wind turbines, which vary in output depending on the weather conditions, in order to stabilize their use on the power grid.



Demonstration test facility

For this NEDO project,^{*2} Waseda University developed the control technology for the CAES system, the Institute of Applied Energy was in charge of constructing the system, and Kobe Steel designed and manufactured the equipment ordered by the Institute of Applied Energy. Through the establishment of control technologies for the CAES system, the project aims to contribute to the greater use of renewable energy.

*2 R&D Project on Grid Integration of Variable Renewable Energy / Enhanced Wind Power Forecast and Control Technology / Development of Output Fluctuation Control Technology Using Stored Energy Technology (Fiscal 2014–2018)

Establishment of Kobelco Mugenryoku Joint Research Center with Hiroshima University

On April 1, 2018, Kobelco Construction Machinery Co., Ltd. and Hiroshima University set up the Kobelco Mugenryoku Joint Research Center on the grounds of the university as the first project under Hiroshima University’s newly created system for research with private-sector companies and other external entities.^{*3}

The Kobelco Mugenryoku Joint Research Center is a research facility capable of supervising and managing multiple ongoing joint research projects. A higher level of research activity between organizations is made possible by the Research Center overseeing agreements regarding joint research projects, joint research, and academic guidance. This should translate into highly useful outcomes for both industry and academia.

Kobelco Construction Machinery and Hiroshima University have engaged in joint research since 2007, advancing their industry-academia relationship on multiple fronts. They subsequently concluded a cooperative agreement with Hiroshima University for comprehensive research collaboration in 2016. Kobelco Construction Machinery and Hiroshima University plan to reinforce their industry-academia relationship on various fronts including the development of new technologies, mutual training of human resources, and assistance to local communities.

*3 *Mugenryoku* is a coined word. “Mu” means “dream,” “gen” is “source,” and “ryoku” is “power” in Japanese. *Mugenryoku* stands for jointly creating a society where dreams come true, powered by strong will as the source of energy. This center was set up by utilizing a system to establish joint research organizations within Hiroshima University with private-sector companies and other external entities. Based on high mutual understanding and trust, the goal is to create new value by cooperating in joint research and promoting human resource development, with the ultimate aim of giving back to society.



Tape-cutting ceremony