

## Responsibility to Customers (Provide Quality Products and Enhance Customer Satisfaction)

### Basic Policy

Under its corporate philosophy of contributing to society with the world's most innovative technology, the JFE Group will continue to be a company that provides world-class products and services for a prosperous global future.

### JFE Group Standards of Business Conduct

#### 1 Provide quality products and services

Earn the trust and acclaim of customers by endeavoring to provide safe, high-quality products and services based on superior technologies, and by fully respecting and protecting the privacy of personal and customer information. Also, leverage our superior technologies for the sustainable growth of our Group and society.

### Targets and Results

Under its Standards of Business Conduct to provide quality products and services, the JFE Group has identified increasing efficiency and enhancing cost competitiveness in production and engineering and raising quality of products and services and ensuring reliable supply as two key management concerns and sets KPIs to manage progress and promote relevant initiatives.

► [Material Issues of Corporate Management and KPIs for FY2022](#) (P.20)

### Initiatives

#### JFE Group's Quality Initiatives

The JFE Group manages quality by ensuring compliance with quality standards set by each operating company. All manufacturing sites that require ISO 9001 certification for their quality management have been duly certified.

#### Strengthening Quality Assurance System



To serve customers by meeting their quality requirements and delivering products that boast the world's highest quality, JFE Steel has established a quality assurance system with advanced sensors for process monitoring, in addition to its ongoing efforts to develop new products and advanced manufacturing technologies.

The company's quality assurance system is continually improved based on the Guidelines for Enhancing Quality Assurance Systems, issued by the Japan Iron and Steel Foundation (JISF). In an effort to enhance the reliability of product testing, the company uses high-precision equipment and is working to thoroughly prevent errors in identification work and data tampering by automating every process, from conducting tests that include instructions on testing and collating specimens to delivering test results.

Moreover, JFE Steel intends to provide customers with innovative value by operating its quality management system based on ISO 9001 and by maintaining the assurance certifications required for steel products, including the JIS mark and approvals from ship classification bodies as well as certification under the national standards of relevant foreign countries. It is also

actively promoting the formation and standardization of international rules in conjunction with future DX promotion and the social implementation of technologies obtained through research and development.

## JFE Engineering

Products and services that JFE Engineering designs, procures, manufactures or constructs must comply with all required rules, regulations, and standards, and quality must satisfy the needs of our customers. Under this corporate policy, it continually strives to improve the quality of its products and services.

Specifically, our certified inspectors conduct on-site inspections at each phase of a plant construction project, including procurement, manufacturing, construction, and pilot operations. We also conduct witness inspections by customers during critical processes and at the time of equipment delivery to ensure quality.

In addition, JFE Engineering has published quality-assurance manuals based on the specific characteristics of each product and obtained ISO 9001 certification for each product category.

To further strengthen its quality assurance system, JFE Engineering uses an electronic document processing system in its quality inspections to prevent omissions in inspection data and data tampering, and all inspection data is electronically stored to further ensure traceability.

## JFE Shoji

Guided by its quality philosophy of maintaining customer trust by consistently delivering products that satisfy quality requirements, JFE Shoji is constantly striving to enhance the level of its quality assurance for customer confidence and satisfaction. Its processing centers in Japan and abroad are systematizing and automating operations to eliminate human errors. Raising employee awareness is essential for preventing human error at every stage, from receiving orders to processing, inspecting and shipping. The company provides quality education for employees by introducing case studies of non-conformance at other companies as well as at Group companies in Japan and abroad. JFE Shoji also conducts a quality audit at all relevant Group companies in and outside of Japan to confirm the quality of each processing center and provide advice. Moreover, it follows up as necessary by continuously monitoring the progress of improvements to maintain and enhance the level of quality assurance.

## Ensuring Stable Supply of Products

## JFE Steel

JFE Steel is working to improve its manufacturing capabilities by actively utilizing digital technologies in its manufacturing processes. While strengthening its manufacturing base by introducing a cyber-physical system (CPS) for all manufacturing processes, JFE Steel is also striving to improve quality and yield through the full-scale introduction of quality prediction technology that uses integrated data from steelmaking to final processing, and to enhance reliability by increasing the frequency of automated testing and inspections.

These activities will stabilize facility operations as well as production and quality to safeguard the consistent delivery of high-quality products to customers.

## JFE Engineering

JFE Engineering had been designated as a special construction business operator under the Construction Business Act to undertake mechanical, civil engineering, and building construction work, and assign dedicated managing engineers at construction sites to oversee the technical aspects of construction work. The smooth implementation of plant construction projects depends on licensed specialists. The company is always striving to secure the necessary human resources by encouraging employees to acquire qualifications by granting allowances and through mid-career hiring of licensed personnel.

**SH JFE Shoji**

JFE Shoji is strengthening its entire supply chain, from materials procurement to processing and distribution, to consistently meet customer demands. In the raw materials field, it has established a system and network for procuring iron ore, coal, and other raw materials for steel from Brazil, Australia, and other countries around the world. In the area of processing and distributing steel products, it is making capital investments for the Group and raising efficiency to realize an optimal system for sales and processing to meet customer demand while strengthening its quality assurance system by periodically conducting quality audits at Group companies.

**Responsible Export Practices**

Each JFE operating company promotes international peace and security by working against the spread of weapons of mass destruction and excess accumulation of conventional weapons. Specifically, the company carries out internal inspections to confirm the final destinations, customers and applications of its exported products, and then ensures that export procedures are carried out properly. In addition, the Legal Affairs Department conducts internal briefings to disseminate knowledge of export-related laws and regulations, such as the Foreign Exchange and Foreign Trade Act. Also, education on export security controls and related measures is implemented for the employees of Group companies involved in trading.

**Improving Customer Satisfaction**

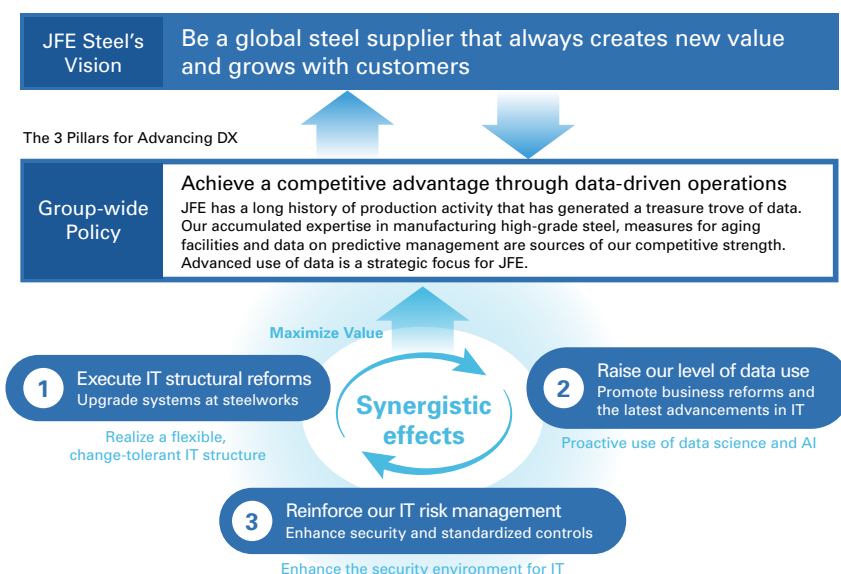
**ST JFE Steel**

**Aggressive Advancement of DX**

JFE Steel's Digital Transformation (DX) strategy revolves around technological innovation based on the active introduction of IoT, AI and data science (DS) and the application of data assets. Compared to mills in other countries, we possess an enormous amount of know-how and data accumulated through many years of production operations. Our abundant data assets are the source of our value creation.

We will harness the latest DS and AI technologies to make versatile use of such data in achieving innovative improvements in productivity, enhancing quality and ensuring stable operations to raise our competitiveness.

**Advancement of Digital Transformation (DX)**



Please see the DX REPORT.

➤ [DX REPORT](https://www.jfe-holdings.co.jp/en/investor/library/dxreport/index.html) (https://www.jfe-holdings.co.jp/en/investor/library/dxreport/index.html)

## Testing and Research Centers for Collaboration with Customers on Product Development

JFE Steel collaborates with customers in research and development. The Customers' Solutions Lab (CSL) for auto industry customers and the JFE Welding Institute -Center for Integrity against Fatigue and Fracture (JWI-CIF2) are located in eastern Japan, while the Customer Center Fukuyama (CCF), which develops materials and conducts applied technology research, is in western Japan. Using these facilities to strengthen early vendor involvement (EVI)\* enables the company to quickly identify customer needs and develop products based on cutting-edge evaluation techniques and innovative production processes.

\* Customer participation in product development is from an early stage to facilitate innovative new methods, functions, processes and evaluations for new steel materials.



Customers' Solutions Lab (CSL)

## Enhancing Our Response to Customer Needs

In an effort to strengthen the company's total capabilities for better responding to customer needs, its sales department emphasizes sales education for sales personnel, from the headquarters and branch offices according to position, and for regional employees of overseas offices. Specifically, it develops abilities in areas such as engaging in technical conversations, picking up clues from customer relations and using them in product development, offering suggestions to improve logistics and distribution, and analyzing financial indicators and costs. We also constantly strive to improve our ordering system to ensure that customer product specifications are accurately reflected in manufacturing.

## Unified Customer Care

JFE Steel regularly conducts customer questionnaires and interviews to draft strategies for greater customer satisfaction. Business strategies are shared among the sales divisions, the business planning functions and steelworks to facilitate unified customer care and proposals that leverage the collective strengths of the JFE Group.

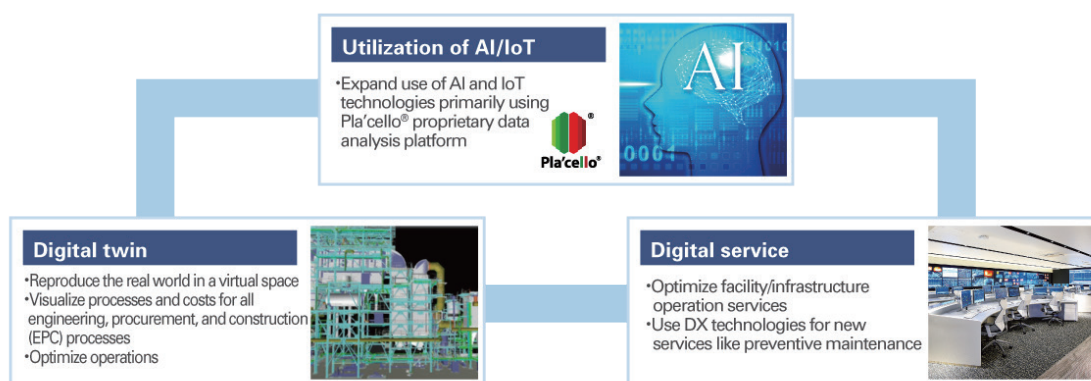
**JFE Engineering**

**Create and Continue to care for the Foundation of Life by Maximizing DX**

JFE Engineering plans, designs, builds and operates the infrastructure that supports people’s lives and industry. Digital transformation (DX) is crucial for accelerating the pace of its work and for maintaining its position at the forefront of the engineering industry.

JFE Engineering will aggressively pursue DX beyond simply raising operational efficiency to fundamentally reform its operational processes, add new functions to its products and services, and take on the challenge of developing new businesses that utilize data, to realize a green society and enhance corporate value.

**JFE Engineering’s DX strategy**



Please see the DX REPORT.

➤ [DX REPORT](https://www.jfe-holdings.co.jp/en/investor/library/dxreport/index.html) (https://www.jfe-holdings.co.jp/en/investor/library/dxreport/index.html)

**Engineering Company Assessments Based on Customer Evaluations**

JFE Engineering uses customer surveys, interviews, and contractor performance evaluation forms to collect and assess data on the company’s construction management, quality, advanced technologies and innovation. Each division analyzes and applies the data for quality improvement, new product development and the overall strengthening of aftersales service, to ultimately enhance customer satisfaction.

**JFE Shoji**

**Establishing a System to Meet Customer Needs**

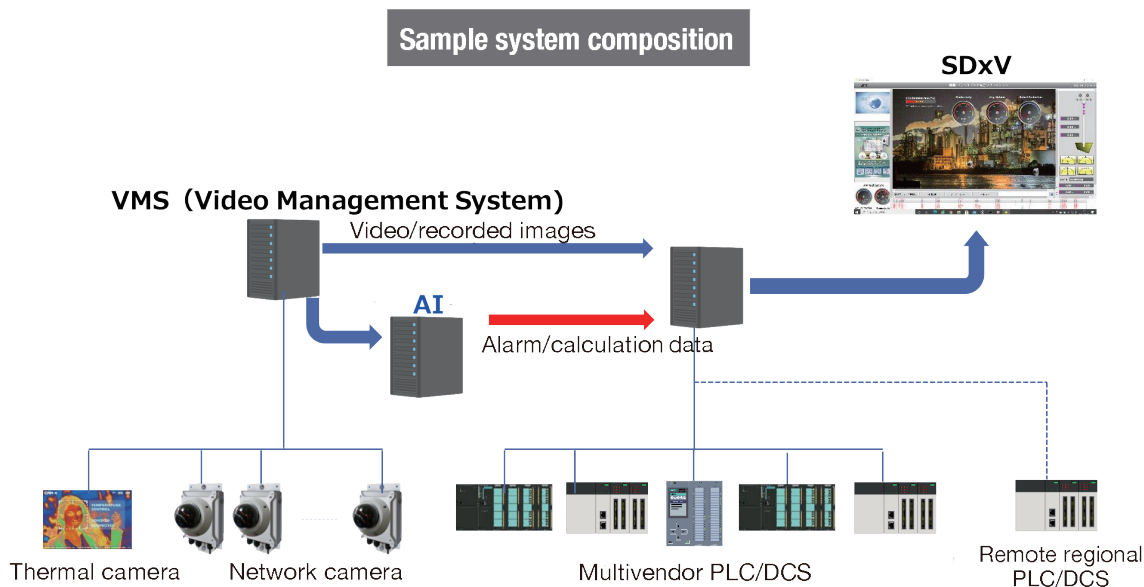
To meet the needs of diversifying markets and the increasingly sophisticated requests from customers, JFE Shoji is planning to introduce DX solutions that leverage the strengths of the JFE Shoji Group.

JFE Shoji Electronics Corporation, a subsidiary of JFE Shoji, began offering SDxV, a remote monitoring system that facilitates the integrated management of steel mills and other plant information, such as temperature and pressure as well as images from monitoring cameras, for the sake of transforming business and creating new value. The introduction of SDxV supports the centralized visualization of facilities and plant sites, not to mention the acquisition of useful information for AI-based abnormality detection and predictive maintenance.

We will continue to explore ways to provide innovative value to customers at the manufacturing sites through the use of DX.

## System Overview

- The Supervisory Control And Data Acquisition (SCADA) system, which supports the integrated management of various scattered data (e.g., control/plant operation status), is combined and synchronized with the display of images from optical cameras and thermal cameras on the same screen.
- Centralized visualization and monitoring as well as remote control of events occurring in the plant.



Please see the DX REPORT.

▶ [DX REPORT](https://www.jfe-holdings.co.jp/en/investor/library/dxreport/index.html) (https://www.jfe-holdings.co.jp/en/investor/library/dxreport/index.html)

## Promotion of Research and Development

### **ST** JFE Steel

Under the Seventh Medium-term Business Plan, JFE Steel is researching and developing innovative technologies for the steel manufacturing process for achieving carbon neutrality, such as CO<sub>2</sub> reduction technology, carbon-recycling blast furnaces and CCU, and hydrogen-based ironmaking (direct reduction). These technological developments leverage data science and robotics to closely align with the needs of customers and society at large.

In addition, JFE Steel is accelerating the introduction of new products and solutions for each field, with automobiles including EVs and new energy as key areas of R&D.

### **EN** JFE Engineering

JFE Engineering is promoting research and development with a focus on five key areas: waste to resource, carbon neutrality, composite utility services, core infrastructure, and DX as the technological foundation that supports these four business areas. The company is particularly focused on carbon neutrality, which includes manufacturing technology for monopile foundations for offshore wind turbines, CO<sub>2</sub> capturing technology from the exhaust gas of waste incineration plants, and methanol production technology from the captured CO<sub>2</sub>.

## Internal Awards

The following technical and product developments were awarded in FY2022.

### ■ Internal Awards (FY2022)

	Prize/Award	Project	Recipient
JFE Steel	Grand Prize/ Excellence Award, JFE Steel President's Awards	Automation of blast furnace operations through DX (CPS)	Cyber Physical Systems R&D Department, Steel Research Institute, etc.
		Establishment of DX infrastructure by fully opening the head office core system	IT Reform Department, etc.
		Popularization and sales expansion of high-strength spiral steel pipe piles in response to national land resilience	Building Materials Sales Department, Building Materials Center, etc.
		Development of long-life staves for blast furnaces and establishment of technology to optimize stove replacement methods	Facilities Department, West Japan Works (Kurashiki Area), etc.
		Improvement of work safety, security, and efficiency through a work support system	Environment and Disaster Prevention Department, West Japan Works (Fukuyama Area), etc.
JFE Engineering	Grand Prize, JFE Engineering President's Awards	Development of a high-precision gas demand forecasting model using WinmuSe®	Digital Transformation Headquarters

For more on the external awards, please refer to the following.

▶ [Eternal Awards](#) (P.259)