

STEEL
ENGINEERING
SHOJI TRADE



JFE Group
CSR REPORT 2018



Contents

- 02 JFE Group's CSR
- 03 Message from the CEO
- 05 Sixth Medium-Term Business Plan
- 07 JFE Group in Society
- 09 JFE Group Value Chain
- 11 Value of Steel
- 13 Material CSR Issues of the JFE Group

Management

- 19 CSR Management

Protecting the Environment

- 25 Environmental Management
- 29 Material Flow
- 31 Climate Change Mitigation
- 37 Protecting the Environment
- 39 Resource Recycling
- 42 Eco-friendly Products and Technologies
- 47 Environmental Communication

Contributing to Societal Development

- 49 Customers
 - 52 Suppliers
 - 53 Shareholders and Investors
 - 54 Local Communities
 - 57 Employees
-
- 64 External Awards
 - 66 Independent Assurance Statement
 - 67 Third-party Comments

Editorial Policy

This report provides stakeholders with information about the JFE Group's CSR activities and elicits feedback to support further enhancement of the company's activities and information disclosure. The 2018 report includes:

- Information regarding the formulation of the Sixth Medium-term Business Plan and setting of key performance indicators
- Confirmation of the status of initiatives for CSR issues, in relation to the value chain
- Expansion of the boundary for aggregating environmental data (water, wastes, PRTR and others)

CSR Report Composition and Format

CSR Report

([This report](#) and PDF)

Reader-friendly summary of CSR initiatives (print and PDF)

A detailed report on corporate governance can be found in the integrated report.



Environmental Data Book (Website)

Detailed environment data

Scope of Report

Reporting Period

FY2017 (April 1, 2017 to March 31, 2018)

Reports on some activities undertaken outside this period are included.

Organizations Covered

The report mainly covers the activities of JFE Holdings, Inc. and its three operating companies—JFE Steel Corporation, JFE Engineering Corporation and JFE Shoji Trade Corporation—but it also includes reports on activities of other companies in the JFE Group (379 companies, of which 312 are consolidated subsidiaries and 67 are equity-method affiliates).

Quantitative information includes data from the following the JFE Group's operating companies (see Environmental Data Book for a complete list of companies):

- JFE Steel group
 - “Environment and CO₂ Emissions” section: JFE Steel (non-consolidated) and 29 domestic and overseas subsidiaries
- Other environmental data: JFE Steel (non-consolidated) and 25 domestic subsidiaries
- JFE Engineering group
 - “Environment” section: JFE Engineering (non-consolidated) and 10 major domestic subsidiaries
- JFE Shoji Trade group
 - “Environment” section: JFE Shoji Trade (non-consolidated) and 33 major domestic and overseas subsidiaries

Reference Guidelines

GRI Sustainability Reporting Standards 2016

Ministry of the Environment (Japan): Environmental Reporting Guidelines 2012

Ministry of the Environment (Japan): Environmental Accounting Guidelines 2005

Publication Date

October 2018 (previous issue: October 2017; next issue: scheduled for October 2019)

Related Reports

The following information is available at www.jfe-holdings.co.jp/en

CSR (society and environment)

CSR reports (CSR Report and Environmental Data Book) in PDF format provide the latest information on CSR initiatives.

Company profile

Outline of the JFE Group, corporate governance, etc.

Investor information

JFE Group business information, financial data, stock and rating information, etc.

JFE GROUP Report (Integrated Report)

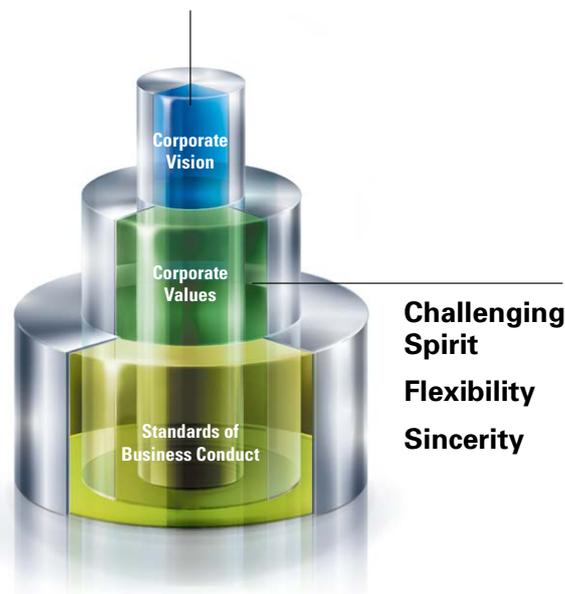
Financial information including the JFE Group's mid- to long-term business strategies, business performance, management strategies and non-financial information, including CSR activities, corporate governance, etc.

JFE Group's CSR

The JFE Group's corporate values and standards of business conduct are manifested in the company's vision of contributing to society with the world's most innovative technology. We proactively address critical issues regarding safety, disaster prevention, product quality, human rights, compliance and environmental protection.

The JFE Group considers the perspectives of all stakeholders, including customers, clients, shareholders, investors, community residents and employees, guided by a fair, objective and transparent system of corporate governance. In the spirit of its corporate values—Challenging Spirit, Flexibility and Sincerity—the JFE Group strives to earn society's trust by undertaking CSR with integrity.

**Contributing to society
with the world's most
innovative technology**



JFE Group Standards of Business Conduct

All JFE Group personnel are required to faithfully adhere to the following Standards of Conduct in all corporate activities. These standards embody the JFE Group's Corporate Vision and go hand in hand with its Corporate Values.

Senior managers are responsible for communicating these standards to employees of Group companies and their supply chain partners, and in creating effective systems and mechanisms to ensure adherence to ethical standards.

Senior managers are also responsible for measures to prevent the recurrence of any violation of these standards. Additionally, they must report violations promptly and accurately to internal and external stakeholders, determine the persons of relevant authority and accountability, and resolve matters rigorously.

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.

2. Be open to society

Disclose corporate information actively and engage in constructive dialogues with diverse stakeholders to enhance our corporate value.

3. Work with communities

Actively contribute to host communities as a good corporate citizen by emphasizing harmony and cooperation.

4. Globalize

Endeavor to achieve understanding with people around the world, working from a global perspective and with respect to international norms, and also local cultures and customs.

5. Exist harmoniously with the global environment

Actively work to exist harmoniously with the global environment, as well as to raise living standards and advance societies.

6. Maintain proper relations with governments and political authorities

Endeavor to build and maintain sound and proper relationships with governments and political authorities.

7. Maintain crisis readiness

Firmly resist all elements and organizations that threaten social order and stability, and refuse all illegal or improper demands. Also, contribute to order and safety in society by thoroughly and methodically preparing for crises such as terrorism, cyberattacks, natural disasters and others, including by ensuring the stable availability of products and services.

8. Respect human rights

Respect all employees and members of the general public as individuals and refrain from any discrimination in corporate activities.

9. Provide challenging work environments

Provide employees with attractive, safe, healthy and challenging work environments.

10. Comply with laws and ordinances

Comply with all applicable laws and ordinances, endeavor to compete fairly and freely, refrain from illegal business activities, promote sound business practices, and be faithful and sincere in all activities and dealings.

Leveraging the World's Most Innovative Value Chain Priorities to Contribute to



Eiji Hayashida

Representative Director, President and CEO of JFE Holdings, Inc.

Pursuing the JFE Group's Sustainable Growth and Contributing to Society's Sustainable Development

Amid a rapidly changing business environment, the JFE Group has strived to achieve sustainable growth and enhance its corporate value by committing to the vision "contributing to society with the world's most innovative technology" and by leveraging its technological advantages, diverse workforce and comprehensive strengths across a broad scope of business.

The current business environment in which we operate is showing steady economic growth in both domestic and international markets, despite the heightened risk of protectionist trading, originating from US policy. In addition, we are seeing structural changes underway in our staple industries, including the automobile and environmental energy sectors. Adapting to these changes and leveraging new and innovative digital technologies will naturally lead to new business opportunities and strengthen our competitiveness in the market. However, we cannot be too optimistic from a long-term perspective. Although international demand is expected to rise along with the economic growth of emerging countries, domestic demand is likely to decline slowly due to the population decrease. In addition, the actual implementations of global frameworks are coming to life in the effort to realize a sustainable society. The United Nation adoption of the Sustainable Development Goals (SDGs) and signing of the Paris

Agreement to control climate change are examples. The sustainable growth of the Group vitally depends on accurately discerning and quickly responding to these trends in our business environment.

We have been making steady progress on major initiatives defined in the Group's Medium-term Business Plan (FY2015–FY2017), including measures to strengthen the foundation for our domestic income in order to increase our market competitiveness. We have also been actively working on initiatives for strengthening corporate governance and environmental management to establish a corporate structure in order to ensure sustainable growth.

Sixth Medium-term Business Plan and Continuous Efforts in ESG-Related Activities

In April 2018, we announced our Sixth Medium-term Business Plan to guide our business operations for FY2018–FY2020. In accordance with the plan, we are taking full advantage of our technological capabilities, state-of-the-art technologies, Group coordination, and diverse workforce to advance strategically in growth areas. This will help to ensure our competitiveness in the prevailing business environment. Also, in terms of our medium-to-long-term effort to enhance our corporate value and contribute to the establishment of a sustainable society, this business plan places high priority on strengthening our corporate structure conducive to sustainable growth, especially through the continuous addressing of ESG issues.

Technologies According to Group and the Creation of a Sustainable Society

In “Environmental,” we have positioned environmental protection as one of the highest priorities. We are actively working on reducing our environmental load. Along with efforts to reduce CO₂ emissions and reuse water and energy in our steelmaking process, we are also developing and offering eco-friendly products, technologies and recycling solutions.

In “Social,” we are placing emphasis on securing and developing our human resources. We believe that we contribute to enriching society by developing and offering products and services that excel in functionality as well as quality, and this requires capable human resources. With initiatives such as workstyle changes, operational reforms, human resource development, knowledge transfer and diversity improvement, we are continually enhancing our workplace environment so that our diverse workforce can perform at its best. In addition, we believe that respect for human rights should be a fundamental component of our business management. To make our position clear, we have established the JFE Group Human Rights Basic Policy, to be adhered to by all affiliate companies, officers and employees.

In “Governance” as well we have introduced measures in the past to improve our governance structure. For example, we established our Basic Policy on Corporate Governance and Nomination and Remuneration committees, we began analyzing and evaluating the effectiveness of our board of directors and using the result to enhance the compositions of our board of directors and audit and supervisory board, and we have introduced the so-called “Medium-to-Long-term Performance-linked” remuneration for directors. Going forward, we intend to monitor these measures to confirm their effectiveness. In addition, we continue to introduce greater fairness and transparency into our management structure while at the same time further improving two-way communications with our stakeholders and effective information sharing.

Mission to Present the “Value of Steel” and CSR Initiatives in Our Value Chain

This report includes a new section dedicated to the value of steel. Its qualities, such as the plentiful supply of raw materials, high recyclability, low environmental impact and sustainability throughout its lifecycle are introduced in an organized manner. We hope that this will help stakeholders more accurately understand the value of steel. We believe that our mission is

to continue providing steel and in turn support the continual growth of the global economy. As such, we continue to work on advancing the material and further reducing its environmental impact.

In addition, to maintain the sustainability of the Group as a whole, it is extremely important to recognize and respond to the CSR challenges in each stage of our value chain, upstream to downstream, and distributed around the world. In this report, we have depicted our steelmaking, engineering and trading companies as well as associated suppliers, clients and societies as part of our value chain and identified CSR challenges associated with each of them and how they are currently being managed. We are constantly on the lookout for the latest information and technology and intend to continue this discipline of identifying challenges and expanding countermeasures toward ensuring the Group’s sustainability.

New Key Performance Indicators (KPIs) for Material CSR Issues

Last year, we identified and publicly announced our material CSR issues to ascertain issues along with the associated countermeasures and creation of opportunities that are the most impactful and meaningful to stakeholders and to understand how to more effectively allocate our corporate resource to bolster our value in society.

These material CSR issues were identified with consideration for corporate governance and respect for and awareness of human rights, and they clarify the Group’s priorities in five areas: providing quality products (customer satisfaction), protecting the global environment, ensuring occupational safety and health, recruiting and nurturing diverse human resources and thoroughly enforcing compliance.

In FY2017, we set up a KPI for each operating company to monitor progress against these material CSR issues. Each company will carry out activities to achieve these targets. We will manage and monitor CSR issues by effectively iterating through PDCA cycles.

Maintaining Public Trust

Under the Group vision of contributing to society with the world’s most innovative technology and through initiatives to address material CSR issues, we strive to maintain the sustainable growth of the Group, increase our corporate value and ensure the sustainability of the global society.

Sixth Medium-Term Business Plan

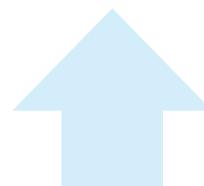
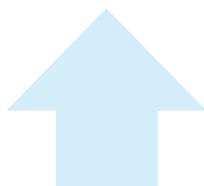
Maximizing Comprehensive Strengths to Make Great Leaps Forward

The JFE Group has announced its medium-term business plan, which lay out strategic guidelines for FY2018–FY2020. Under the plan, we will work on improving our corporate value and contributing to the development of a sustainable society, and in turn achieve our corporate vision of contributing to society with the world’s most innovative technology.

FY2018–FY2020

Sixth Medium-Term Business Plan

To respond to changes in the global society and remain competitive, we will strategically address growth areas by fully utilizing leading-edge technological capabilities, advanced IT, Group coordination and a diverse workforce.



FY2015–FY2017

Major Review of the Fifth Medium-term Business Plan toward Formulating a New Strategy

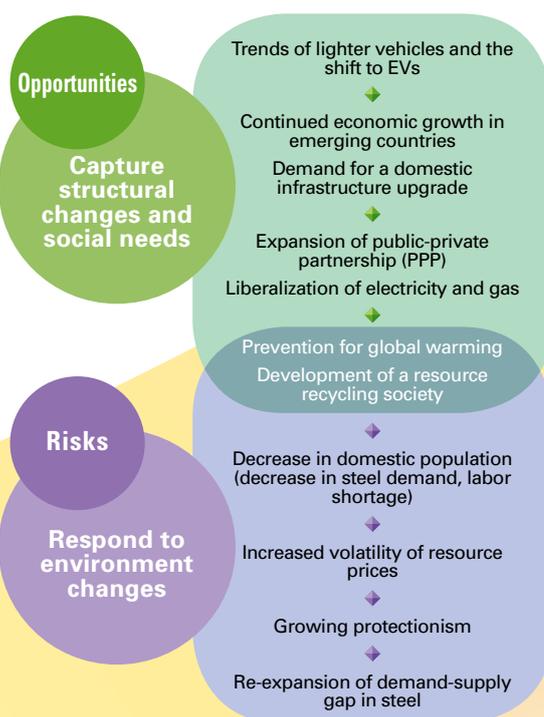
1 Improved competitiveness through persistent execution of major initiatives

- Measures to strengthen the domestic profit base to improve competitiveness
- Investments to develop new products and technologies from a medium to long-term perspective.

2 Strengthen the business structure for sustainable growth

- Strengthened corporate governance
- Execution of CSR initiatives

Recognizing the Operating Environment



Our Goal

Corporate Vision

Contribute to society with the world's most innovative technology

Be a corporation that, through our business operations, contributes to the development of a sustainable society while at the same time maintaining our own sustainable growth.

1 Pursue growth by meeting social needs with leading-edge technologies

2 Continue to expand the domestic profit base and strengthen manufacturing capabilities

3 Advance the overseas business and expand the overseas profit base

4 Strengthen the business structure for sustainable growth

Continuously address ESG issues

Environment

- ◆ Protect the global environment
 - Develop and provide eco-friendly products
 - Mitigate climate change
 - Protect the global atmosphere
 - Pursue resource recycling

Social

- ◆ Provide high-quality products and increase customer satisfaction
 - Stable supply products
 - Ensure quality
 - Pursue research and development
 - Respond to customer needs
- ◆ Ensure occupational safety and health
 - Prevent workplace accidents
 - Ensure the health of employees and their families
- ◆ Recruit and nurture diverse human resources
 - Pursue diversity and inclusion
 - Strengthen personnel development programs
- ◆ Thoroughly enforce compliance
 - Ensure adherence to Corporate Ethical Standards and compliance
- ◆ Respect for and awareness of human rights
 - Thorough understanding of human rights throughout our supply chain

Governance

- ◆ Corporate governance
 - Establishment of a fair, equitable, and transparent corporate governance structure

Set Key Performance Indicators (KPIs) and Develop Initiatives to Achieve Goals

Businesses to Ensure Sustainable Societies

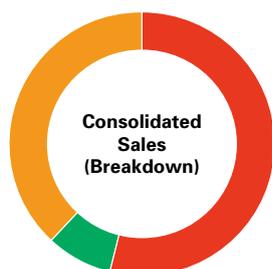
JFE Group in Society

Maximizing Corporate Value

JFE Holdings sets JFE Group strategies and procures funding as the holding company of the Group. It also is responsible for disclosing information to the public as a listed company. Each operating company, having developed systems suited specifically to its respective business, helps to maximize corporate value by emphasizing competitiveness and profitability aimed at sustainable growth.

Corporate Profile (as of March 31, 2018)

Company Name	JFE Holdings, Inc.
Head Office	2-2-3 Uchisaiwaicho, Chiyoda-ku, Tokyo 100-0011, Japan
Established	September 27, 2002
Capital	147.1 billion yen
Employees (consolidated)	61,234
URL	www.jfe-holdings.co.jp/en



3,678.6 billion yen

- Steel Business
54.1% (2,715.4 billion yen)
- Engineering Business
7.8% (391.3 billion yen)
- Trading Business
38.0% (1,907.9 billion yen)

Adjustments for intra-Group transactions totaled -36.3% (1,336.1 billion yen), including internal sales or transfers between segments amounting to 998.4 billion yen in steel business, 10.3 billion yen in engineering business and 327.3 billion yen in trading business.

Steel Business

- JFE Steel Corporation
- Head Office: Chiyoda-ku, Tokyo
- Sales (consolidated): 2,715.4 billion yen
- Ordinary Income (consolidated): 198.3 billion yen*
- Employees (consolidated): 44,554

*Consolidated ordinary income increased by 27.399 billion yen in fiscal 2017 due to the change in the depreciation method for property, plant and equipment (excluding leased assets) from the declining balance method to the straight-line method.

High-performance Products that Respond to Customer Needs

JFE Steel, one of the world's leading integrated steel producers, operates a highly competitive production system consisting of two major steelworks, one each in eastern and western Japan. The company's value-added products reflect JFE Steel's sophisticated technologies and development.

Contributions to Sustainability

- S-1** Development of high-performance steel materials that reduce environmental impact and energy-conserving products
- S-2** Development and global deployment of energy-saving technologies for manufacturing
- S-3** Steel scrap recycling and effective utilization of iron and steel slag



JFE technologies developed mainly for steelmaking are being used worldwide for new applications in energy, resource recycling and more. JFE is now leveraging innovative world-class technologies from its three core businesses—steelmaking, engineering and trading—to advance sustainable societies worldwide.

Engineering Business

- JFE Engineering Corporation
- Head Offices: Chiyoda-ku, Tokyo and Yokohama, Kanagawa Prefecture
- Sales (consolidated): 391.3 billion yen
- Ordinary Income (consolidated): 19.3 billion yen
- Employees (consolidated): 9,307



Innovative Technologies for Energy and the Environment

JFE Engineering's core businesses in urban infrastructure and energy are underpinned by advanced technologies for resource conservation and clean energy. JFE Engineering develops infrastructure by leveraging its specialized expertise in industrial machinery and steel structures, such as bridges.

Trading Business

- JFE Shoji Trade Corporation
- Head Offices: Osaka and Chiyoda-ku, Tokyo (relocated to Chiyoda-ku in October 2018)
- Sales (consolidated): 1,907.9 billion yen
- Ordinary Income (consolidated): 33 billion yen
- Employees (consolidated): 7,333



Creating Value as a Core Trading Company of the JFE Group

JFE Shoji Trade engages in trading in Japan and the import/export of steel materials as well as steel raw materials, non-ferrous metals, chemicals, fuels, materials and machinery, and marine vessels. The company also operates businesses in the food and electronics fields.

Contributions to Sustainability

- E-1** Use of renewable energies
- E-2** Expansion of waste recycling
- E-3** Construction of waste-to-energy plants and infrastructure
- E-4** Protection of marine ecosystems

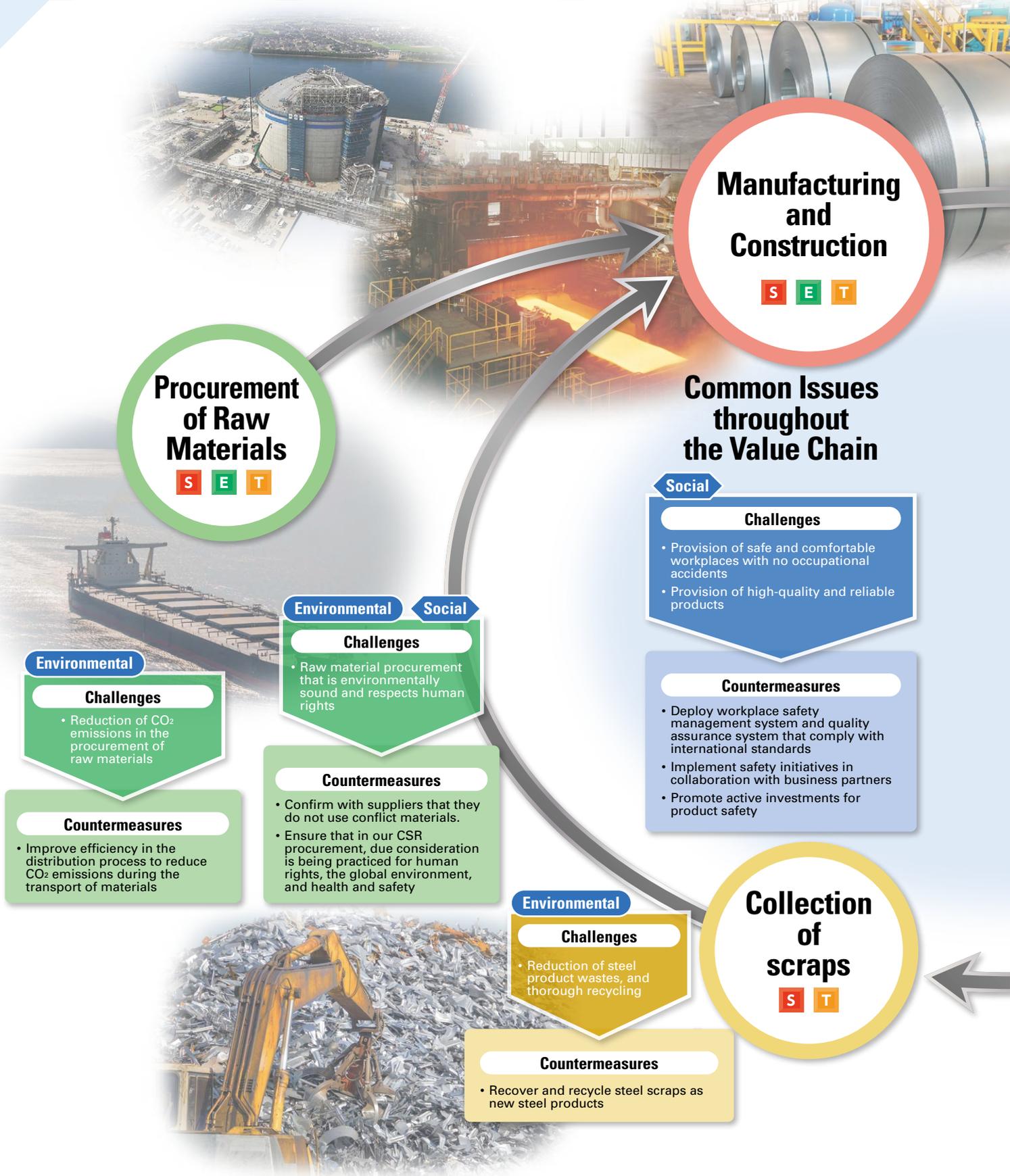
Contributions to Sustainability

- T-1** Products that reduce both environmental impact and energy consumption
- T-2** Energy-saving transport solutions
- T-3** Resource recycling on a global scale

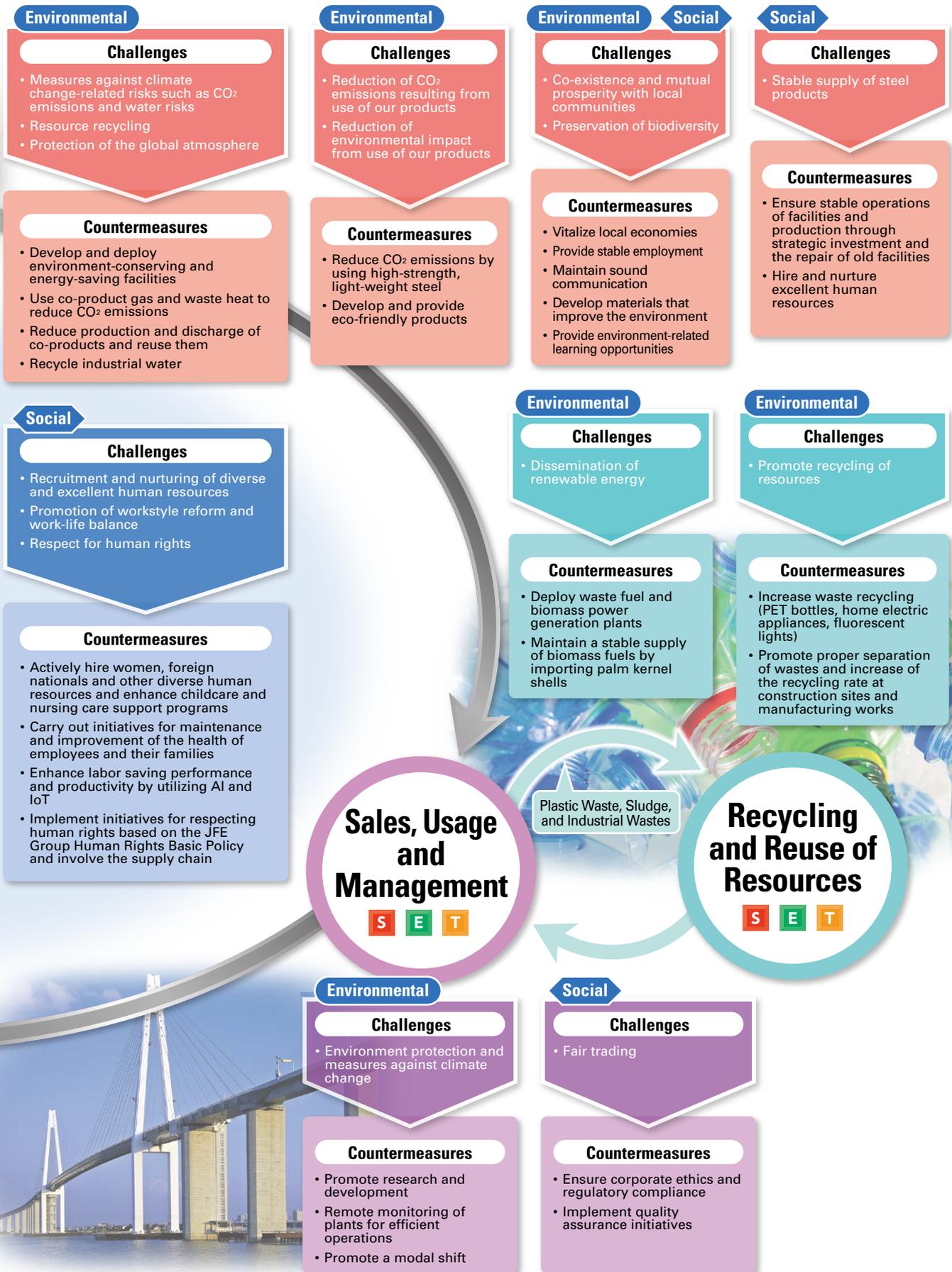


JFE Group Value Chain

S JFE Steel Corporation **E** JFE Engineering Corporation **T** JFE Shoji Trade Corporation



The JFE Group seeks to recognize and respond accurately to the CSR challenges faced by all parts of our value chain across the world. We will continue to implement further countermeasures throughout our value chain and strengthen the sustainability of the entire Group.



Value of Steel

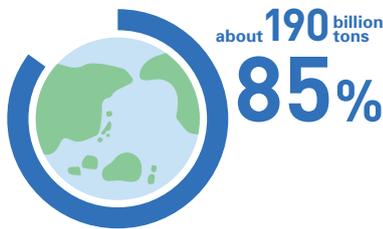
Steel can be mass produced at very low cost, with little fear of exhausting this material since iron ore reserves are plentiful. Steel is extremely important for building a civilized society because the environmental load at the time of its production is predominantly lower than that for other materials. It is also highly recyclable and can be used to make high-quality and highly functional products at very reasonable costs. No other material exhibits all of these qualities.

Iron, a Sustainable Material

Plentiful Reserves of Iron Ore

Iron ore reserves (190 billion metric tons) represent 85% of the Earth's metal resources. While supply is ultimately limited, the likelihood of depletion is much lower than that for other natural resources, and we can anticipate a stable supply.

World's Iron Ore Reserves

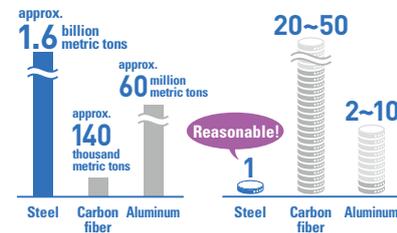


Source: Mineral Commodity Summaries (2016)

Mass Production Possible at Low Cost

Plentiful reserves and long years of technological development allow for mass production at low cost with a stable supply of products. Steel can be processed into products with a variety of functionalities at reasonable cost.

Global Demand (2016) ■ Cost*



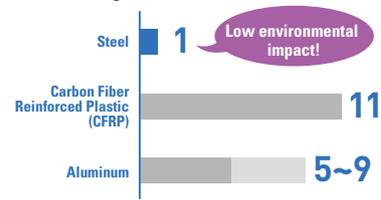
Data from Mizuho Bank Industry Research Division and the prospects by the Fuji Keizai Group

Research: JFE Holdings
*Cost of producing one unit weight of iron is indexed at 1 for comparison with other materials.

Predominantly Lower Environmental Impact during Production

Steel can be produced with a predominantly lower environmental load compared to other materials. For example, greenhouse gas (GHG) emissions from aluminum production*¹ are 5 to 9 times higher compared to steel production, and carbon fiber reinforced plastic (CFRP) is 11 times higher.

GHG during Production*²



Source: Steel Recycling Institute

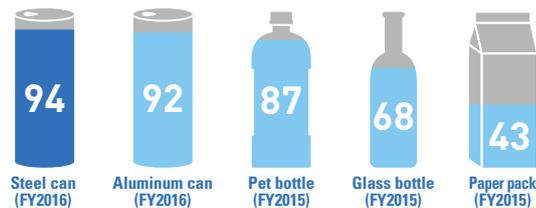
*1 GHG gas emitted from ore extraction to shipping.

*2 CO₂ emission resulting from producing one unit weight of steel is indexed as 1 for comparison with other materials.

High Recyclability

Steel can be easily separated and recycled. Even after a final product reaches its end of life, steel scraps can be brought back into steel production and reused to make new products without any loss of quality through repeated cycles (closed-loop recycling).

Recycling Rate by Item (%)

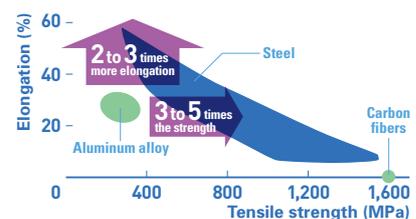


Source: Steel Can Recycling Association

Limitless Potential

Steel plates and rods are made of iron and carbon with hardness adjustable up to 40 times. With 2 to 3 times more elongation than aluminum of the same hardness, and while maintaining the same elongation it is possible to adjust its hardness by 3 to 5 times. It has been used in many examples of contemporary world-class architecture, including TOKYO SKYTREE. The toughness of steel is produced by applying heat treatment until it glows and then rapidly cooling it. Making small adjustments to this simple process alone holds many possibilities for producing new steel characteristics. As society has advanced, steel has become stronger and more flexible. The emerging needs of society will shape the future of steel, and the evolution of steel will shape a prosperous future society.

Comparison of Tensility and Hardness between Steel, Aluminum and Carbon Fiber



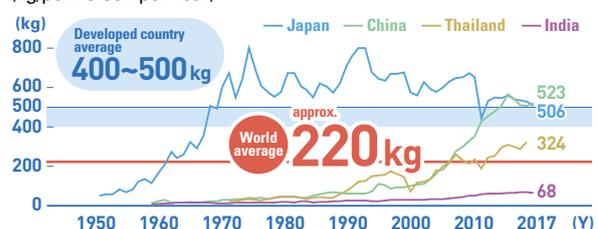
Research: JFE Holdings

Demand for Steel Will Continue to Grow Worldwide

Global-scale Growth Potential

With the economic growth of emerging countries, we expect global demand for steel to continue to rise over the long term. The annual steel consumption of developed countries remains steady in the 400 kg to 500 kg per capita range, although the global average is still around 220 kg per person, leaving ample room for growth.

Yearly Change in Annual Steel Consumption per Capita per Country (kg/per Person per Year)



Source: World Steel Association

Steel has excellent workability with properties that can be easily modified by adjusting its composition and applying different heat treatments during production. Therefore, new functionalities and applications can be developed for steel, making it possible to create new value to meet the needs of society and our customers while also enabling us to continue contributing to various industries and evolving lifestyles. We expect that demand for steel will continue to increase worldwide as emerging markets show steady growth.

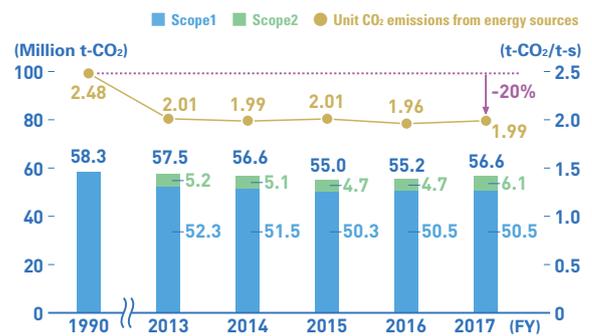
Energy-conserving and CO₂-reducing Initiatives

Attempting to Create a Steel Industry with Low Environmental Impact (Measures against Climate Change)

The steel industry in Japan, which the JFE Group is a part of, for many years has been aggressively developing new technologies and measures to protect the environment, resulting in state-of-the-art techniques for saving energy and reducing CO₂ emissions. The JFE Group is effectively managing its environmental risks using these technologies. We also consider these technologies and products as the source of our competitive advantage and expect that expanding their scope to the global market will lead to our own sustainable growth.

Nevertheless, the process for mass producing steel is still heavily dependent on the use of coal, not as a fuel but as a reducing agent to remove oxygen from the iron ore. There is no alternative at this time and hence steelmaking still generates CO₂. Therefore, one of our top priorities is to come up with additional measures to reduce its environmental impact further in order to maintain the sustainability of our future business. The JFE Group is leveraging its technologies, which are the world's most innovative, to address climate change and other global environmental issues through initiatives such as development and dissemination of innovative steelmaking processes.

■ CO₂ Emissions from Energy Sources and Unit CO₂ Emissions of JFE Steel



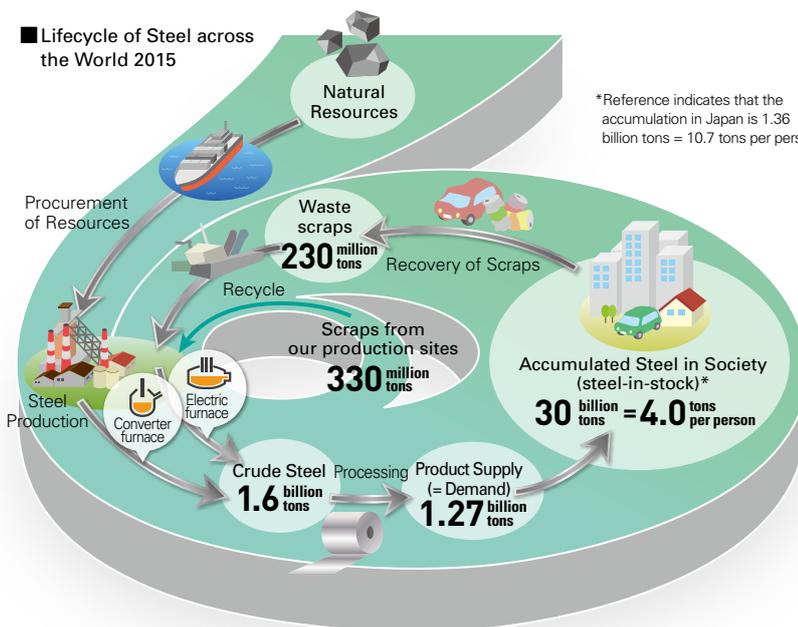
Sustainability of Steel at Every Stage of its Lifecycle

Supporting the World's Sustainable Growth with a Low Environmental Impact during the Production, Usage and Recycling Stages

Even after having contributed to society as a final product or a part of an infrastructure, steel can be recycled many times. However, keeping up with the rising world population and associated demand, as well as the increase in accumulated steel stock in emerging countries, still requires steel production (converter furnace steel) using natural resources (iron ore and coal). Japan's steel industry prides itself in having the lowest

impact on the environment in the world in its steelmaking. As a member of that industry, we will continue to further improve the efficiency of the steel production process (eco-process), disseminate these technologies to the world (eco-solution) and provide high-performance products with low environmental impact (eco-products). This is how the JFE Group will contribute to the creation of a sustainable society.

■ Lifecycle of Steel across the World 2015

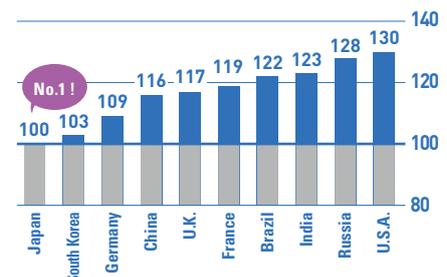


Source: Steel Can Recycling Association and Bureau of International Recycling aisib
Note: Some details have been omitted, such as lost scraps or types of scrap

Energy Efficiency in Japanese Steel Industry Is Number One in the World

As a result of many years of environmental protection efforts, including development and dissemination of energy-saving technologies, the Japanese Steel Industry (converter furnace steel) is capable of producing steel with the lowest environmental impact amongst other major steel producing countries in the world.

■ Comparison between Countries with Japan Indexed as 100 (2015)



Source: Research Institute of Innovative Technology for the Earth (RITE)

Material CSR Issues of the JFE Group

Identifying Material CSR Issues in FY2016

STEP 1 Identification

By measuring the businesses of the JFE Group against the following yardsticks, we have identified 35 core issues with respect to society's expectations for our CSR initiatives:

- GRI G4 Sustainability Reporting Guidelines
- ISO 26000
- Sustainability Development Goals (SDGs)
- ESG survey via external assessment
- Internal documents on employee satisfaction surveys, etc.
- Benchmark surveys conducted individually for the Steel, Engineering and Trading Businesses

■ 35 Core Issues

Economy

- 1 Thorough compliance
- 2 Appropriate disclosure
- 3 Corporate governance
- 4 CSR management
- 5 Customer satisfaction
- 6 Supply chain management
- 7 Risk management
- 8 Transparent resource development
- 9 Tax management
- 10 Financial performance improvement
- 11 Innovation management
- 12 Provision of quality products
- 13 Information-security management

Environment

- 14 Environment management
- 15 Financial benefits through environmental investment
- 16 Eco-friendly products
- 17 Global warming mitigation
- 18 Energy efficiency improvement

- 19 Efficient use of water resources
- 20 Air pollutant emissions control
- 21 Resource recycling
- 22 Biodiversity
- 23 Renewable energy
- 24 Chemical substances management and release control

Society

- 25 Occupational safety and health
- 26 Stakeholder engagement
- 27 Sound labor-management relations
- 28 Respect for human rights
- 29 Human resources diversity
- 30 Fair evaluation and compensation for employees
- 31 Securing and cultivating outstanding human resources
- 32 Employee satisfaction improvement
- 33 Societal contributions through business
- 34 Societal contribution activities
- 35 Work-life balance

STEP 2

Prioritization Group-wide Meeting

The 35 core issues identified in STEP 1 are prioritized in two ways:

- (1) Vertical axis: Stakeholder expectations
- (2) Horizontal axis: Relevance to business (societal impact)

(1) The vertical axis measured the effect of stakeholder impact on decision-making and (2) the horizontal axis measured the effect of a special Group-wide review meeting. Through this process, we identified 13 issues in five focus areas.

Group-wide Meeting to Prioritize Material CSR Issues

Managers from each operating company discussed the prioritization of the 35 core issues from the perspectives of group management and their respective operating companies' interests.



Evolving environmental and societal issues are creating increasingly complex challenges for companies. In FY2016, the JFE Group identified material CSR issues that strongly impact where and how the company should invest its resources, making every effort to minimize negative societal impact and maximize the societal value as only the JFE Group can. In FY2017, we set key performance indicators (KPIs) to implement PDCA cycles for its initiatives.

Setting KPIs in FY2017

STEP 3 Validation

The following process validated 13 material CSR issues in five focus areas:

- Confirmation and examination by each operating company
- Two-stage examination and approval by JFE Group CSR Council*

*Participants included the president of JFE Holdings (chairperson), executive vice president, corporate officers, full-time Audit & Supervisory Board members, and the presidents of operating companies, etc.



Setting KPIs in FY2017

STEP 4 Review Setting KPIs

Material CSR issues were identified and reviewed through the following process.

- Reviewed by the JFE Group CSR Council
- Examined comments by third-party experts on the CSR report

KPIs were set to confirm the progress of initiatives and to implement PDCA cycles.

- Each operating company conducted a review while taking into consideration the results of previous reviews
- Draft KPIs were submitted to the Group Environmental Committee
- KPIs were deliberated on and approved by the CSR Promotion Conference

Management

Protecting the Environment

Contributing to Societal Development

Identified Material CSR Issues

Five areas of focus and 13 specific issues were identified as material CSR issues. Going forward, the JFE Group will respect human rights as a fundamental aspect of its business and activities contributing to society and will advance its efforts to address these material CSR issues based on fair and transparent corporate governance. Such initiatives will demonstrate the Group’s vision of “Contributing to society with the world’s most innovative technology” and will contribute to its sustainable growth as well as the sustainability of society.

Corporate Vision: Contributing to Society with the World’s Most Innovative Technology



Areas of Focus		Details	Scope of Influence	Material CSR Issues
Activity	Provide quality products (customer satisfaction)	<ul style="list-style-type: none"> Provide products and services based on advanced technologies - Continue stable supply of safe, high-quality products - Solve customer problems 	JFE Group Customers Society	Stably supply products
				Ensure quality
				Pursue research and development
				Respond to customer needs
	Protect the global environment	<ul style="list-style-type: none"> Mitigate environmental impact Contribute to recycling societies Utilize Group technologies to develop products that contribute to environmental protection 	JFE Group Local communities near manufacturing sites Customers Society	Develop and provide eco-friendly products
				Mitigate global warming
				Protect the global atmosphere
				Pursue resource recycling
	Ensure occupational safety and health	<ul style="list-style-type: none"> Prioritize safety first Maintain the physical and mental health of employees and their families and create rewarding workplaces 	JFE Group Suppliers Business partners	Prevent workplace accidents
				Ensure the health of employees and their families
	Recruit and nurture diverse human resources	<ul style="list-style-type: none"> Maintain work environments where all personnel can maximize their abilities Accumulate and hand down technologies and skills 	JFE Group Business associates	Pursue diversity and inclusion
				Strengthen personnel development programs
	Basis of activity	Thoroughly enforce compliance	JFE Group Suppliers Political authorities Society	Ensure adherence to Corporate Ethical Standards and compliance



Corporate Governance (Ensure Fairness, Objectivity and Transparency)

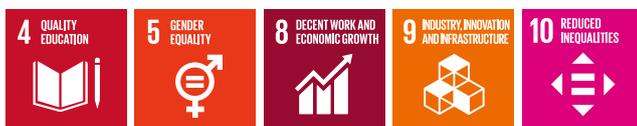
Respect and Maintain Awareness of Human Rights

Contributing to the Sustainable Development Goals (SDGs)

In September 2015, a UN Summit adopted 17 SDGs to be addressed through worldwide efforts to achieve sustainable development. The JFE Group is responding to this call through contributions achieved by its business activities.



Relevant SDGs



Increased corporate value and sustainable growth

Goals

Help realize sustainable societies

Material CSR Issues of the JFE Group

KPIs for Material CSR Issues

The JFE Group has set KPIs for FY2017 to assess progress for the material CSR issues we identified in FY2016. These KPIs take into consideration the business characteristics of each operating company to facilitate PDCA cycle and effective CSR management.

Areas of Focus		Material CSR Issues	KPI			
			JFE Steel	JFE Engineering	JFE Shoji Trade	
Activity	Provide quality products (customer satisfaction)	Stably supply products	Make steady progress on strengthening its manufacturing base to ensure stable supply	Secure a stable number of certificated managing engineers	Make consistent investment in processing and distribution operations	
		Ensure quality	Improve the level of quality assurance and product testing	No major quality problems	Conduct quality audits on affiliate companies	
		Pursue research and development	Make consistent or increased investment in research and development		—	
		Respond to customer needs	Build infrastructure that improves customer satisfaction, and strengthen training for sales personnel	Use data collected from customer surveys to enhance customer satisfaction	Invest in the development of strong sales personnel	
	Protect the global environment	Develop and provide eco-friendly products	Expand the eco-friendly products and technological offerings	Contribute to climate change mitigation through our products and services (evaluated by the amount of CO ₂ (t) reduced per year)	—	
		Mitigate climate change	<ul style="list-style-type: none"> CO₂ reduction goal defined in the Japan Iron and Steel Federation's "Low-Carbon Society Implementation Plan" (P. 33) Continue to invest in energy conservation 		—	
		Protect the global atmosphere	Continue to work on keeping NOx and SOx emissions at low levels	—	—	
		Pursue resource recycling	Maintain the efficient use of water	<ul style="list-style-type: none"> Recycle at least 99.5% of rubble Recycle at least 95.0% of sludge Recycle at least 85.0% of industrial waste 	Global recycling of steel scraps	
	Ensure occupational safety and health	Prevent workplace accidents	Workplace fatalities: zero occurrences			
		Ensure the health of employees and their families	Provision rates of health guidance* (by 2020) 🇸 35% 🇪 35% 🇯 40%			
			Rate of health examination for dependents: 60% (by 2020)			
	Recruit and nurture diverse human resources	Pursue diversity and inclusion	Ratios for female recruits 🇸 At least 35% in career-track white-collar positions, more than 10% in career-track technical positions, more than 10% in on-site positions 🇪 At least 20% in career-track positions, at least 5% in production/construction positions (technical) 🇯 At least 25% in career-track positions			
			Females in managerial positions: triple the 2014 figure (by 2020)			
		Strengthen personnel development programs	Improve technical skills and conduct high-quality training programs 100% attendance from the target audience for human rights awareness training			
Basis of activity	Thoroughly enforce compliance	Ensure adherence to corporate ethical standards and compliance	Steady execution of training to foster and maintain a sense of compliance Improve employee awareness of ethics reflected in the Corporate Ethics Awareness Survey			

*The health guidance program is aimed at employees who are over 40 years of age and at their spouses, to help prevent the occurrence and aggravation of lifestyle diseases.

	Initiatives			Page Number
	JFE Steel	JFE Engineering	JFE Shoji Trade	
<ul style="list-style-type: none"> Strengthen productivity by increasing capability and maximizing performance Strategic investment and upgrades/ ongoing maintenance of old facilities 	<ul style="list-style-type: none"> Secure licensed personnel resources through mid-career hiring Encourage employees to acquire qualifications by granting expenses 	<ul style="list-style-type: none"> Consistent investment in processing and distribution operations 	50	
<ul style="list-style-type: none"> Develop advanced manufacturing technologies; build a quality assurance system with advanced sensors for process monitoring and high-precision equipment for product testing 	<ul style="list-style-type: none"> Conduct inspections by specialists at each phase of plant construction projects Conduct witness inspections immediately prior to delivering to customers 	<ul style="list-style-type: none"> Conduct quality audits at least once a year 	49	
<ul style="list-style-type: none"> Work on technological developments that leverage data science and robotics and meet the needs of customers and society Plan to invest 110 billion yen in its research and development efforts over the span of three years, starting in 2018 	<ul style="list-style-type: none"> Develop its own combustion technology for waste-treatment and power-generation facilities Develop technologies that collect and analyze data from the various types of plants it operates in Japan as well as technologies that leverage AI to automate plant operations 	—	51	
<ul style="list-style-type: none"> First successful application of AI in system maintenance in domestic industry to shorten recovery time of steel manufacturing facilities Establish testing and research facilities that allow collaboration with customers on product development 	<ul style="list-style-type: none"> Use customer surveys, interviews and construction evaluation forms to collect and assess data on the company's construction management, product quality, advanced technologies and innovation; each division analyzes and applies data for quality improvement, new product development and the overall strengthening of after-sales service 	<ul style="list-style-type: none"> Human resource development through skill training Invite selected overseas employees for joint training in Japan 	50–51	
<ul style="list-style-type: none"> Crack arrest technology, ECOGAL Neo™, 1.5 GPa-grade cold-rolled steel plate for automobiles, JNP™ Series Electrical Steel Sheet, radiant tube burner with effluent gas recirculation, Super-SINTER™, etc. 	<ul style="list-style-type: none"> Contribute to reducing CO₂ from society through our customers' business operations by offering them our eco-friendly products and technologies, including technologies that leverages renewable energy and energy-saving products 	—	31–36 42–46	
<ul style="list-style-type: none"> Three Ecos and development of revolutionary steelmaking processes (COURSE50, Ferro Coke) 		—		
<ul style="list-style-type: none"> Deploy and maintain desulfurization and denitration devices in sintering plants, which are the major sources of SO_x and NO_x emissions Install low-NO_x burners in reheat furnaces; continue switching to low-sulfur fuels 	—	—	37	
<ul style="list-style-type: none"> Actively recycle and cascade the large amount of water used in steelmaking, e.g., cooling, after thorough purification processes such as biological and chemical wastewater treatments 	<ul style="list-style-type: none"> For the disposal of industrial wastes mainly generated at construction sites, select disposal companies who are highly reputed for their appropriate waste separation processing and recycling rate 	<ul style="list-style-type: none"> Scraps are sold in the domestic market and exported to Asian countries for both offshore and domestic trading; introduction of the new container loading system allows for timely shipments of small slots and contributes to emerging recycling societies in Asia 	39–41	
<ul style="list-style-type: none"> Follow the basic strategies; promote the autonomous resolution of issues, strengthen health and safety at business associates and Group companies, and develop activities in line with the Group's Health Declaration; implement an internal audit system; and obtain ISO(JIS)45001 certification 	<ul style="list-style-type: none"> Establish "priority items to be shared across the company" which is to be adhered to by all employees and associated companies and promote "identification of sources of danger and safety measures based on risk assessments" in accordance with each operation. Receive OHSAS18001 certification in Tsurumi and Tsu manufacturing sites as well as domestic and offshore construction sites. 	<ul style="list-style-type: none"> Work on activities such as 1) strengthening the on-site patrol, 2) establishing safety monitors, 3) enforcing risk assessment and hazard prediction, and 4) identifying unsafe operations 	61–62	
<ul style="list-style-type: none"> Partner with health insurance union and industrial health staff to strengthen employee health Maintain and promote the health of employees' families 	<ul style="list-style-type: none"> In addition to employees themselves, encourage their spouses to also undergo health examinations Establish the JFE Group Health Declaration 		62	
<ul style="list-style-type: none"> Company policy explained by the president Implement various initiatives to support women in their professional development Organize diversity promoting activities such as rank-based training and women's exchange meetings and share and implement best practices across the Group Establish company-operated childcare facilities and conduct nursing care seminars 	<ul style="list-style-type: none"> The company president has endorsed the Declaration on Action introduced by a group of male leaders in Japan who intend to create "A Society in which Women Shine" with the support of the government's Cabinet Office Gender Equality Bureau Each operating company to establish a Diversity Promotion Section Invite employees from offshore affiliate companies to join training at the main office Enhanced training programs to support career development Create flexible working environment by introducing working at home, expanding nursing care support, encouraging employees to take paid leaves and other efforts 		57–61	
<ul style="list-style-type: none"> Use employees' skill data based on an updated evaluation system 	<ul style="list-style-type: none"> Training opportunities and in-house recruitment 	<ul style="list-style-type: none"> Diverse measures for employee development in line with the philosophy and basic policies for human resource development 	59, 61	
<ul style="list-style-type: none"> Conduct various types of human rights training 			21–22, 57	
<ul style="list-style-type: none"> Conduct training sessions on topics such as antitrust act and laws against bribery of public officials via e-learning, guidebooks, and reading sessions of guidebooks 			19	
<ul style="list-style-type: none"> Conduct the Corporate Ethics Awareness Survey 			–	

Management

Protecting the Environment

Contributing to Societal Development

CSR Management

Corporate Governance System Outline

● Governance System

JFE Holdings and each operating company has an Audit & Supervisory Board. The companies are crosschecked by the Board of Directors, which supervises operational execution, and the Audit & Supervisory Board, which conducts audits. Also, a corporate officer system separates decision making and execution to clarify authority and responsibility as well as to accelerate execution.

JFE Holdings' Board of Directors is responsible for maintaining and enhancing management efficiency and passing resolutions as legally required, laying down key management policies and strategies and supervising operational execution. The Audit & Supervisory Board oversees management for the purpose of strengthening its soundness.

For more details regarding our corporate governance, please refer to the JFE GROUP REPORT (Integrated Report), first published in FY2018.

JFE CSR System

The JFE Group considers corporate social responsibility (CSR) to be the foundation of its business as it contributes to the realization of a better society.

The Group CSR Council is chaired by the company president and convenes quarterly. Through its Group-wide internal units, comprising the JFE Group Compliance Committee, JFE Group Environmental Committee and JFE Group Internal Control Committee, the council discusses each activity. Furthermore it monitors, guides and supervises the wide range of JFE Group CSR activities such as compliance, the environment, human resources, safety, disaster prevention, social contribution and regulations for addressing antisocial forces.

Compliance

In expanding our businesses in Japan and abroad, it is important that the JFE Group maintains relationships of trust with all stakeholders, including its customers, shareholders and local communities. Trust can only be built upon a strong foundation of "Ensuring Thorough Compliance." Misconduct and scandals resulting from compliance violations can instantly shatter the trust

that has taken many years to establish.

Therefore, the JFE Group believes it is extremely important that all members of the organization deepen their knowledge and awareness of compliance and perform their jobs accordingly. The Group conducts training on various topics such as antimonopoly law and laws prohibiting bribery of public officials via e-learning, guidebooks, guidebook reading sessions and other means.

Risk Management System

JFE Holdings is responsible for comprehensive risk management in accordance with its Basic Policy for Building Internal Control Systems. The JFE Group CSR Council collects specific information for the purpose of reducing the frequency and impact of risks. The executive officers responsible for risk works to identify potential risks associated with their business activities, ethical and regulatory compliance, and the disclosure of financial reports and information. If potential risks are identified, they are assessed to determine if there is a need for further examination or the deployment of countermeasures.

Internal Controls

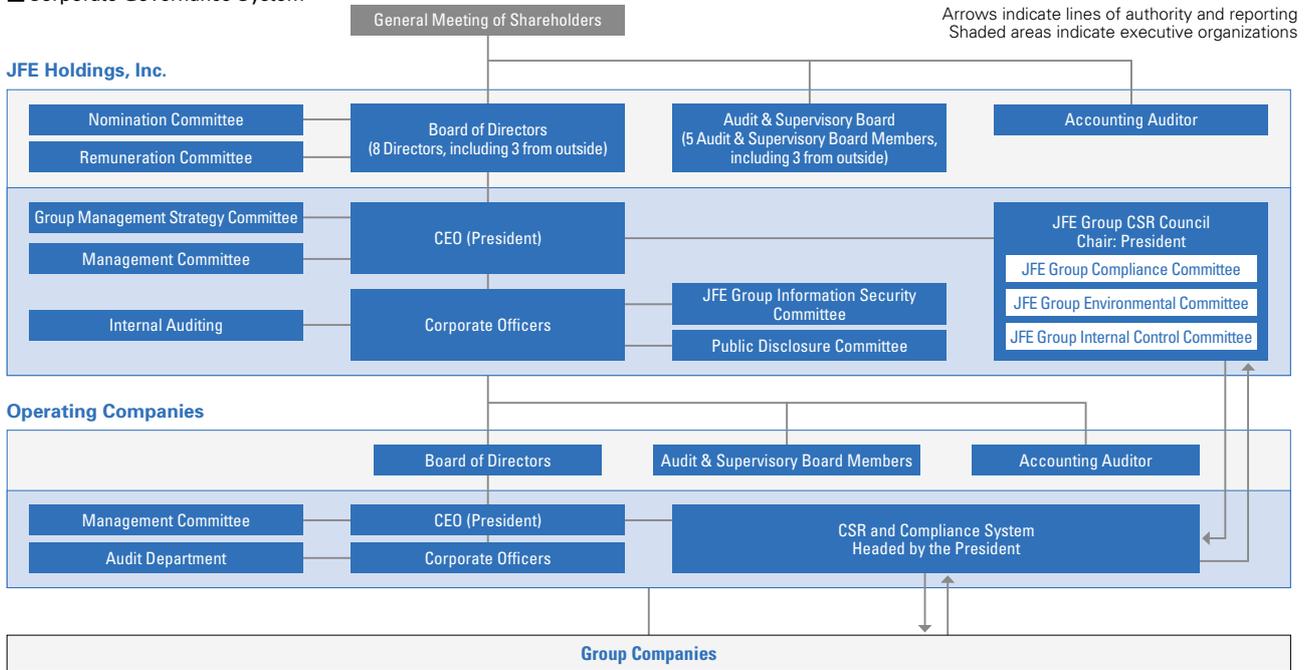
The JFE Group's internal control system, in accordance with the Basic Policy for Building Internal Control Systems, is maintained through various committee regulations including the Rules of the Board of Directors, Regulations for Group Management Strategy Committee, Regulations for Management Committee, Regulations for the JFE Group CSR Council, Regulations for Organization and Operations, Regulations for Document Management, Regulations for Addressing Violence Directed at Companies, and the installation of Corporate Ethics Hotline. The Basic Policy for Building Internal Control Systems is revised and improved from time to time to boost sustainable corporate value.

● Internal Audits/CSR Audits

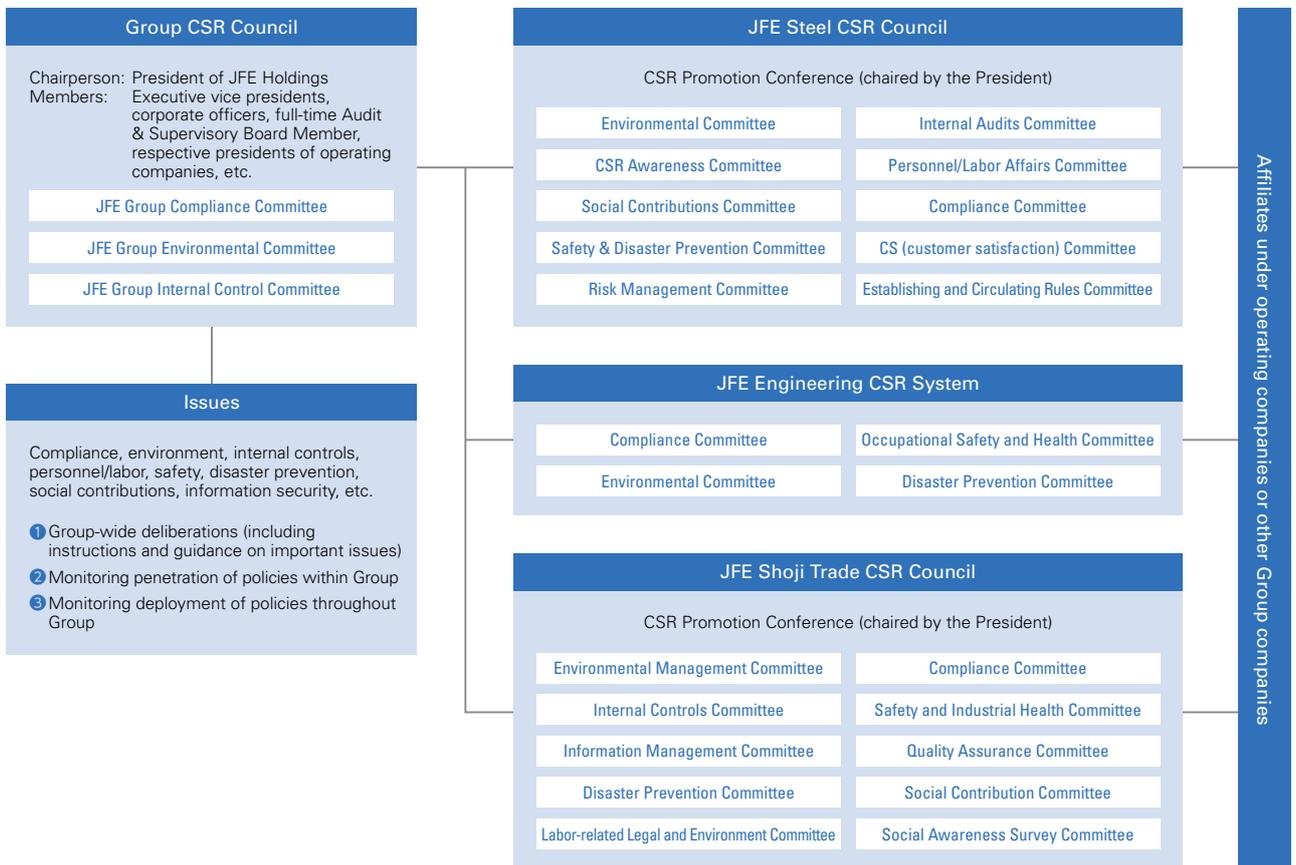
JFE Holdings, its operating companies and key Group companies has established internal audit organizations, comprising 161 people as of April 1, 2018. These organizations share information to enhance overall auditing within the Group.

To ensure that CSR activities are conducted properly, the JFE Group systematically audits

■ Corporate Governance System



■ CSR Structure



Management

Protecting the Environment

Contributing to Societal Development

environmental management, Antimonopoly Law compliance, expense management, overseas office management, tax law compliance, safety management and disaster prevention.

If an audit reveals a problem, the internal audit departments of JFE Holdings and relevant operating companies share information to support the implementation of corrective measures.

Respect for Human Rights

● Basic Policy

The JFE Group has for many years observed respect for human rights through its Standards of Business Conduct, which mandate respect for individuals in the Group and greater society as well as nondiscrimination in all corporate activities.

Alongside the globalization of recent years, companies must emphasize respect for human rights not only for their employees but also for members of their supply chains. In view of the overseas projects that Group companies are increasingly pursuing, additional provisions are now required to ensure that we respond to the needs of our many stakeholders and conduct our business in line with international norms, such as the United Nations' Guiding Principles on Business and Human Rights.

● Establishment of the JFE Group Human Rights Basic Policy

To enhance our respect for human rights, we established the JFE Group Human Rights Basic Policy in 2018 while taking into account international norms, such as the United Nations' Guiding Principles on Business and Human Rights.

JFE Group Human Rights Basic Policy

1. Respect for basic human rights

We recognize the diverse values of individuals in all aspects of corporate activities and respect and defend all human rights in accordance with international norms.

2. Abolition of discrimination

We respect each person as an individual in corporate activities and shall not discriminate in any way with regard to race, nationality, ethnicity, creed, religion, social status, family origin, age, gender, sexual orientation, gender identity, or presence or absence of any disability.

3. Prohibition of harassment

We shall not engage in harassment with respect to

gender, position or in any other way, or by any behavior that demeans degrades the dignity of others or causes mental discomfort.

4. Respect for fundamental labor rights

We value healthy labor-management relations and work to solve problems through constant dialogue between management and employees in good faith and in accordance with international norms, taking into account the laws and labor practices of each country. In addition, we always strive to upgrade worker safety and work environments that are rewarding for all employees.

5. Prohibition of child labor and forced labor

We shall not engage in any way in child labor or forced labor in any country or region.

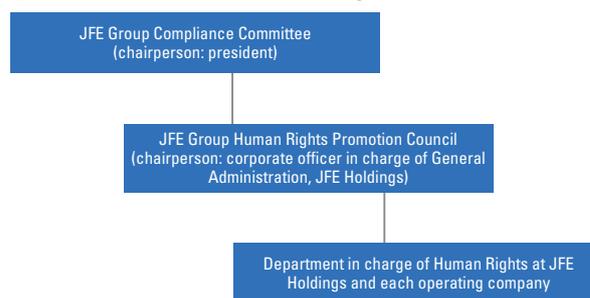
6. Seek the cooperation to all stakeholders

Respecting and defending human rights is not only mandatory of all officers and employees of the JFE Group, we also seek the cooperation of our supply chain members and all other stakeholders to observe these principles and practices.

● Promotion of Human Rights Awareness

We established the JFE Group Human Rights Promotion Council, which reports to the JFE Group Compliance Committee, chaired by the president of JFE Holdings, in order to define Group-wide policies and share information related to human rights. Each operating company has also set up consultation points for harassment and other issues.

■ Governance Structure for Human Rights Awareness Promotion



● Human Rights Promoting Activities

Under its Human Rights Basic Policy, the JFE Group works to raise human rights awareness among its employees through activities such as human rights training, guaranteed employment opportunities and the promotion of fair human resource management. We also strive to prevent all types of workplace harassment through such measures as specific rules in company regulations, training and hotlines at each business location. Information on human rights-related trends and issues unique to Japan is obtained by participating in the Industrial Federation for Human

Rights, Tokyo, and utilized in the Group's human rights awareness training. In line with the ongoing globalization of the Group's business, training also covers corporate responsibility for respecting human rights, as expected by the global society. JFE Steel maintains a system of control to ensure that raw materials are only purchased after confirming that suppliers are not using conflict minerals.

Stakeholder Engagement

To maintain sustainable growth and improve our medium- to long-term corporate value, we consider the needs of all our stakeholders, including shareholders as well as customers, suppliers, employees and local communities, and we do our best to maintain good relationships with all of them.

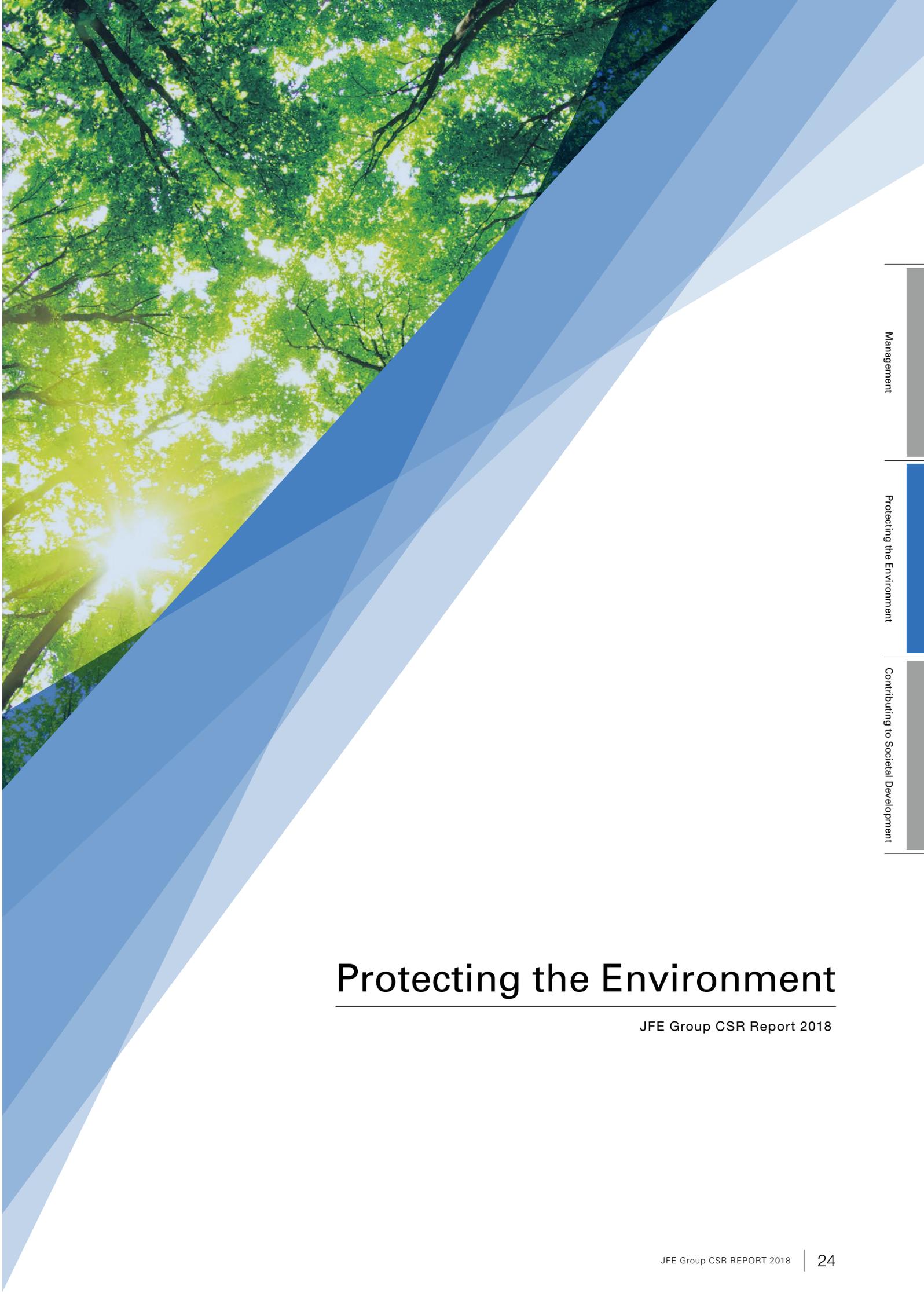
■ JFE Group's Major Stakeholders

Stakeholder	Basic Policy	Major Communication Channels	Other	
			Frequency per Year	Size, etc.
Shareholders/ Investors	We acknowledge our duty to disclose accurate and appropriate information in a timely manner and to communicate proactively. The IR Department serves as a communication channel with shareholders and investors in and outside of Japan. It focuses on building trusting relationships with our shareholders and investors through constructive dialogue and sharing their thoughts with management.	Ordinary General Meeting of Shareholders (meeting notice, meeting resolution notice, etc.)	Annual	Approx. 150,000 (number of shareholders of share units)
		Investors Meeting (financial results, Medium-term Business Plan, etc.)	Quarterly	Approx. 600
		Individual meeting (financial results, Medium-term Business Plan, etc.)	As needed	Approx. 400
		Corporate presentation at investment bank offices, etc.	14 sessions	Approx. 1,000
		Plant tours for shareholders (production sites such as steelmaking, engineering, shipbuilding)	26 times	Approx. 2,200
		Business report for shareholders	Twice (mid-term, fiscal)	Approx. 220,000 copies each time
		Various reports such as the Integrated Report and CSR Report	Annual	Approx. 30,000 copies
		Information sharing via the corporate website (for shareholders and investors)	Ongoing	
Customers	To satisfy customer demand, we constantly conduct research and development, while ensuring the stable supply of our products and services and quality assurance are also important. We do our best to maintain win-win relationships with our customers by always responding to their needs and their trust.	Communication through sales activities and quality assurance support	As needed	Conducted by each operating company
		Surveys and interviews on customer satisfaction	As needed	Conducted by each operating company
		Information sharing via the corporate website (product information, etc.)	As needed	
Suppliers	We view clients as key business partners and collaborate with them in driving forward our CSR initiatives. We clearly define our purchasing and procurement policies to ensure fair and honest trading and to maintain good business relationships.	Communications through procurement	As needed	Conducted by each operating company
		Briefing sessions, opinion exchange sessions	As needed	Conducted by each company
		Information communicating via website	As needed	
Employees	The JFE Group's management recognizes that creating workplaces where dignity and job satisfaction are provided to all is essential in order to maximize the potential of each individual. We established the Basic Policy on Human Resource Management as well as the Health Declaration, and we use these documents as guidelines for actively improving our workplaces.	Communications in workplaces and through daily operations	As needed	
		In-house newsletter and intranet	As needed	
		Various labor-management conferences	2 to 4 times	The management and labor union of each operating company
		Corporate Ethics Hotline	As needed	89 cases reported in FY2017
		Various types of training	As needed	Different levels, compliance, human rights, etc.
		Family Day (invite families to the workplace, lunch in the company cafeteria, etc.)	Annual	Conducted by each operating company
Local Communities	Many of the production sites we operate produce steel as well as other products. Our trusting relationships with local communities allow for co-existence and mutual prosperity, which are extremely important for the continuity of our business. As well as ensuring safety and reducing the environmental load of our business operations, we strive for the sustainable growth of both our business and local communities.	Communication with local communities and events	As needed	
		Events at production sites (festivals, etc.)	Once for each production site	Approx. 250,000 each year
		Plant tours	As needed	More than 100,000 visitors each year
		Cleanup activities (production site and surrounding areas, etc.)	As needed	
		Sporting activities (baseball lessons, running lessons, various athletic events)	As needed	
		Others (Education at Elementary Schools, Monozukuri manufacturing classes, work experience sessions, etc.)	As needed	
		Information sharing via the corporate website (environmental info, etc.)	As needed	
		Public Services by JFE 21st Century Foundation (university research aid, local community support, etc.) Web JFE 21st Century Foundation ⇒ http://www.jfe-21st-cf.or.jp/eng/	As needed	

Initiatives and Relevant SDGs

The JFE Group is taking action to address CSR issues, even in non-material areas. The following chart summarizes all activities introduced in this report. Through these activities, the JFE Group intends to contribute to the achievement of the SDGs.

	Activities	Page	Related SDGs	
Management	CRS Management	<ul style="list-style-type: none"> Compliance 	19	 
Protecting the Environment	Environmental Management	<ul style="list-style-type: none"> Environmental Management System Environmental Education Value Chain Initiatives 	25–28	 
	Climate Change Mitigation	<ul style="list-style-type: none"> Initiatives of Operating Companies 	31–36	   
	Protecting the Environment	<ul style="list-style-type: none"> Controlling Air Emissions Preventing Water Pollution Management of Chemical Substances 	37–38	   
	Resource Recycling	<ul style="list-style-type: none"> Resource Recycling Efficient Use of Water 	39–41	  
	Eco-friendly Products and Technologies		42–46	      
	Environmental Communication		47	  
Contributing to Societal Development	Customers	<ul style="list-style-type: none"> Quality Initiatives Quality Improvement and Enforcement of Quality Assurance Systems Improving Customer Satisfaction Responsible Export Practices 	49–51	      
	Clients	<ul style="list-style-type: none"> Fair Competition and Trade 	52	  
	Local Communities	<ul style="list-style-type: none"> Local Activities Support for External Organizations Support for Youth Development JFE 21st Century Foundation 	54–56	          
	Employees	<ul style="list-style-type: none"> Respecting Human Rights Workstyle Reform Operational Reform Workforce Diversity Employee Health and Safety Employee Health Developing Dynamic Work Environments 	57–63	     



Protecting the Environment

JFE Group CSR Report 2018

Environmental Management

Environmental Philosophy and Strategies

The JFE Group's environmental philosophy and strategies target the development of innovative technologies and international cooperation aimed at protecting the global environment.

Environmental Philosophy

The JFE Group puts top priority on protecting and enhancing the global environment to maintain its business in harmony with the environment, ultimately for the prosperity of society as a whole.

Environmental Strategies

1. Reduce the environmental impact of all businesses
2. Contribute through technologies and products
3. Conserve resources and energy
4. Communicate with society
5. Facilitate international cooperation

Framework for Environmental Management

The JFE Group Environmental Committee, chaired by the president of JFE Holdings and operating under the JFE Group CSR Council, sets goals for environmental protection, monitors the progress of such initiatives and works to improve the Group's overall environmental performance. Specialized committees set up by JFE Group's operating companies and affiliates implement specific activities.

Environmental Management System



Environmental Management System

Acquisition of ISO 14001 certification is an important part of every JFE Group company's environmental program. All global production sites of JFE Steel and JFE Engineering and major offices of JFE Shoji Trade have received certification, encompassing 70% of 41,000 employees at 79 companies covered in this report. During the reporting period, there was no material breach of any environmental law or regulation by any operating company, and no environmental protection violation notice was received from any governmental authority.

S JFE Steel has an Environment Management Department at its head office and in each business office, and the Environmental Committee chaired by its president and the Environment Management Committee in each local office. All JFE Steel production sites have obtained ISO 14001 certification, as have 16 of 37 major subsidiaries, for all operations or at least those related to production.

E JFE Engineering's Environmental Management System, which encompasses all employees, works to minimize environmental impact at production sites and branch offices and contribute to environmental protection through all projects and products. The major strategies for 2018 are (1) promote environmental contribution through products for mitigating global warming and climate change, (2) maintain the S-classification of the Energy Conservation Law, and (3) eliminate violations of Waste Management And Public Cleansing Law by implementing a system to manage disposal outsourcing agreements and manifests. Of JFE Engineering's 10 major group companies, four have obtained ISO 14001 certification.

T JFE Shoji Trade obtained ISO 14001 certification for its Tokyo head office, Osaka head office and Nagoya branch in 2000. Thereafter, the company secured certification of 23 group companies in Japan, including branch and sub-branch offices and 9 manufacturing firms, to ensure thorough environmental management throughout the JFE Shoji Trade group. Overseas, 12 manufacturing group companies have obtained ISO 14001 certification.

Environmental Auditing

In addition to the regular internal and external audits at ISO 14001-certified sites, the audit and environment departments at each operating company's head office conduct independent environmental audits at their production sites.

S Once a year, JFE Steel's Audit Department and the Environment, Disaster Prevention and Recycling Department conduct an environmental audit at each operational site. Companies are grouped by risk assessments of equipment, etc., using self-checks based on checklists, part of an extensive audit conducted every one to five years. A total of 170 business sites of JFE Steel companies require auditing, of which 25 were audited in FY2017.



Environmental audit by the operating company at its operational site

E JFE Engineering places a top priority on complying with environmental laws and regulations. Each year about 50 sites—selected from among the Tsurumi and Tsu manufacturing sites, construction sites in Japan and group company sites—are audited by the Safety and Environment Department to confirm compliance with environmental laws and regulations. In addition, environmental inspections are conducted at all construction sites to confirm legal compliance of their daily operations. JFE Engineering also conducts internal audits on its own environment management system to evaluate and enhance the effectiveness of various environment-related initiatives.

T JFE Shoji Trade conducts internal environmental audits at all of its affiliate companies that are ISO 14001-certified annually. Non-certified companies are also audited once every three years by the Audit Department.

Environmental Education

The JFE Group actively provides education to foster a corporate culture of environmental protection. Education at operating companies includes training for new recruits and newly promoted employees as well as specific environmental-protection training organized by position and job.

S JFE Steel encourages employees to obtain qualifications as pollution-control managers. In FY2017, 84 persons were qualified, bringing the total to 1,502 people since 2005. A training program launched in FY2011 for environmental managers at group companies was held three times in FY2017. In addition, JFE Steel provides employees with annual training to ensure compliance with environmental laws, and it disseminates information about regulatory revisions at its semiannual Environmental Liaison Committee meetings for companies in its group. Brush-up training in waste management skills for on-site personnel is held four times a year.

E JFE Engineering educates all employees about environmental issues to increase their understanding of the company's related policies and initiatives. To ensure proper environmental management at its production sites and construction sites, training is often tailored to the specific operations of employees, helping them to enhance their capabilities.

In FY2018, audit findings and near-violation cases at construction sites regarding environment management are incorporated into various environment-related operation manuals and training materials to raise awareness as an organization that fully complies with laws and regulations.

T JFE Shoji Trade complies with ISO 14001 requirements by providing all employees with general environmental training and specialized training for internal audit staff on an annual basis. In addition, each company performs a self-check using its own extensive checklist to ensure understanding and rigorous compliance with environmental laws. Also, JFE Shoji Trade provides environmental training to new executives at group companies and information about revised laws and regulations to environmental management personnel.

Environmental Accounting

● Basic Approach

The JFE Group is saving energy and reducing its environmental impacts by making its production facilities increasingly efficient and introducing more environmentally friendly equipment. Such investments, which are categorized as environmental costs, cover equipment, facilities and related expenditures for environmental protection and impact reduction.

● Environmental Investment and Expenses

Environmental capital investment totaled 43.3 billion yen and expenses amounted to 112.1 billion yen in FY2017. Capital expenditure included 19.1 billion yen for air-pollution countermeasures, 18.0 billion yen for energy savings and other measures to prevent global warming and 1.6 billion yen for water-pollution prevention. Environmental capital investment as a percentage of overall capital investment was roughly 24%.

Environmental expenses for environmental activities included 35.6 billion yen for air-pollution countermeasures, 27.8 billion yen for global-warming countermeasures and 17.1 billion yen for industrial water recycling. Environmental R&D expenses came to 11.7 billion yen.

● Capital Investment

To save energy and reduce environmental impacts stemming from production, the JFE Group invests in environmental technologies for plants and equipment. Cumulative investment in energy savings, totaling 492.9 billion yen since 1990, has enabled the company to achieve energy efficiencies that are among the highest in the world. In total, the Group has invested 692.4 billion yen in environmental protection since 1973.

● Results of Environmental Activities

Environmental protection costs include efforts to lower unit-based CO₂ emissions to prevent global warming and measures to reduce final-disposal waste and conserve natural resources through recycling. Other benefits include reduced discharges of airborne and waterborne substances with pollution loads and compliance with statutory regulations concerning exhaust gas emissions and discharged water.

The largest environmental capital investment in FY2017 was for facilities to address dust and soot emitted from coke ovens. Investments in dust collection equipment helped to minimize dust and soot from aging coke ovens. The monetary value of energy savings realized through environmental capital investments and expenses in FY2017 is about 1.3 billion yen.

■ Breakdown of Environmental Costs

Main Items		FY2016		FY2017	
		Investment (billion yen)	Cost (billion yen)	Investment (billion yen)	Cost (billion yen)
Management	Impact monitoring and measurement, and EMS expenses and education	0.1	2.4	0.2	2.5
Global warming countermeasures	Saving and efficiently use energy	8.8	29.5	18.0	27.8
Conservation of natural resources	Recycling industrial water	2.0	17.4	2.8	17.1
	Recycling and waste management of internally generated materials, etc.	0.03	5.1	0.09	5.3
Environmental protection	Air pollution countermeasures	27.2	36.8	19.1	35.6
	Water pollution countermeasures	4.6	9.7	1.6	9.2
	Prevention of soil contamination, noise, vibration and subsidences	0.5	0.8	0.02	0.7
Other	Charges, etc.	—	1.4	—	1.4
R&D	Technologies for protecting the environment, saving energy and preventing global warming	1.2	12.6	1.4	11.7
Societal activities	Support for nature preservation and forestation, information disclosure, exhibitions and public relations	—	0.7	—	0.7
Total		44.4	116.4	43.3	112.1

Note: Data cover all investment activities of JFE Steel Corporation and R&D activities of JFE Engineering Corporation.

Value Chain Initiatives

● Basic Approach

Under the concept of life cycle assessment, the JFE Group strives to reduce environmental impacts throughout its supply chains. Also, operating companies work with business partners to reduce their use of materials that impact the environment.

● Promoting Green Procurement

JFE Group's procurement policies help to conserve resources and protect the environment by ensuring adherence not only to all laws and regulations but also to procurement principles stated in the Charter of Corporate Behavior developed by the Japan Business Federation. Going forward, the JFE Group expects to accelerate such efforts in its supply chains.

Environmental Risks and Opportunities

● Preventing Global Warming

The steel business accounts for 99.9% of the JFE Group's CO₂ emissions, so reducing emissions from steelmaking processes is a major goal. Along with helping Japanese steelmaking processes to achieve the world's highest levels of energy efficiency, the JFE Group has played a key role in reducing CO₂ emissions worldwide through international cooperation. The company also helps to reduce emissions by supplying proprietary high-performance steel materials that save energy and develops engineering technologies for renewable energy sources.

With the adoption of the Paris Agreement, environmental efforts for the development of sustainable societies are becoming even more important. Stricter global warming measures could place certain restrictions on the Group's activities centered on steel, but they also present opportunities for growth and heightened competitiveness in increasingly low-carbon societies. JFE Steel achieved a 20% reduction in its energy consumption intensity compared to the FY1990 level. Overall, the JFE Group is committed to achieving greater energy savings by continuously developing innovative technologies.

● Products and Services

A shift toward a low-carbon society is significantly changing the business environment for the JFE Group. However, the development of products and services that can compete in these greener markets also presents major opportunities.

The JFE Group offers proprietary products and services for reducing environmental impact and restoring the environment, such as high-performance steel materials that help save energy, engineering technology for renewable energy sources, steel slag products that can help restore marine environments for biodiversity and a ballast water improvement system. The Group contributes to sustainable societies with products and services that are created with world-leading energy-saving and environmental technologies. In its steel business, the Group has targeted a 10% increase in environmental R&D investment under its Sixth Medium-term Business Plan (FY2018–FY2020) compared to the previous plan. Moreover, the company is continuously developing next-generation steelmaking process technologies and product technologies with a focus on automobiles, energy and infrastructure.

● Preventing Pollution

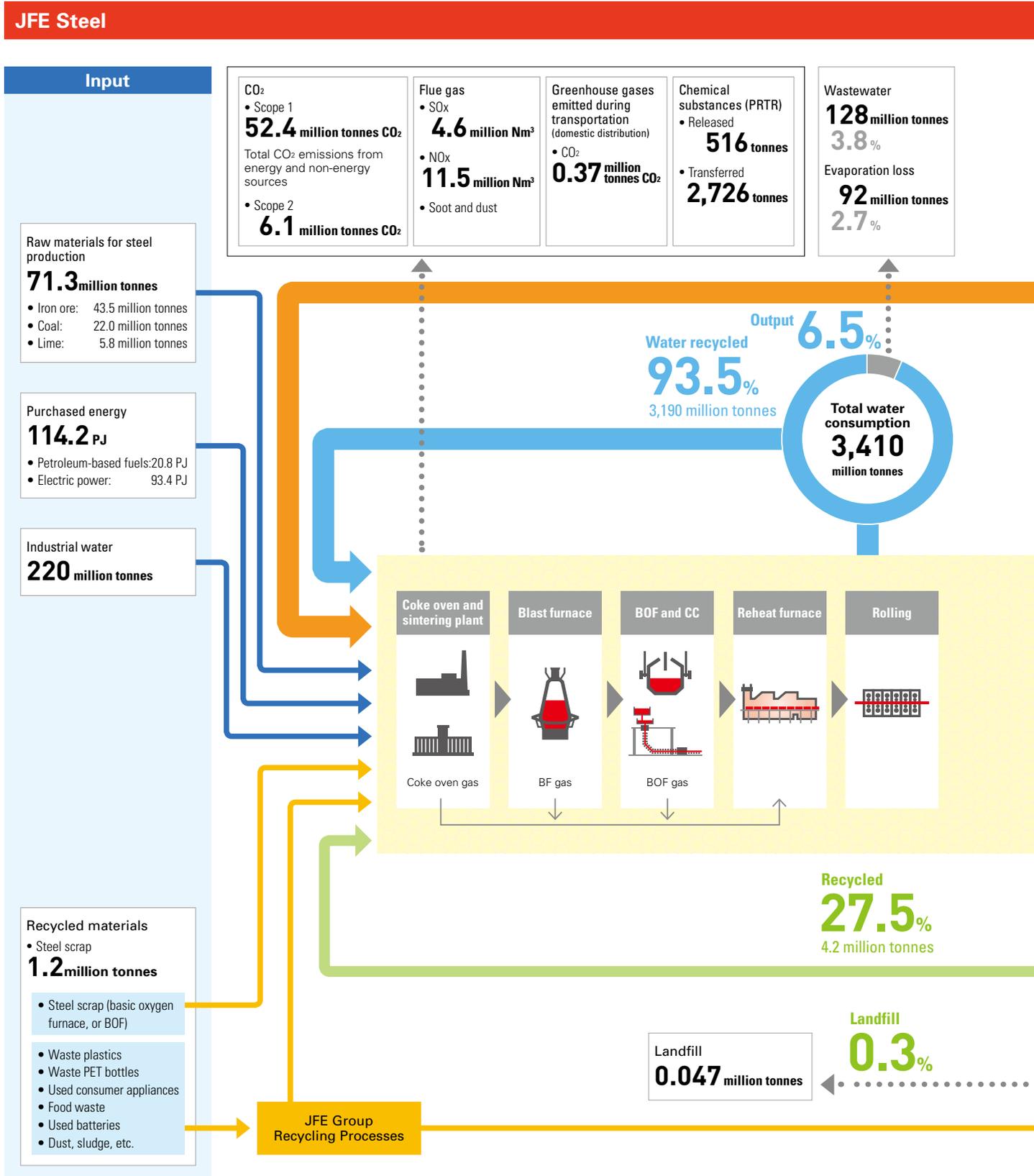
The JFE Group ensures compliance with laws and regulations through aggressive equipment investment for environmental protection, and related internal controls and education are steadily being strengthened. Also, the transfer and widespread application of proprietary technologies, mainly in developing countries, contribute to pollution prevention on a global scale.

● Resource Recycling

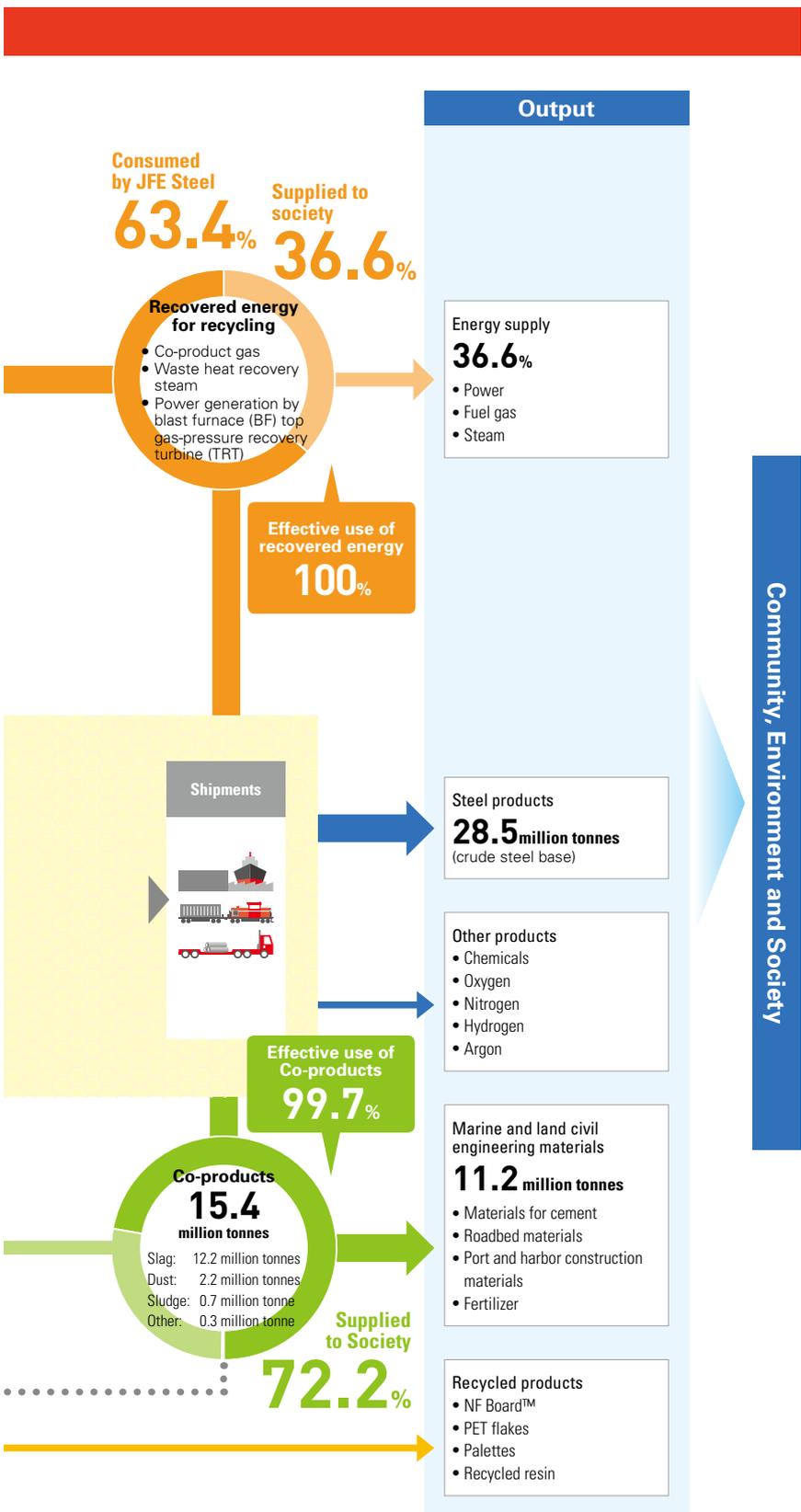
Economic growth in emerging countries is intensifying the need to conserve nonrenewable resources and prevent pollution. Addressing these issues requires a good balance between resource use and economic growth on a global scale. Iron can easily be separated and is thus easily recyclable. It can be recycled and reused to make other steel products infinite times (closed-loop recycling). So, the JFE Group is raising its rates of recycling co-products from steelmaking and reducing waste at construction sites. Also, the company is utilizing its steelworks infrastructure to develop recycling businesses and export iron scrap as a recyclable resource.

Material Flow

JFE Steel works to reduce the environmental impact of its steelmaking processes, including through the effective use of resources. The company recycles **93.5%** of the water it uses for production and uses **99.7%** of its co-products, such as iron-steel slag. In addition, **100%** of co-product gas generated during production is reused as fuel for reheating slabs, generating power for internal use and supplying power to the public.



→ Supply ••• → Emissions



JFE Engineering (Head Office and Works)

Input	
Steel	41,800 tonnes
Energy	
• Electric power purchased	26.9 GWh
• Class A heavy oil	439.7 kl
• Kerosene	15.0 kl
• Light oil	203.8 kl
• Gasoline	14.6 kl
• City gas	410,200 Nm ³
• LPG	121.2 tonnes
Water	97,000 tonnes

JFE Engineering	
• Tsurumi Works	
• Tsu Works	

Output and Emissions	
Products	39,700 tonnes
CO₂	19,300 tonnes
• Scope 1	7,000 tonnes
• Scope 2	12,300 tonnes
Waste generated	1,400 tonnes
• Industrial wastes	987 tonnes
• General wastes	372 tonnes
Wastewater (ocean only)	140,000 tonnes
Others (PRTR)	113 tonnes

Management

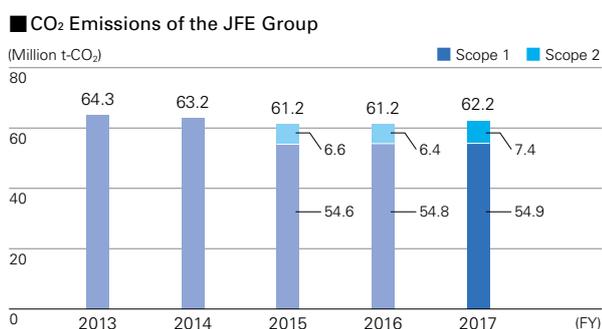
Protecting the Environment

Contributing to Societal Development

Climate Change Mitigation

CO₂ Emissions of the JFE Group

JFE's CO₂ emissions are mainly generated by its steel business. However, beyond reducing CO₂ emissions from steel making, each company sets specific targets corresponding with their operations to further save energy and reduce CO₂ emissions.



Notes: Data cover 75 companies, including JFE Steel and 29 major domestic and overseas subsidiaries, JFE Engineering and 10 major domestic subsidiaries, and JFE Shoji Trade and 33 major domestic and overseas subsidiaries. JFE Steel emissions include CO₂ emissions from non-energy sources. Data for certain fiscal years have been recalculated retroactively for improved accuracy.

CO₂ Emissions by Operating Company (FY2017)

JFE Steel	JFE Engineering	JFE Shoji Trade
62,147 thousand t-CO ₂	57 thousand t-CO ₂	35 thousand t-CO ₂
99.85%	0.09%	0.06%

Scope 3 Emissions of the JFE Group (FY2017)

Category	CO ₂ Emissions (thousand t-CO ₂)	Calculation Method
1 Purchased goods and services	13,048	Purchase prices for materials and outsourced work multiplied by CO ₂ emission factor*
2 Capital goods	921	Capital investment cost multiplied by CO ₂ emission factor*
3 Fuel- and energy-related activities not included in Scope 1 or Scope 2	386	Annual consumption of electricity and steam multiplied by CO ₂ emission factor*
4 Upstream transportation and delivery	650	Transportation distance stated in reports (based on Energy Saving Act) multiplied by CO ₂ emission factor*
5 Waste generated in operations	87	Waste volume (by type) multiplied by CO ₂ emission factor*
6 Business travel	4	Number of employees multiplied by CO ₂ emission factor*
7 Employee commuting	54	Number of employees multiplied by CO ₂ emission factor*
15 Investments	1,122	Emissions from companies of which more than 20% of their stock is held by the Group, and which are accountable under the Energy Saving Act, multiplied by the stock holding ratio

Coverage: (Categories 1, 2, 4, 5) JFE Steel, 25 JFE Steel domestic subsidiaries, JFE Engineering, and JFE Shoji Trade (Category 3, 6, 7) JFE Steel, 25 JFE Steel domestic subsidiaries, 10 JFE Engineering domestic subsidiaries, and JFE Shoji Trade (Category 15) Japan Marine United, and 9 JFE Steel equity-method affiliates (7 domestic and 2 overseas)

*Sources: Green Value Chain Platform (Ministry of the Environment) and others

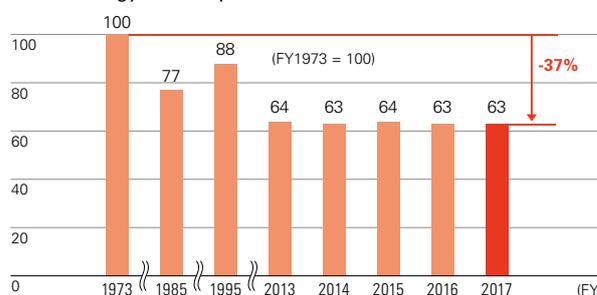
Calculation of Greenhouse Gas Emissions (Scope 3)

The JFE Group began calculating greenhouse gas emissions (Scope 3) in its value chain in FY2015. The calculation for FY2017 continued to cover the eight categories in the table at the bottom of this page, and the scope was broadened to also include Group companies.

Energy Savings and CO₂ Reduction in Steelmaking

S Initiatives to Save Energy and Reduce CO₂
JFE Steel had been pursuing CO₂ reduction and energy savings, including the introduction of energy-saving equipment, since before the Japan Iron and Steel Federation introduced its voluntary action plan.

Unit Energy Consumption at JFE Steel



● Energy Consumption and CO₂ Emissions in FY2017

Energy consumption and CO₂ emissions in steelmaking are greatly influenced by production volume. To accurately assess the effects of improvements due to operational technologies and capital investments, JFE Steel is working to reduce its intensity (energy consumption and CO₂ emissions per unit of production) and related energy-conservation activities.

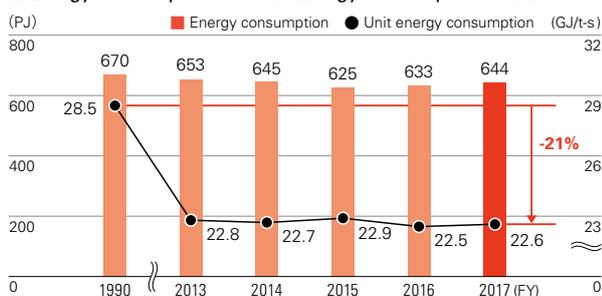
JFE Steel's crude steel production was 28.46 million tonnes in FY2017, up 1% from FY2016 and up 21% from FY1990. However, thanks to ongoing energy-saving activities, energy consumption was down 4% and CO₂ emissions were down 3% from FY1990.

The company's energy consumption intensity in FY2017 was 21% below the FY1990 level at 22.6 GJ/t-steel, while CO₂ emission intensity was down 20% to 1.99 t-CO₂/t-steel. The results prove the success of JFE Steel's energy-saving activities in recent years, including capital investments in energy conservation and promotion of energy conservation through the visualization of the reheat furnace fuel basic unit.

■ Production of Crude Steel of JFE Steel

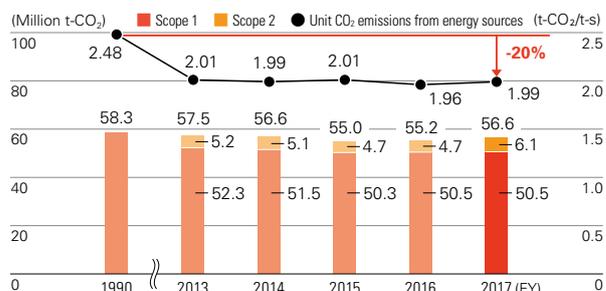


■ Energy Consumption and Unit Energy Consumption of JFE Steel



Note: Data for certain fiscal years have been recalculated retroactively for improved accuracy.

■ CO₂ Emissions from Energy Sources and Unit CO₂ Emissions of JFE Steel



Notes: The CO₂ coefficient for electricity purchased in FY2017 is that of FY2016 on the Japan Iron and Steel Federation's Low-Carbon Society Implementation Plan. Data for certain fiscal years have been recalculated retroactively for improved accuracy.

■ CO₂ Emissions of JFE Steel Group

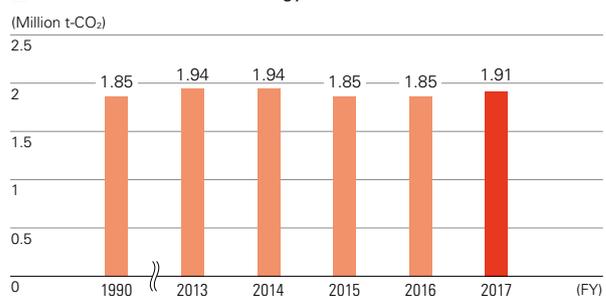


Notes: Data cover JFE Steel and 29 domestic subsidiaries for CO₂ emissions from energy sources, JFE Steel for CO₂ emissions from energy and non-energy sources. Data for certain fiscal years have been recalculated retroactively for improved accuracy.

● CO₂ Emissions from Non-energy Sources

Lime and dolomite, which are used as auxiliary materials in blast furnaces and converters, emit CO₂ in decomposition. CO₂ emissions from non-energy sources in FY2017 totaled 1.91 million t-CO₂.

■ CO₂ Emissions from non-energy sources of JFE Steel



Japanese Steel Industry Initiatives

Low-carbon Society Implementation Plan

The Japan Iron and Steel Federation (JISF) is promoting its Low-Carbon Society Implementation Plan, which focuses on the Three Ecos initiatives and the development of innovative new steelmaking processes. JFE Steel is actively implementing initiatives to help achieve the plan's targets.

Assessment of Low-carbon Society Implementation Plan Results

In FY2016 emissions by the Japanese steel industry decreased 2.46 million t-CO₂ compared to the BAU* emissions benchmark. Various self-improvement efforts, such as raising the efficiency of coke ovens and generation facilities, started to take effect and thereby reduce emissions. Although the result was better than in the previous year, it fell

short of achieving the target, mainly due to the deterioration of coke oven bricks, which were not foreseen when the target was established.

*Business As Usual emissions: Estimated level of emissions in the absence of any special measure.

Revolutionary Steelmaking Process Development COURSE 50

About 30% of CO₂ emissions can be reduced through hydrogen reduction along with separation and capture of CO₂ from blast furnace gases. The first facility is expected to come online by 2030, followed by other plants by 2050.

Ferro Coke

The Japanese steel industry intends to develop ferro coke that accelerates and lowers the temperatures of the reduction reaction in a blast furnace as well as its operational processes to conserve energy further and expand the use of low-rank materials.

CO₂ Reduction Medium-Long Term Targets (Japan Iron and Steel Federation's "Commitment to a Low-Carbon Society")

Three Ecos		Eco-Processes	Eco-Products	Eco-Solutions
Goal		Further improve energy efficiency by taking full advantage of cutting-edge technologies	Provide high-performance steel materials that result in high performing end-products and thus reducing CO ₂ emissions	Reduce CO ₂ in developing countries through the transfer and application of world-leading, energy-saving Eco-Process technologies
Targets	FY2020 (phase-I)	Reduce CO ₂ emissions by 5 million tonnes compared to the BAU benchmark •Energy conservation: 3 million tonnes •Efficient use of waste plastics, etc.: 2 million tonnes	The use of major high-performance steel materials to contribute to a CO ₂ reduction of approximately 34.0 million tonnes	Estimated CO ₂ reduction impact of 70 million tonnes
	FY2030 (phase-II)	Reduce CO ₂ emissions by 9 million tonnes compared to the BAU benchmark	The use of major high-performance steel materials to contribute to a CO ₂ reduction of approximately 42.0 million tonnes	Estimated CO ₂ reduction impact of 80 million tonnes
Status as of FY2016 year-end		Reduced 2.46 million tonnes of CO ₂ emissions (energy conservation etc.), compared to the BAU benchmark	Domestic and international use contributed to a CO ₂ reduction of 28.47 million tonnes	CO ₂ reduction impact of 60.01 million tonnes

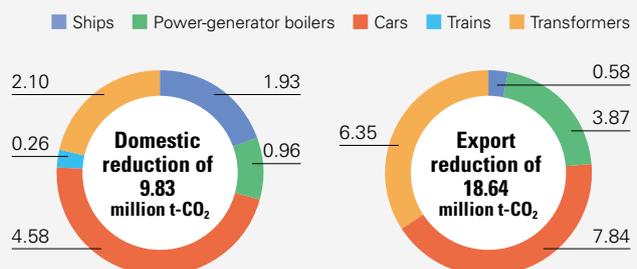
Source: Public data from the Japan Iron and Steel Federation.

Reduced CO₂ Emissions through High-performance Steel Materials (Effects of Eco-Products)

The Japan Iron and Steel Federation estimates the contribution of five types of high-performance steel materials to the reduction of CO₂ emissions. It is estimated that the use of major high-performance steel materials for cars, transformers, ships, power generator boilers and trains in Japan and overseas (FY2016 production: 7.36 million tonnes, 6.9% of crude steel production) helped to reduce CO₂ emissions by 28.47 million tonnes in FY2016.

Notes: Estimates created by the Institute of Energy Economics, Japan. Materials included are steel sheets for automobiles, directional electrical steel sheets, thick steel sheets for shipbuilding, steel tubes for boilers, stainless steel sheets. For the domestic figures, the calculation includes data from FY1990 onward. For the export figures, the calculation includes data from FY2003 onward for automobile and shipbuilding, from FY1998 onward for steel pipes for boilers and from FY1996 onward for electrical steel sheets.

CO₂ Reduction Resulting from the Use of Five High-performance Steel Materials in Japan and Abroad

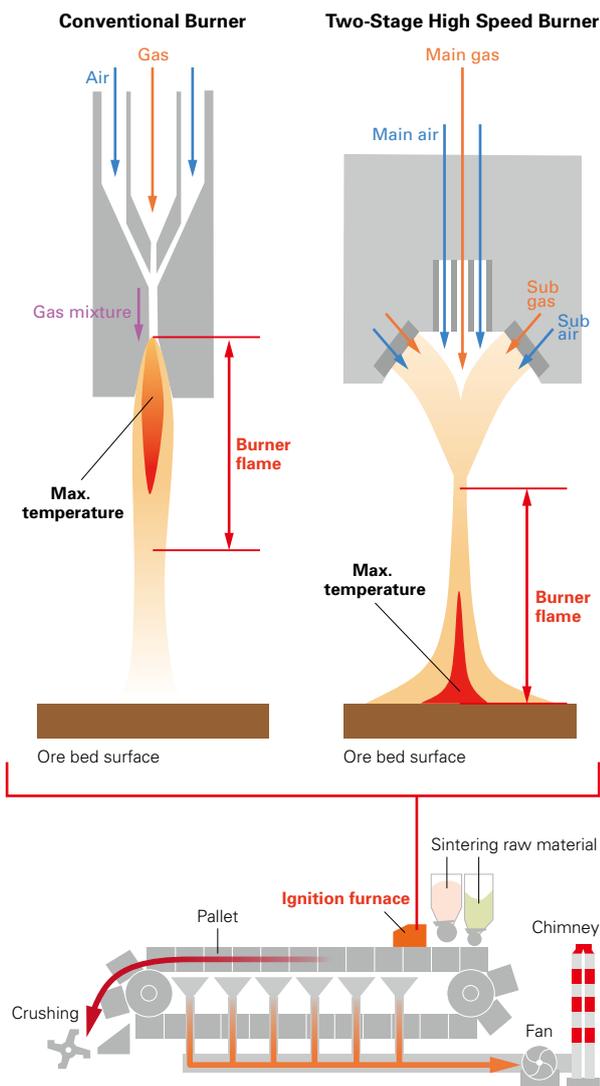


Efforts for the Commitment to a Low-Carbon Society

S Development of Energy-conserving Technologies

JFE Steel was awarded two prizes at the 2017 Energy-Efficient Machinery Award (Japan Machinery Federation). The “Two-stage Jet Burner for Igniting Sintering Machine” received the Agency of Natural Resources and Energy Director’s Award and “Radiant Tube Burner with Effluent Gas Recirculation” received the JMF’s President Award.

Two-stage Jet Burner for Igniting Sintering Furnace



The “Two-stage Jet Burner for Igniting Sintering Furnace” is used during the manufacturing of sintered ore, the main ingredient fed into a blast furnace. The technology stabilizes and accelerates the speed of the burner flame heating the ore bed surface, thereby conserving energy. This has been installed on all sintering furnaces (three units) at sintering plants in the Kurashiki District, achieving about a 30% reduction in fuel gas consumption and an annual reduction of approximately 6,000 tonnes (total impact of three units) of CO₂ emissions.

The “Radiant Tube Burner with Effluent Gas Recirculation” is a burner that uses radiant heat for a continuous annealing furnace in steel plate production. Its burner features the lowest NO_x emissions in Japan, and along with a compact heat exchanger, the unit lowers NO_x emissions and conserves energy. A total of 162 units were installed in annealing furnaces in the Fukuyama District, achieving a 12% reduction in gas emissions, while CO₂ emissions are being reduced by 1,900 tonnes per year.

Life Cycle Assessment

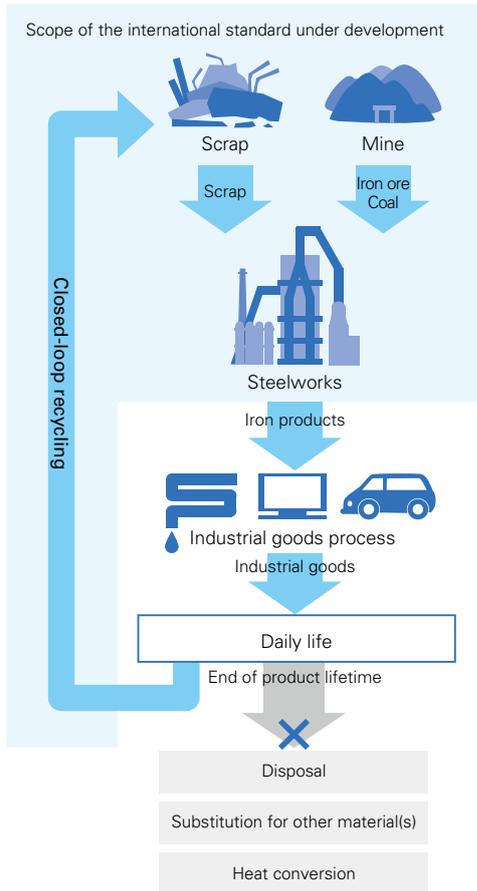
In order to accurately evaluate the environmental impact of products, assessment and quantification is required over their entire life cycles, from raw resource mining to material production, product manufacture, use and final disposal. Life Cycle Assessment (LCA) is one method for conducting this evaluation.

After final products such as automobiles and buildings finish their mission in society, all of their steel components can be recycled and reused. This closed-loop recycling ability is an excellent characteristic of steel materials. If LCA is conducted and this characteristic is taken into account, steel can be viewed as having extremely low environmental impact compared to other materials.

All of our research, development and production processes carefully evaluate the environmental impact of products through LCA.

Note: JFE Steel, together with the WSA (World Steel Association, comprising of approximately 170 steel manufacturers and steel-related organizations) and the Japan Iron and Steel Foundation (JISF), is working to establish LCA as an international standard methodology for calculating LCI for steel products.

■ Life Cycle of Steel Materials



● Addressing Global Warming

ISO 14404 is an international standard proposed by the Japan Iron and Steel Foundation (JISF) to the International Organization for Standardization (ISO) as a methodology for the globally unified calculation of CO₂ intensity from iron and steel production, ultimately to assess the energy efficiency of steelworks. The Japanese steel industry is addressing global warming through international public-private collaborations, including ISO 14404-based assessment of steelworks in developing countries and recommending specific technologies best suited to respective countries.

JFE Steel is also addressing global warming by participating in international activities, such as the Japan-India Public and Private Collaborative Meeting, the Japan-ASEAN Steel Initiative and the Japan-China Steel Industries Exchange. In addition, JFE Steel is involved with the World Steel Association's Climate Action Program, which uses ISO 14404 as the standard for measurement and calculation.



The Japan-India Public and Private Collaborative Meeting



Climate Action Member Certificate

CO₂ Reduction in the Value Chain

S JFE Steel initiatives to reduce CO₂ emissions include lowering the environmental impact of distribution, providing high-performance steel materials that save energy in final products and international cooperation in environmental technologies.

● Energy Saving in Transportation

To reduce the environmental load of transporting steel, JFE Steel is actively shifting its transport modes to ships and rail. The modal shift rate* for FY2017 was 92.7%.

*Percentage of transportation volume (minimum 500 km) by rail or ship.

CO₂ Reduction Initiatives

E The head office, branch offices and works of JFE Engineering strive to reduce CO₂ emissions. In 2017, JFE Engineering achieved the reduction target set by the Energy Conservation Law.

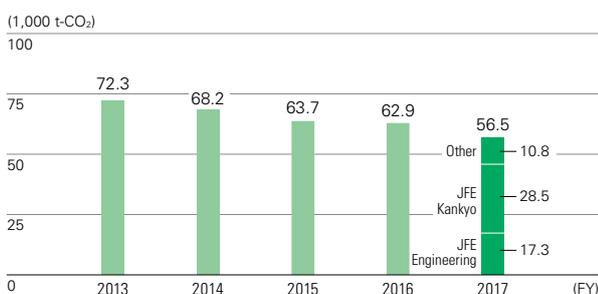
In addition to reducing CO₂ emissions from its own business, it also helps clients reduce their CO₂ emissions by providing them with environmentally sound products and services, including technologies that harness renewable energy and energy-saving products.

For example, if all of the renewable energy-related plants that JFE Engineering has constructed by FY2017, including those currently under construction, were in operation, their estimated contribution to CO₂ reduction would mount up to 4.06 million tonnes per year.

Companies of the JFE Engineering group also work to reduce CO₂ through energy-saving initiatives suited to their respective businesses.

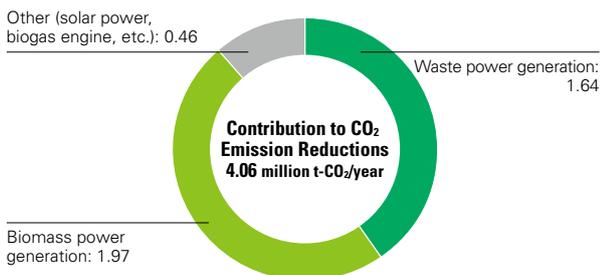
*For renewable energy power generation plants, the characteristics of each plant is taken into consideration while estimating their CO₂ emissions.

CO₂ Emissions of the JFE Engineering Group



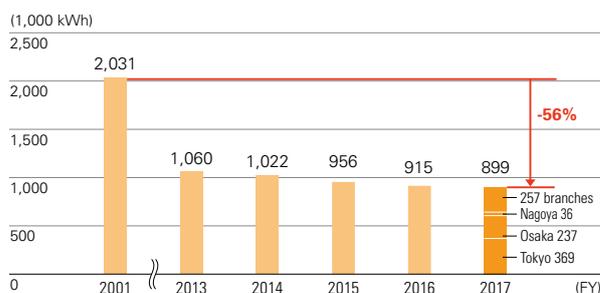
Note: Data cover CO₂ emissions from energy sources by JFE Engineering and 10 domestic subsidiaries.

Contribution to CO₂ Emission Reductions by Renewable Energy Plants

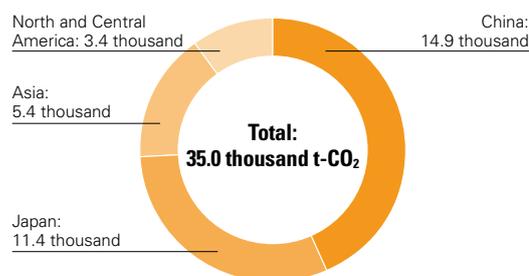


T JFE Shoji Trade offices in Japan work to reduce their use of energy and paper, as well as strictly manage waste separation. Energy consumption has been lowered significantly by observing days when employees are encouraged to leave work on time, prohibiting night work and introducing pinpoint lighting. In FY2017, 899 thousand kWh of energy was consumed, a 56% reduction compared to FY2001. In addition, the company has introduced video conferencing systems in offices worldwide to reduce printed reference materials and domestic and international business trips.

Electric Power Consumption by JFE Shoji Trade



CO₂ Emissions of the JFE Shoji Trade Group



Note: The graph shows CO₂ emissions from electric power consumption by JFE Shoji Trade and 33 domestic and overseas consolidated subsidiaries (steel-processing companies).

Disclosure of Climate Change Mitigation Measures

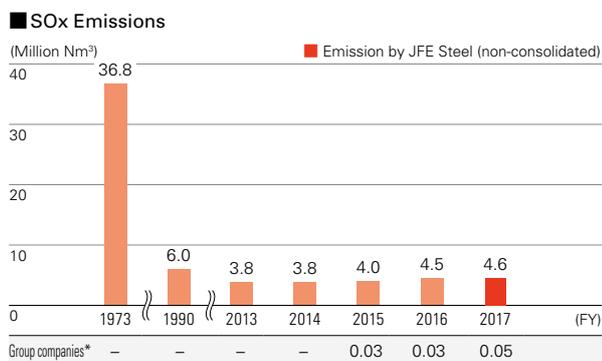
JFE Holdings is responding to requests to disclose its efforts to mitigate climate change and is providing inputs to the Carbon Disclosure Project (CDP)*.

*CDP: an international non-profit organization that works with institutional investors to collect and disclose information from corporations on their greenhouse gas emissions and other climate change risks.

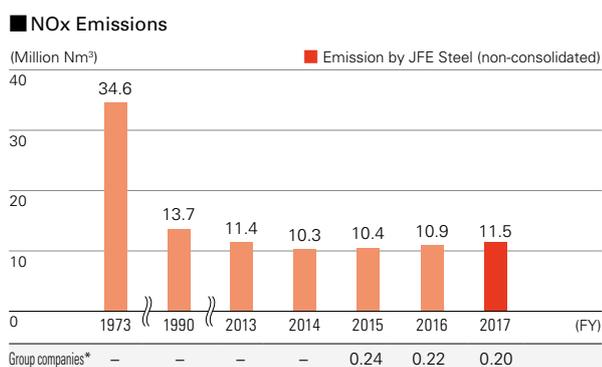
Protecting the Environment

Controlling Air Emissions

S JFE Steel is increasingly controlling emissions by installing low-NOx burners in reheat furnaces, switching to low-sulfur fuels and deploying desulfurization and denitration devices in sintering plants, all major sources of SOx or NOx emissions. In addition, the company suppresses dust dispersion through measures that include enhancing on-site cleaning, installing sprinklers and windbreak fences in raw material yards, and improving the performance of dust collectors.



*13 JFE Steel consolidated subsidiaries in Japan.



*14 JFE Steel consolidated subsidiaries in Japan.

E To ensure compliance with the Air Pollution Control Law and local regulations on soot- and smoke-emitting facilities, JFE Engineering regularly measures and strictly controls nitrogen oxide emissions, etc., at its Tsurumi and Tsu works. In addition, efforts are being made at construction sites to appropriately control the environmental impact of construction machinery and on-site vehicles in compliance with the NOx Law and the Off-Road Vehicle Law.

Preventing Water Pollution

S JFE Steel strives to reduce its environmental impact on waterways by thoroughly purifying water used in steelmaking processes before releasing it into public waterways or sewers. Chemical oxygen demand (COD), the water-quality index for wastewater, was 3.0 tonnes per day.

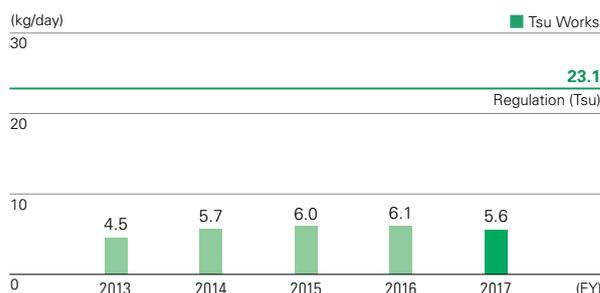
Chemical Oxygen Demand (COD)



*12 JFE Steel consolidated subsidiaries in Japan.

E Wastewater from each JFE Engineering works is released into public waterways or sewer systems. Water quality is strictly controlled at each outlet to ensure regulatory compliance.

Chemical Oxygen Demand (COD) in Wastewater Released Publicly



This report uses the maximum value of each year.

Water-related Risks and Mitigation

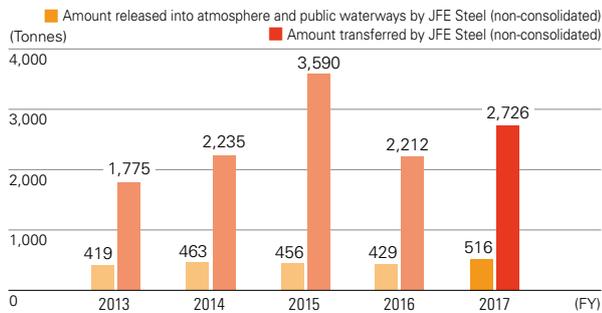
S JFE Steel identifies and evaluates water-related risks based on damage reported in the past for each steelworks and on forecast data from the Meteorological Agency. Using tools such as the World Resource Institute (WRI)'s Aqeduct, these risks are further evaluated from different perspectives. While Japan possesses a plentiful water supply, there are risks of water shortages and flooding associated with

climate conditions. JFE Steel identifies steelworks having risks that are affected by climate change and mitigates their risks by creating a BCP.

Management of Chemical Substances and Emission Control

S JFE Steel lowers its environmental impact by voluntarily reducing the chemical substances it releases. In FY2017, chemical substances released into the atmosphere and public waterways totaled 516 tonnes. The Japan Iron and Steel Federation formulated a voluntary action plan to reduce VOC emissions by 30% from FY2000 levels by FY2010. Actual reductions in the industry were significantly better than the levels targeted for FY2020, and follow-up efforts are helping to prevent any increase in emissions. JFE Steel, a member of the federation, has cut its VOC emissions by more than 50% from its FY2000 level.

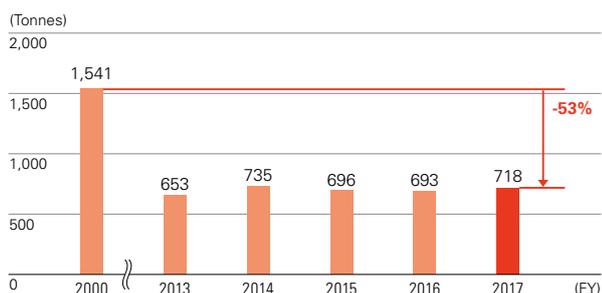
Release and Transfer of PRTR-registered Substances at JFE Steel



Group companies*	Amount released	Amount transferred
	386 (tonnes)	413 (tonnes)
	381 (tonnes)	6,208 (tonnes)

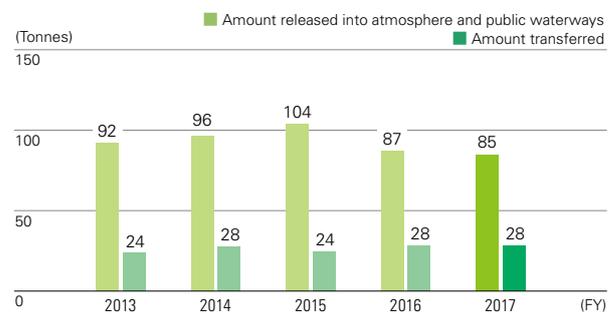
*18 JFE Steel consolidated subsidiaries in Japan.

VOC Emissions



E Chemical substances at JFE Engineering works are generated primarily from painting steel structures and welding. The company controls the release or transfer of these substances in accordance with Japan's Law Concerning Pollutant Release and Transfer Register (PRTR Law).

Release and Transfer of PRTR-registered Substances at JFE Engineering Works



Group companies*	Amount released	Amount transferred
	45.6 (tonnes)	6.2 (tonnes)

*4 JFE Engineering consolidated subsidiaries in Japan.

PCB Waste Management at JFE

Polychlorinated biphenyl (PCB) waste is properly stored and managed at the JFE Group's facilities. High-concentration PCB waste is treated in accordance with guidelines set by the Japan Environmental Storage & Safety Corporation (JESCO). The Yokohama Eco Clean Plant and Mizushima Eco-Works of JFE Kankyo Corporation treat insulating oil contaminated with slight amounts of PCB, helping to reduce pollutants both in and outside the JFE Group.

Initiatives to Preserve Biodiversity

The JFE Group actively engages in preserving biodiversity through its business operations. Examples include lowering the environmental impact of its business operations, developing eco-friendly products and technologies, and conducting environment-related training for local communities. For more information, please refer to the following pages.

Pages 7, 8	JFE Group in Society—Ballast Water Management System
Page 44	Eco-friendly Products and Technologies—Improving Marine Environments with Marine Stones™
Page 54	Local Activities—Initiatives to Preserve Biodiversity

Resource Recycling

Resource Recycling

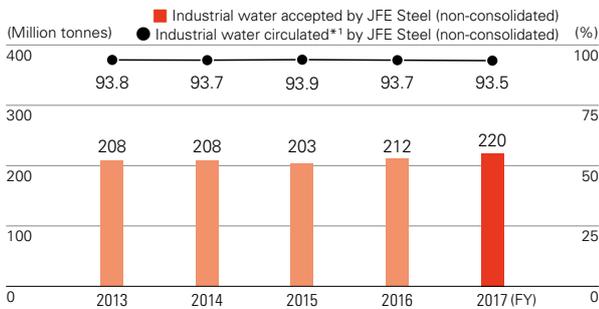
Each operating company of the JFE Group carries out resource recycling suited to its particular business. We continue to pursue increasingly efficient uses of resources in both the production and product/service phases of its businesses, including steel scrap recycling, biomass fuel production and waste-to-energy initiatives.

Efficient Use of Water in Response to Water Risks

S ● Cyclic Use of Water

A large amount of water is used in the steelmaking process to cool facilities and process products. JFE Steel actively recycles and cascades this water in thorough purification processes, such as biological and chemical wastewater treatments, which enabled the company to achieve a high recycling rate of 93.5% in FY2017.

Industrial Water Accepted/Circulated



●JFE Steel					
	2013	2014	2015	2016	2017 (FY)
Total amount	3,336	3,313	3,326	3,340	3,410
Industrial water accepted	208	208	203	212	220

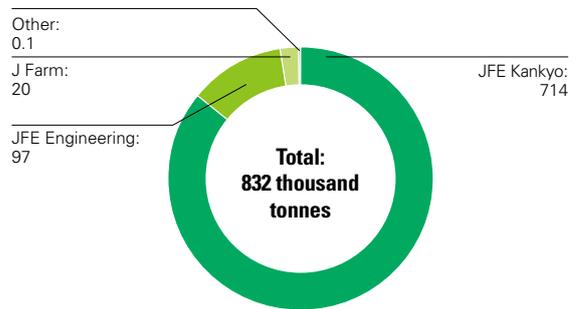
●Group companies*2					
	2013	2014	2015	2016	2017 (FY)
Total amount used	-	-	-	339	280
Amount of industrial water accepted	-	-	25	26	21

*1 Industrial water circulated (%) = (Total amount - industrial water accepted)/total amount × 100
 *2 Data cover 25 domestic consolidated subsidiaries of JFE Steel

E ● Water Consumption

JFE Engineering and its subsidiaries strive to efficiently use water in their business operations at each site, such as manufacturing industrial equipment and steel structures, waste disposal and treatment, and recycling.

JFE Engineering Group's Water Consumption Amount

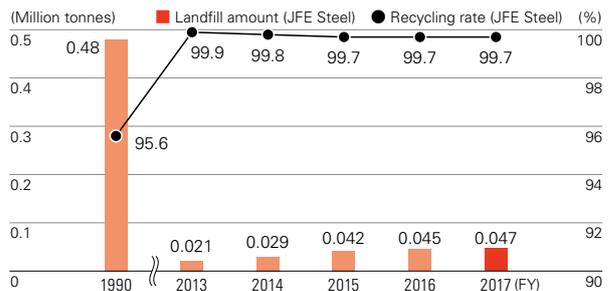


*Scope: JFE Engineering by itself and 6 of its domestic subsidiaries.

Reducing Generation and Emission of Co-products and Reusing Co-products

JFE Steel carefully controls the occurrence and emission of iron and steelmaking slag (steelmaking co-product), iron dust from blast furnaces and converters, sludge from water treatment facilities and other co-products. Dust and sludge with high iron content are fully recycled as raw materials for steelmaking. All iron and steelmaking slag is recycled for reuse in cement and other construction materials, and new applications as an environmental material are being promoted. As a result of such efforts, the company achieved a 99.7% recycling rate for slag, dust and sludge in FY2017.

Landfill of Byproducts and Recycling Rates



Group companies*	Recycling rate						(Million tonnes)
	1990	2013	2014	2015	2016	2017 (FY)	
	-	-	-	0.771	0.776	0.539	
Landfill amount		(Million tonnes)					
	-	-	-	-	0.042	0.034	

* 25 JFE Steel consolidated subsidiaries in Japan

● Example of Efficient Use

Steel slag is actively being reused as a substitute for natural aggregates. The reaction of the lime contained in slag alters the quality of the slag, and this chemical reaction needs to be controlled in order to ensure production of steel slag with consistent quality. To overcome this, JFE Steel is installing steam-aging facilities in all its steelmaking sites, ensuring consistently high-quality steel slag products.



Steam-aging facility in the Keihin District

Promoting Recycling

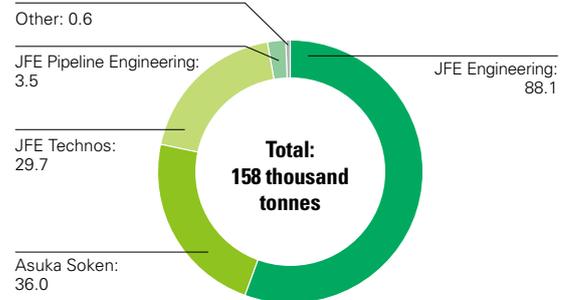
E Most of JFE Engineering's industrial waste is rubble and sludge discharged from construction sites. By separating these wastes on-site and then employing disposal companies known for achieving high recycling rates, the construction department limited its industrial waste to 88.1 thousand tonnes, or a recycling rate of 98.4%, in FY2017.

Company production sites focus on improving recycling rates by thoroughly separating valuable co-products and waste. In FY2017, the Tsurumi Works recycled 61.0% of 302.3 tonnes of waste and the Tsu Works recycled 37.0% of 470.7 tonnes.

The City of Yokohama has named JFE Engineering's Yokohama head office as a Workplace with Excellent 3R Activities for four consecutive years beginning in FY2012 to recognize its waste reduction, reuse and recycling activities.

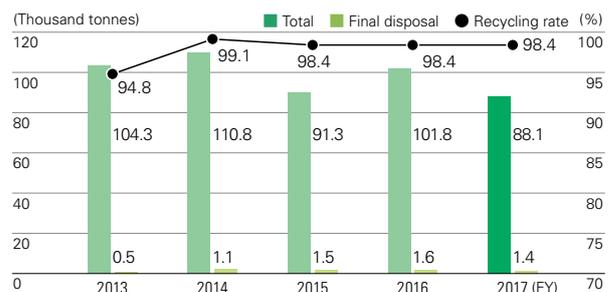
JFE Engineering establishes targets for such efforts as part of their environmental management systems. In addition, the company provides other resource-recycling solutions such as construction of biomass power generation plants.

■ JFE Engineering Group Waste Disposal



*Scope: JFE Engineering by itself and 7 of its domestic subsidiaries.

■ Waste Generated at Construction Sites

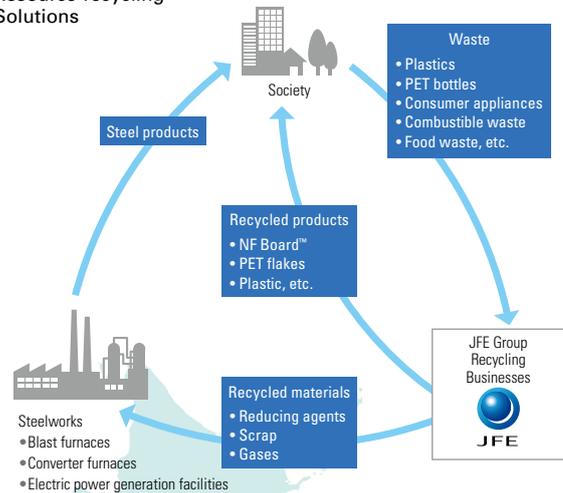


T Every JFE Shoji Trade office reduces and recycles waste by using waste paper and thoroughly separating waste. The company's recycling business for steel and aluminum scrap includes the export of steel scrap to Asian countries, where it is sold for both offshore and domestic trading. Although steel scrap exported from Japan is mainly transported by bulk carriers, timely shipments of small lots now contribute to emerging recycling societies in Asia due to the container loading system introduced by JFE Shoji Trade.

Resource-recycling Solutions

The JFE Group engages in recycling businesses, such as the reuse of used plastics in materials for blast furnaces, based on recycling technologies developed for its steelworks. In the engineering field, the recycling businesses maintain close relationships with local communities through such activities as the sorting and storage of waste plastics and conversion of refuse into solid fuel. The JFE Group also contributes to sustainable societies by offering disposal solutions for various types of waste, including materials, chemicals and thermal recycling, while also striving to minimize the volume of final disposal.

Resource-recycling Solutions



JFE Recycling Businesses

Sendai

- 🇪 Plastic packaging-waste sorting and baling plant
- 🇪 Plastic material recycling plant
- 🇪 Fluorescent tube recycling plant
- 🇪 Recycled pallet manufacturing plant
- 🇪 Confidential document disposal plant
- 🇪 Refuse paper and plastic (RPF) manufacturing plant

Toyama

- 🇸 Rare metal recovery plant for spent catalysts

Kurashiki (Mizushima)

- 🇸 Waste gasifying and melting furnace
- 🇪 Waste wood carbonizing facility
- 🇸 Electric furnace recycling plant

Fukuyama

- 🇸 Waste plastic recycling plant
- 🇪 RPF manufacturing plant
- 🇸 Fukuyama plastic material recycling plant
- 🇪 Recycled pallet manufacturing plant
- 🇪 Kiln incinerator
- 🇪 Leachate-controlled landfill
- 🇪 Liquid waste neutralization plant
- 🇪 Refuse-derived fuel (RDF) gasifying power generation plant (commissioned operation)

Yokohama

- 🇪 Kiln-stoker incinerator
- 🇪 Kiln-ash melting furnace
- 🇪 Liquid/sludge waste intermediate-treatment plant
- 🇪 Dry cell and battery recycling plant
- 🇪 Solid waste recycling plant
- 🇪 Fluorescent tube recycling plant
- 🇪 Plastic packaging-waste sorting and baling plant
- 🇪 Food waste recycling plant

Chiba

- 🇪 Waste gasifying and melting furnace
- 🇪 Food waste recycling plant

Kashima

- 🇸 Electric furnace recycling plant

Kawasaki

- 🇸 Waste plastic recycling plants (Ogishima & Mizue)
- 🇪 Waste PET bottle recycling plant
- 🇪 Kiln-stoker incinerator
- 🇪 Solid waste recycling plant
- 🇸 NF Board™ manufacturing plant
- 🇪 Consumer/office appliance recycling plant

Examples of Recycling and Processing (FY2017)

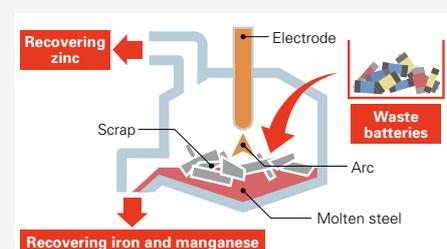
Content	Volume
Containers and packaging plastic bought at auction	100 thousand tonnes
Waste plastic reused in steelmaking process	120 thousand tonnes
Used fluorescent tubes processed	20 million tubes
Used consumer appliances processed	500 thousand units

S Recycling of Used-Batteries (Separating Metals)

JFE Bars and Shapes is involved in recycling used batteries in their Mizushima and Kashima Works. The used batteries collected as general waste through the public waste collection process are put into high temperature electric furnaces and melted, allowing for the extraction of iron, manganese and zinc, which can then be reused for other purposes.

JFE Bars and Shapes' processing sites are located in western and eastern Japan. The company offers safe and reliable services at low cost and has gained the trust of many local authorities, winning their recycling businesses. Its contribution is not limited to recycling iron scrap; it also encourages the creation of a recycling society.

Treatment in High Temperature Electric Furnaces



Eco-friendly Products and Technologies

JFE Steel

FOCUS

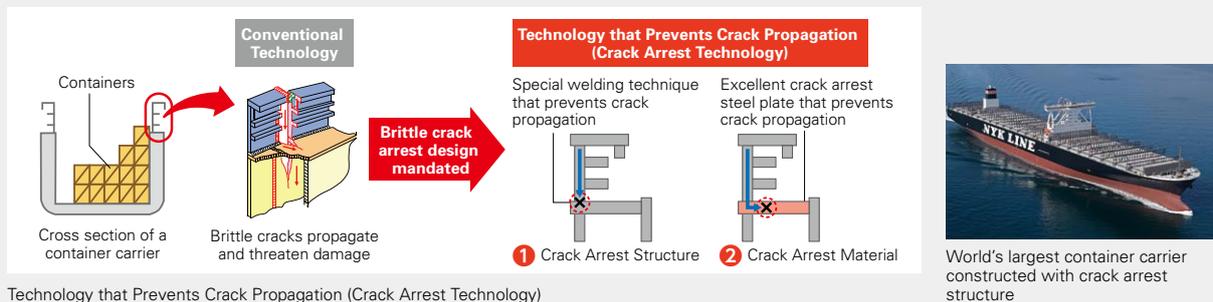
Crack Arrest Technologies (Crack Arrest Structure and Steel Plate)



● Technology to Prevent Propagation of Brittle Cracks in Mega Container Carriers Crack Arrest Structure and Extra Thick Crack Arrest Steel Plate

The recent growth of the global economy has triggered a rise in the use of container carriers for sea transportation, and these container carriers are rapidly growing in size to meet the demand. To ensure safety, brittle crack arrest design has been mandated for these mega container carriers. There are two approaches to prevent damage on carrier bodies from brittle fractures: ① structurally prevent the propagation of cracks (crack arrest

structure), and ② use special steel plates to prevent the propagation of cracks (crack arrest steel plate). JFE Steel conducted research into these crack arrest technologies with due consideration for weldability and successfully discovered and commercialized a state-of-the-art technology for both. This technology received the "2017 Monodzukuri Nippon Grand Award (Prime Minister's Prize)."



● Corrosion-resistant Zinc-Coated Steel Sheet ECOGAL Neo™

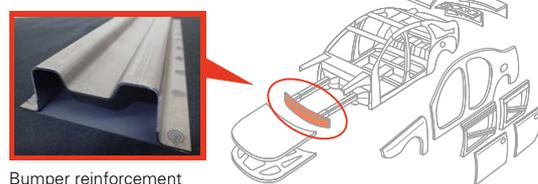
Demand is rising in the construction materials sector for materials that are highly durable, weldable and maintenance-free for both indoor and outdoor environments, triggering demand for corrosion-resistant zinc-coated steel sheets. JFE Steel has developed and introduced ECOGAL Neo™, a 5% aluminum-zinc alloy coated steel sheet that is highly resistant to corrosion. ECOGAL Neo™ offers the same level of formability as conventional galvanized iron but with significantly improved resistance to corrosion. In addition, the newly developed chromate-free film offers an excellent external appearance and functionalities, suitable for potential applications in various other industrial sectors, such as electrical appliances and automobiles.



Representative application: delivery box with ECOGAL Neo™

● 1.5 GPa-grade Cold-rolled Steel Sheet for Automobiles

JFE Steel has developed a cold-rolled steel sheet boasting 1.5 GPa-grade tensile strength, the world's highest tensile strength of any cold-formed automotive part currently available, and it has successfully applied the sheet to bumper reinforcements. The strength of automotive parts significantly contributes to reducing vehicle weight while maintaining excellent collision performance. The energy-conserving aspect of this sheet is highly regarded and has earned the product the 2017 Director-General of the Agency for Natural Resources and Energy Prize in the Energy Conservation Grand Prize.



Bumper reinforcement

● **JNP™ Series Electrical Steel Sheet**

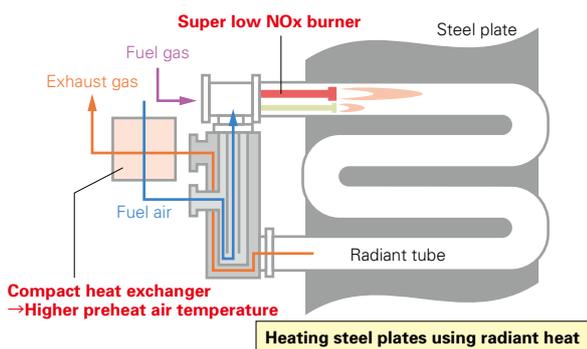
The JNP™ Series non-oriented electrical steel sheet is used for electric motors that drive hybrid vehicles (HEV) and electric vehicles (EV) and help to reduce CO₂ emissions. Using non-oriented electrical steel sheets as core materials in these motors improves motor efficiency as iron loss decreases and torque increases with magnetic flux density. The JNP™ Series achieves high magnetic flux density and low iron loss and has further improved magnetic flux density compared to conventional products. This helps to deliver higher power and efficiency to motors. Various grades are available to suit a wide range of motors. JNP™ was awarded the 34th Technological Development Prize from The Japan Institute of Metals.



Electric vehicle motor

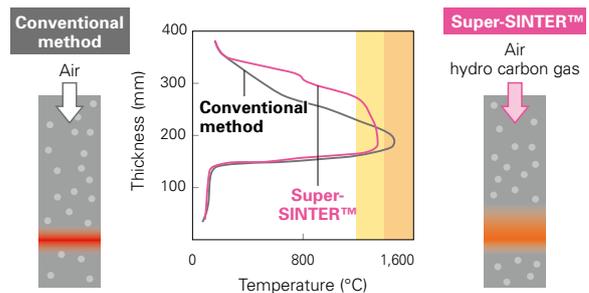
● **Radiant Tube Burner with Effluent Gas Recirculation**

We developed a new burner that uses radiant heat for continuous annealing furnaces in steel plate production. It achieves the lowest level NO_x in Japan and also conserves energy by using a compact heat exchanger. It employs a very unconventional combustion mechanism that recirculates generated exhaust gas inside the tube. Lowering the temperature and the oxygen level during the combustion process reduces NO_x generation. In addition, the heat exchanger, which is highly dense with heat exchanging elements, is extremely compact and ideal as an enhancement installation unit to the system. There have been 162 units installed in annealing furnaces in the Fukuyama district, achieving a 12% reduction in gas emissions, while CO₂ emissions are being reduced by 1,900 tons per year. Additionally, the technology received the 2017 Energy-Efficient Machinery Award.



● **Super-SINTER™/Super-SINTER™ OXY**

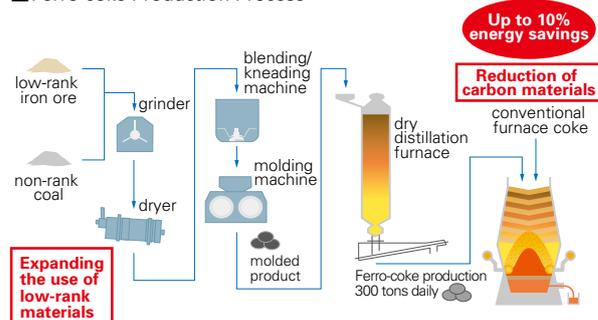
Super-SINTER™ technology was developed to reduce CO₂ emissions from the steel production process. By using hydrocarbon gas to replace part of the coke breeze during ore sintering, the technology significantly enhances energy efficiency during this process. We began using the technology on a commercial basis in a Keihin sinter in 2009, reducing CO₂ emissions by up to 60,000 tons a year. We are now applying the technology to all of our sinters in Japan.



● **Ferro Coke**

JFE Steel Corporation, Kobe Steel Ltd, Nippon Steel Sumitomo Metal Corporation, Tohoku University and Kyushu University have jointly launched NEDO's project, "Technology Development for Eco-friendly Ironmaking Process/Technology Development for an Ironmaking Process Utilizing Ferro-coke." During its planned duration of six years from June 2017, the project will construct a medium-scale plant capable of producing 300 t/day of ferro-coke in JFE Steel's West Japan Works (Fukuyama district) to establish the technology for producing and using ferro-coke.

■ **Ferro-coke Production Process**



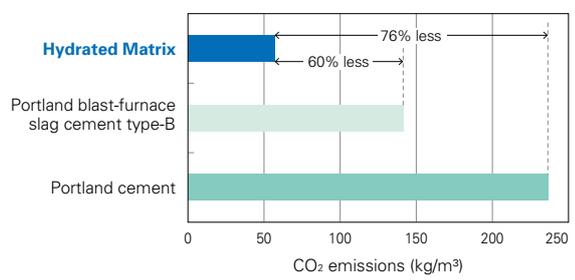
● Contribution to the Reduction of CO₂ Emissions (Steel Slag Hydrated Matrix)

Steel Slag Hydrated Matrix, primarily made of steel slag, can be used as a substitute for concrete without relying on a natural construction aggregate. In addition, unlike cement, it does not require any burning process during production, resulting in the elimination of 75% of CO₂ emissions when used as an alternative material.



Furthermore, the material acts as an excellent adhesion base for marine organisms such as seaweed, so its application could benefit environmental ecosystems.

■ CO₂ Emission Comparison (Hydrated Matrix, Concrete)



● Improving Marine Environments with Marine Stones™

In a joint research project* with the City of Yokohama, JFE Steel has confirmed that steel slag products, including Marine Stones™, provide a highly effective base for nurturing and growing sea organisms while also facilitating the natural cleansing of seabeds and seawater. We will continue to work on this project with the City of Yokohama toward improving the marine environment and restoring marine ecosystems in Yokohama Bay.

*Joint research related to research on techniques to improve a marine life environment and facilitate the natural cleansing ability of seawater near the shores of Yamashita Park.



JFE Shoji Trade

● Biomass Fuel

In response to growing demand for biomass fuels by biomass power generation companies, JFE Shoji Trade imports palm kernel shells to Japan from Malaysia and India.

In addition, as the trend toward reducing CO₂ emissions accelerates, demand for renewable energy is rising, especially for biomass power generation not affected by weather conditions. We will respond to this demand by exploring other types of biomass fuels, such as wood pellets, to ensure a stable supply of biomass fuels.

Wood pellets are a biomass fuel that allows for the effective reuse of wood materials from thinning and pruning forests or waste materials from woodworking operations.

Wood pellets are considered to be ideal as a biomass fuel for renewable energy since the CO₂ emitted by burning them is offset by the CO₂ absorbed during tree growth.

We will continue to supply fuel to biomass power generation companies, including JFE Engineering, and do our part in the JFE Group's overall contribution toward realizing an eco-friendly society.

■ Shipping Bases for Palm Kernel Shells



■ Before Biomass Fuel Is Used (Wood Pellets)



Suppliers are selected with consideration for corporate legitimacy, traceability and sustainability of their products.

● **Composite Biomass Energy Utilization Project**

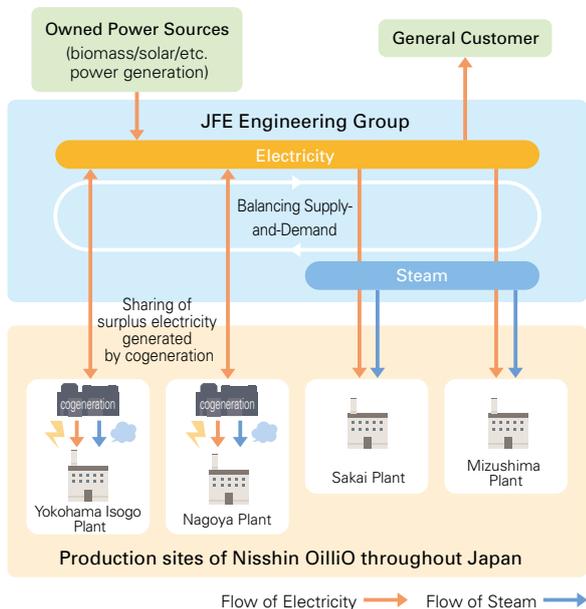
Construction of composite biomass energy facilities in Toyohashi City, Aichi Prefecture was completed in October 2017. These facilities combine the methane fermentation treatment of food waste, human waste/septic tank sludge and sewage sludge, which had previously been treated separately. The plant uses the biogas generated in this process as fuel for electric power generation.



Toyohashi Bio Will

● **Optimization of Energy from Procurement to Supply**

To generate electricity and heat, cogeneration systems will be installed at two production sites of Nisshin OilliO Group Ltd. JFE Engineering will then perform flexible electric power sharing with other production sites of Nisshin OilliO, utilizing the surplus electricity, and its own power sources and/or power transmission network. All energy flow from procurement through supply are optimized, thereby saving energy and reducing CO₂.



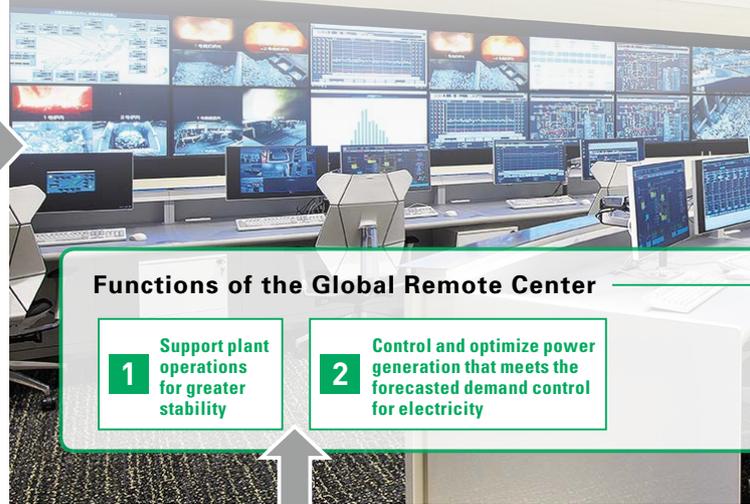
FOCUS

Global Remote Center

● **Leverage AI and Big Data to Optimize Plant Operations,**

JFE Engineering established the Global Remote Center (GRC) within its Yokohama head office. The center integrates the maintenance and remote monitoring of various types of plants such as waste-fueled power generation, solar power generation, biomass power generation, and pipelines around the clock, all of which were previously handled separately.

The GRC supports the operations of clients'

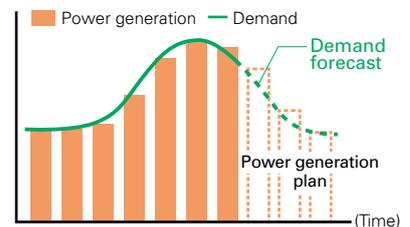


Functions of the Global Remote Center

- 1 Support plant operations for greater stability
- 2 Control and optimize power generation that meets the forecasted demand control for electricity

● **Electricity Retailing Business**

The JFE Engineering Group has started retail renewable energy business through its subsidiary Urban Energy Corporation and by leveraging its Global Remote Center (GRC). In line with the forecasted demand for electricity and the characteristics of power generation plants (solar, waste-fueled,

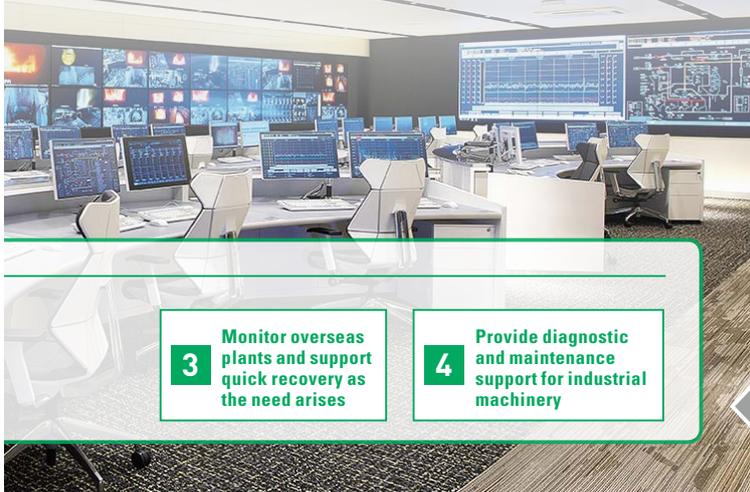




Contributing to the Creation of a Sustainable Society

plants using AI and Big Data. JFE Engineering has constructed the organization to provide enhanced optimum operational solutions for remote monitoring and maintenance across the globe.

By controlling and optimizing the output of renewable energy power generation to match the forecasted demand control for electricity, we ensure stable supply of energy. This in turn leads to expanded use of renewable energy.



3 Monitor overseas plants and support quick recovery as the need arises

4 Provide diagnostic and maintenance support for industrial machinery

etc.), GRC produces the optimal power generation plan for each plant to meet demand, thus ensuring the stable supply of electricity.



JFE Solar Power Shimizu

Waste-fueled Power Generation Plant

Waste is not simply incinerated at waste disposal and treatment facilities; the heat generated from the process of burning waste is used to generate electricity, reducing the impact on the environment surrounding these facilities.



Green Plaza Fujimi

Biomass Power Generation Plants

These plants use resources derived from organic matter as fuel to generate power. Wood materials from thinning forests or palm kernel shells that remain from palm oil extraction are examples of such fuels. Their use prevents an increase in atmospheric CO₂ originating from the burning of fossil fuels.



Green Energy Tsu

Overseas Expansions

Furthermore, we are expanding support for overseas eco-friendly facilities, building waste-fueled power generation plants and water and sewage treatment plants, and providing operational support for them.



Myanmar Waste-fueled Power Generation Plant

Environmental Communication

The JFE Group gives utmost priority to communicating with all stakeholders, including in matters relating to the environment.

Disclosing Environmental Data

The East Japan Works of JFE Steel discloses real-time environmental data on local air and water quality. Visitors can review this information in the first-floor lobby of the Visitor Center in the Chiba District and in the Amenity Hall and the first-floor lobby of the Keihin Building in the Keihin District.



Environmental data display in the Keihin District

Disclosure and Exchange of Information

“ecobeing” Environmental Website

The JFE Group cooperates with the “ecobeing” environmental website, which helps to broaden awareness of eco-activities. The site contains a series of articles featuring persons from different fields. The spring 2017 issue’s “MIRAI SEKKEIZU (a future design map)” includes a special discussion in which Hideki Ishida, Kameishi Takamasa and Gentaro Yui exchange ideas.



Special discussion

Web [ecobeing](http://www.ecobeing.net/) → <http://www.ecobeing.net/> (Japanese only)

Sponsoring “Midori no Komichi” Environmental Diary

The JFE Group sponsors the “Midori no Komichi (Green Trail)” environmental diary project hosted by Green Cross Japan with the hope that children will become more aware of environmental issues by keeping diaries of their activities and thoughts about ecology.

Web “Midori no Komichi” Environmental Diary (Japanese only) → <http://www.midorinokomichi.net/>

Environmental Exhibition—EcoPro 2017

The JFE Group exhibited its environmentally friendly products and technologies at EcoPro 2017, Japan’s largest environmental exhibition, in December 2017. The booth’s theme was “Realizing a sustainable society with JFE technologies.” In addition, the company supported Green Cross Japan by running tours for children, called the “EcoPro EcoKids Tour.”



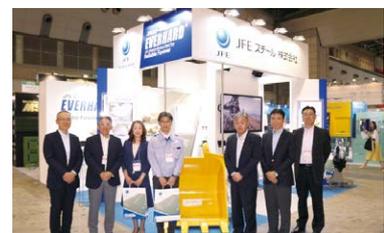
JFE Group’s exhibition booth

Exhibits at the N-EXPO (New Environmental Exposition)

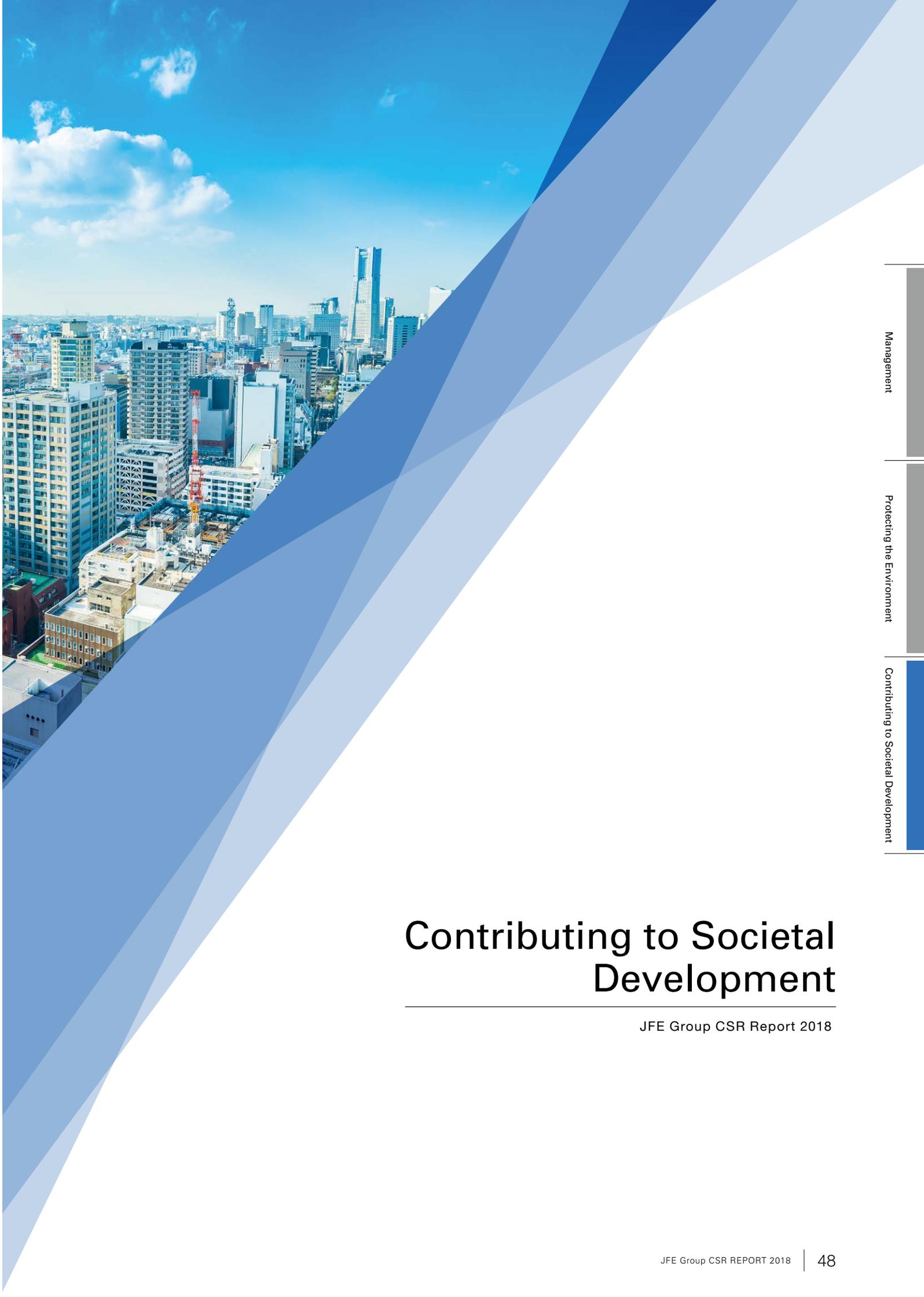
JFE Steel exhibited its EVERHARD™ and JFE-HITEN, abrasion-resistant steel sheets at the 2018 N-EXPO held at Tokyo Big Sight from May 22 to May 25, 2018.

JFE Steel has participated in the event for seven consecutive years to promote its abrasion-resistant steel sheets and high tensile strength steel sheets.

This year our exhibition booth was designed to focus on improving the brand recognition of our products, especially in the construction and industrial machinery industries by displaying Taguchi Industrial’s GUZZILA CUTTER, a hydraulic steel frame cutter, as a representative application of EVERHARD™, as well as guidelines for other products. The high-impact display attracted big crowds every day of the event, with the total number of visitors this year reaching a record high.



Our event team at the exhibition booth



Management

Protecting the Environment

Contributing to Societal Development

Contributing to Societal Development

JFE Group CSR Report 2018

Customers

JFE Standards of Business Conduct (Excerpt)

(1) Provide quality products and services

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

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 of their quality management have been duly certified.

Strengthening Quality Assurance System

S Customer demand for higher quality is stronger than ever. To meet this demand, 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 being continually improved based on the Guidelines for Enhancing Quality Assurance Systems, issued by the Japan Iron and Steel Foundation (JISF). Moreover, in an effort to enhance reliability in its product testing, the company has introduced high-precision equipment and is actively working on reducing human intervention in testing by automating various testing components, including reporting.

JFE Steel has received all quality assurance certifications required for steel products, including the JIS mark and approvals from ship classification bodies, regarding its quality management system based on ISO 9001. In response to customer demand, the company has also received certification under the national standards of relevant foreign countries.

E Products and services that we design, procure, manufacture or construct must comply with all required rules and regulations, and quality must satisfy the needs of our customers. Under this corporate policy, JFE Engineering continually strives to improve the quality of its products and services.

For example, specialists conduct inspections at each phase of a plant construction project, including the design, construction and test-run phases. Immediately prior to final delivery to the customer, a witness inspection is conducted so that the customer can be directly assured of its quality with their own eyes.

In addition, JFE Engineering has published quality-management 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 is raising employee awareness through training while also developing a system for immediately transferring and electronically storing test results in order to prevent data manipulation.

T JFE Shoji Trade is constantly striving to enhance its quality assurance through strict quality management.

Its processing centers in Japan and abroad are systematizing and automating operations to replace manual procedures and hence eliminate human errors.

In addition, employee awareness initiatives help to prevent human error at every stage, including receiving orders, issuing work orders and shipping. The company continues to strengthen quality education for employees, including by introducing internal and external case studies of non-conformance.

Furthermore, JFE Shoji Trade recognizes that product processing is the key to assuring and improving quality and has therefore implemented a quality audit, in which all relevant Group companies in and outside of Japan are specifically audited on quality at least once a year. It is a mechanism for the company to confirm the quality of each processing center and provide advice.

Ensuring Stable Supply

S As in its Sixth Medium-term Business Plan, JFE Steel is carrying forward its effort to enhance its manufacturing capabilities. While strengthening its manufacturing base, the company is also focused on maximizing the performance and increasing the capabilities of the West Japan Works. The strategic investments that exceed the Fifth Medium-term Business Plan, upgrades and ongoing maintenance will be implemented for stable facility operations and production, allowing the company to continue providing high-quality products to customers.

E JFE Engineering is licensed to conduct specific business in various types of construction and is required to assign managing engineers at construction sites to oversee the management of construction technology. A sufficient number of these licensed specialists is essential for the timely execution of construction projects. However, due to the declining birthrate, a growing population of elderly and a generational shift, securing these licensed specialists, especially younger ones, is a major business challenge. The company is always striving to obtain sufficient resources through mid-career hiring of licensed personnel and encouraging employees to acquire qualifications by granting expenses.

T Recognizing that processing and distribution operations represent the key for ensuring stable supply, JFE Shoji Trade is committed to investment in strengthening these operations.

Improving Customer Satisfaction

S ● **First Successful Application of AI in Domestic Industry to Shorten Recovery Time of Steel Production Facilities**

To ensure stable supply to customers, JFE Steel has adopted preventive measures against failures at its steel production facilities and responds quickly whenever a failure occur.

In 2017 the company developed and introduced at some facilities a system combining AI and its independent database, which stores data such as issue resolution manuals and past trouble-shooting logs of experienced employees. Even employees with little experience are able to retrieve the necessary information in order to deal with failures, and the system has a proven track record in shortening recovery time. The company is now introducing it at all of its facilities.

JFE Steel will continue to leverage the latest technologies to improve the quality of its services.

● **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 Steel Structural Materials Solutions Center (THiNK SMART) for infrastructure-related customers 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 develop products that reflect an accurate understanding of customer needs, 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)

● **Unified Customer Care**

JFE Steel regularly conducts customer questionnaires and interviews to draft strategies for greater customer satisfaction. Business strategies are communicated effectively to sales departments, centers, sectors, business divisions, steelworks and research laboratories to facilitate unified customer care and proposals that leverage the collective strengths of the JFE Group.

● **Training Sales Personnel to Excel in Customer Relations**

To strengthen customer-oriented sales efforts, the Sales Department holds training sessions by position and job, according to their work experience, targeting sales personnel from the headquarters and branch offices (i.e., newly appointed sales employees, mid-rank sales employees and office heads). The department also provides group training in Japan for regional employees of overseas offices to enhance job performance. Training goals include developing 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.

E ● Company Assessments Based on Customer Evaluations

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

T ● Meeting Customer Needs

To respond quickly to diversifying markets and customer requests, JFE Shoji Trade is strengthening its supply chain for materials procurement, processing and distribution. In addition, employees receive training to upgrade their abilities to present sophisticated proposals to customers. Furthermore, selected regional employees of overseas offices receive group training in Japan to strengthen the satisfaction of the company's overseas customers.

Promotion of Research and Development

S JFE Steel views automobiles, infrastructure materials and energy as the three key areas for research and development. In each area, the company intends to accelerate the pace of introducing new products and solutions. In regard to its manufacturing process, the company will work on developing innovative manufacturing technologies such as eco-friendly raw material pre-processing. These technological developments leverage data science and robotics to closely align with the needs of customers and society at large. JFE Steel plans to invest 110 billion yen into research and development over the span of three years, starting in 2018.

E JFE Engineering's "create" and "ni-na-u," the foundation for life, support and remain responsible for the foundation for life. In regard to "create," the company developed its own combustion technology for waste-treatment and power-generation facilities. The technology supports stable, clean incineration treatment and generates power at the highest level of efficiency in Japan. As for "ni-na-u," JFE Engineering continues to develop technologies that collect and analyze data from the various types of

plants it operates in Japan as well as technologies that leverage AI to automate plant operations.

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 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, JFE provides education on export security controls and related measures for the employees of Group companies involved in trading.

Internal Awards

The following technical and product developments were awarded in FY2017.

	Prizes/Awards	Awarded Items	Awarded Departments
JFE Steel	Excellence Award, JFE Steel President's Awards	Multi-faceted contributions on the distribution side of SCM for overseas manufacturing bases	Logistics Department and others
		Introduction of innovative technology to descaling lines to achieve high production efficiency	Hot Rolling Department, West Japan Works (Kurashiki District) and others
		Development of the next-generation low-NOx radiant tube burner	Plant Engineering Department, West Japan Works (Fukuyama District) and others
		Establishment of a production base for domestic infrastructure materials and larger sales infrastructure	Products Service & Development Department, Chita Works and others
	Gold Prize, New Product Development Awards	JEFORMA™ Series of Excellent Formable High Strength Steel Sheets	Sheet Products Research Department, Steel Research Laboratory and others
JFE Engineering	Grand Prize, JFE Engineering President's Awards	Establishment of the effluent gas recirculation technique, which directs effluent gas below the incineration furnace grates as air for incineration	Power Machinery Design Department, Engineering Design Center, Environmental Solutions Sector and Research Center of Engineering Innovation

Suppliers

Fair Competition and Trade

Compliant purchasing and procurement activities are critical to becoming a good business partner and nurturing the understanding and trust of suppliers. Each operating company of the JFE Group clearly defines its purchasing and procurement policies and discloses them to suppliers to encourage them to maintain the same high standards.

S ● Basic Policy on Procurement

JFE Steel upholds its Basic Policy on Procurement to conduct purchasing activities with fairness and sincerity and thereby continue earning supplier trust as a good business partner.

Web [Purchasing and Procurement Policies \(Japanese only\) →
http://www.jfe-steel.co.jp/company/purchase_policy/index.html](http://www.jfe-steel.co.jp/company/purchase_policy/index.html)

We purchase raw materials after confirming that suppliers are not using conflict minerals.

● Supplier Support for CSR

JFE Steel requests suppliers to cooperate with the company's efforts to prioritize environmental protection, safety, disaster prevention, compliance and other matters that fundamentally impact the business. Ultimately, JFE Steel believes that such efforts increase stakeholder satisfaction and lead to strengthened corporate value.

JFE Steel's Requests to Suppliers Regarding CSR Initiatives

- ① Develop an organization for promoting CSR
- ② Comply with laws, regulations and social norms, and information management
- ③ Observe human rights and occupational health and safety
- ④ Respect the global environment
- ⑤ Provide safe and competitive products and services

● Win-win Relationships with Suppliers

JFE Steel establishes win-win relationships with our suppliers by leveraging their ideas for improving materials, designs, shapes, specifications and production methods. The company's value-analysis activities allow them to propose how to reduce costs, improve materials functions, and upgrade quality, safety and work efficiency. The company then strives to implement the ideas wherever possible.

E ● Fair and Sincere Procurement

JFE Engineering, viewing its suppliers as key partners in achieving mutual growth, strives to nurture mutual trust and reinforce partnership relationships. The company collaborates with suppliers on CSR initiatives and upholds its Purchasing and Procurement Policies as a standard for fair and transparent procurement activities.

Web [Purchasing and Procurement Policies \(Japanese only\) →
http://www.jfe-eng.co.jp/information/procurement.html](http://www.jfe-eng.co.jp/information/procurement.html)

JFE Engineering requests that suppliers implement the following measures.

JFE Engineering's Requests to Suppliers Regarding CSR Initiatives

- ① Comply with laws, regulations and social norms
- ② Implement thorough information management
- ③ Provide safe and competitive products and services
- ④ Observe human rights, work environments and occupational health and safety
- ⑤ Respect the global environment
- ⑥ Develop an organization for promoting CSR

T ● Ensuring a Safe, Fair Supply Chain

Corporate social responsibility (CSR) is a pivotal element in JFE Shoji Trade's supply chain for the provision of products, functions and services through its global business. Customer demand for CSR-based procurement is increasing every year. In addition to its initiatives for quality, stable supply, safety and reasonable prices, the company is enhancing support for the global environment, human rights and occupational safety and health.

Shareholders and Investors

JFE Standards of Business Conduct (Excerpt)

(2) Be open to society

Disclose corporate information actively and engage in constructive dialogues with diverse stakeholders to enhance our corporate value.

Returns to Shareholders

The JFE Group positions returns on shareholder investment as one of its top priorities. Profits are basically returned in the form of dividends. The Group's basic policy under its Sixth Medium-term Business Plan is to strengthen the domestic profit base and expand overseas businesses and their profitability to achieve sustainable growth for the Group. In addition, we intend to maintain our payout ratio at about 30% by improving profitability and cash flow toward realizing the sound financial standing required for an A international credit rating.

Proactive Information Disclosure

The JFE Group strives for fair disclosure based on established internal policy. We actively communicate with investors by holding meetings when announcing financial results, medium-term business plans or other important information. The executive directors explain the announced results and answers questions at investor meetings, and they also hold small-group briefing sessions and conducts individual interviews with institutional investors and securities analysts. In addition, they regularly visit investors in Japan and overseas, including institutional investors in North America and Europe.

For individual investors, briefings are held at the branch offices of securities firms around Japan. The Group also distributes e-mails regarding IR information. Important press releases and Notices of the Ordinary General Meeting of Shareholders are provided in English for overseas investors.

In addition, JFE Holdings is committed to fair disclosure of information under its disclosure policy.

Web [Disclosure Policy](https://www.jfe-holdings.co.jp/en/investor/management/disclosure-policy/index.html) →
<https://www.jfe-holdings.co.jp/en/investor/management/disclosure-policy/index.html>

Major IR Activities

Activity	Participants
Investor meetings	Approx. 600
Individual interviews with institutional investors and securities analysts	Approx. 400
Briefings for private investors at securities firms	Approx. 1,000 in 14 briefings

Web [Information for Shareholders and Investors](https://www.jfe-holdings.co.jp/en/investor/management/disclosure-policy/index.html) →
 In Japanese: <https://www.jfe-holdings.co.jp/investor/disclosure-policy.html>
 In English: <https://www.jfe-holdings.co.jp/en/investor/index.html>

Enhancing Communication with Shareholders

JFE Holdings created its Investor Relations and Corporate Communications Department in April 2015 to facilitate more interactive communication with diverse stakeholders. The collection and dissemination of integrated information is being enhanced to provide management with more useful information for constructive dialogues with shareholders, including individual investors as well as domestic and foreign institutional investors. General meetings of shareholders are opportunities for dialogue with shareholders, so JFE sends invitations at the earliest possible date to maximize attendance and avoid overlapping with the shareholder meetings of other companies.

The company has been posting an invitation on its website at the earliest possible date while allowing online voting for shareholders who are unable to attend. Also, plant tours and company briefing sessions are organized to foster shareholder understanding of the JFE Group.

In FY2017, workplaces of JFE Steel, JFE Engineering and Japan Marine United held such events for about 2,000 shareholders. In FY2018, such activities will continue along with direct communication with shareholders to deepen their understanding of the JFE Group.

Local Communities

JFE Standards of Business Conduct (Excerpt)

(3) Work with communities

Actively contribute to host communities as a good corporate citizen by emphasizing harmony and cooperation.

Local Activities

● Host Communities

Every year, the JFE Group opens its manufacturing facilities to residents in local host communities for demonstrations, tours and other events.

■ On-site Events in FY2017

Location	Event	Date	Attendees
East Japan Works, Keihin	Keihin Community Festival	May 28	48,000
West Japan Works, Kurashiki	JFE West Japan Festival in Kurashiki	November 3	90,000
West Japan Works, Fukuyama	JFE West Japan Festival in Fukuyama	May 14	83,000
Chita Works	Handa Community Industrial Festival	November 11	21,000



JFE West Japan Festival in Kurashiki

In addition, on-site recreational facilities are made available for community sports such as soccer, baseball, volleyball and basketball as well as other events sponsored by Group companies. Coaching sessions are offered by company baseball and track teams, which compete in Japan's top-level corporate leagues. Such activities promote sports and health as well as stronger relationships with host communities.

S ● Tours of Steelworks

Every year, JFE Steel invites over 100,000 guests, mostly elementary and junior high school students from host communities, to tour steel production sites at each steelworks, in conjunction with festivals and other events.

● Education at Elementary Schools

JFE Steel East Japan Works conducts plant tours for students at nearby elementary schools. In addition, company employees visit schools to give lectures on steelmaking processes, the features of steelworks, environmental initiatives and other topics to deepen understanding of the steel industry. These lectures have been given to over 150 classes since its start in FY2012. In FY2017, the company conducted the first class at a school for hearing impaired children.



Visiting lecturer at Miyazaki Elementary School in Chiba City

S E ● Initiatives to Preserve Biodiversity

The JFE Group engages with members of the community in activities to preserve biodiversity.

JFE Steel has opened its Environment Pond at the Chita Works to the community for a firefly festival every year since 2014. Children at the event have the opportunity to release fireflies. JFE Engineering regularly holds events for observing and studying the natural environment, including the behavior and habitats of aquatic life, after inviting children and their parents to capture water creatures in a biotope along the JFE Dragonfly Path in the Tsurumi Works.



Observing aquatic life

Support for External Organizations

● UN World Food Programme

The JFE Group supports activities of the Japan Association for the World Food Programme, an NPO-accredited supporter of the UN World Food Programme (WFP), which works to eliminate hunger.

● Supporting Training for Foreign Medical Professionals

Toranomon Hospital in Tokyo, with the assistance of private corporations including the JFE Group, manages the Japanese Council for Medical Training to provide training opportunities to foreign doctors. The program invites doctors from developing countries, primarily in Southeast Asia, to study in Japan and then return home to promote enhanced medical standards. This also fosters stronger relationships between those nations and Japan.

● Japanese Foundation for Cancer Research

Since its establishment in 1908, the Japanese Foundation for Cancer Research has upheld its basic philosophy of aiming to improve the well-being of people everywhere by achieving better cancer control. The foundation, which is supported by the JFE Group, has played a leading role in research and treatment as well as human resource development in Japan.

Support for Youth Development

● Japanese Language Speech Contest

The All-China Japanese Speech Contest for students in China has been held since 2006 to further Japan-China relations through language and communication. The JFE Group supports the contest as a way to promote stronger international exchange.



Contest to help build the friendship between Japan and China

S ● High School Essay Contest

The Japan Science & Engineering Challenge is a national science-paper contest for high school and technical college students. Under the sponsorship of the Asahi Shimbun Company and TV Asahi Corporation, the contest has been supported by JFE Steel since 2006 to nurture future scientists and engineers.



2017 JFE Steel Award recipients Chihiro Ota (left) and Natsuno Shimoyama (right) of Notre Dame Seishin Gakuen Seishin Girls' High School

● Career Education for Students

As part of career education for high school and junior high school students, JFE Steel and Kawasho Foods Corporation, a member company of the JFE Shoji Trade group, cooperate with the School Support Center, a specified Nonprofit Corporation, to invite students for training. The participants learn how society is supported by specific kinds of work as well as the products and services related to such work.

Since 2006, JFE Steel has participated in the Keizai Koho Center's "Business Training for Japanese School Teachers." Teachers from primary, junior high and high schools learn about business operations, human resource development, safety and environment-protection-related initiatives, among other topics, with the intention of sharing that knowledge with their students and leveraging it for better school management. In addition, some facilities invite local junior high students and host work-experience sessions.

In addition, JFE Engineering held a plant tour for female junior high, high school and university students to encourage them to pursue careers in science and technology.



Career education for junior high and high school students

● **FY2017 Internship Achievements**

The JFE Group annually hosts many trainees and interns from overseas to help them gain practical experience at plants as well as design and construction sites. They also participate in group work.

■ **Number of Interns Accepted by Each Operating Company**

JFE Steel	JFE Engineering	JFE Shoji Trade
Approx. 310	Approx. 190	Approx. 760

T ● **Supporting Elementary Schools in Ghana and Nigeria**

Since FY2011, JFE Shoji Trade and its subsidiary Kawasho Foods Corporation have supported elementary schools in the West African countries of Ghana and Nigeria. In FY2017, they donated 700 sets of desk chairs, 17,000 notebooks and 12,500 cans of food.



Naosuke Oda, president of JFE Shoji Trade, with students at an elementary school in Ghana

● **Supporting School Meals in Developing Countries**

JFE Shoji Trade participates in an activity led by TABLE FOR TWO International, a specified Nonprofit Corporation, under which employees donate 20 yen for each designated meal purchased at the company's cafeteria. The donations help pay for school meals in developing countries.

JFE 21st Century Foundation

The JFE 21st Century Foundation was founded in 1990 through a donation from the JFE Group (the former Kawasaki Steel) to operate as a public-service corporation that contributes to society. It engages in various public services, such as supporting research at universities and cultural development.

Web [JFE 21st Century Foundation → http://www.jfe-21st-cf.or.jp/eng/](http://www.jfe-21st-cf.or.jp/eng/)

● **Support for Technology Research**

The foundation has been highly acclaimed by many universities for its support of technology research since FY1991.

In FY2017 it fielded 169 grant requests and provided a total of 52 million yen in the form of grants valued at two million yen each for 13 projects involving iron and steel technologies and 13 projects related to environmental technologies, including those designed to mitigate global warming.



Presentation ceremony for university research subsidies in FY2017

● **Support for Asian History Studies**

The foundation began awarding grants in support of Asian history studies at Japanese universities in FY2005.

In FY2017, 75 applications were received and 10 grants worth 1.5 million yen each were awarded.

■ **Grants: Cumulative Number and Value**

Field	Number	Value
Technology Research	581	1,169.8 million yen
Asian History Studies	109	163.5 million yen

● **Support for Regional Activities**

The foundation financially sponsors community cultural activities including music, art, traditional events, community revitalization, community activities and the conservation of cultural property.

In FY2017 it sponsored events in cities across Japan and overseas, including Chiba, Kawasaki, Kurashiki and Fukuyama as well as Jiaying in Zhejiang Province, China.

● **Supporting the Japan Overseas Educational Services Writing Contest and Anthology Donation**

The Japan Overseas Educational Services organizes contests in the areas of essays, poems, tanka and haiku for Japanese students attending elementary and middle schools overseas. The JFE Group has been cosponsoring the contest by offering JFE 21st Century Foundation prizes since FY1991. The foundation also donated 850 copies of "Chikyū ni Manabu" (Learn from the Earth), a collection of the winning entries again in FY2017, to 673 elementary and middle schools and 86 public libraries in the regions where the Group operates its steel business.

Employees

JFE Group's Basic Policy on Human Resource Management

- 1 Respect Human Rights and Facilitate Fair Management of Human Resources**
 The Group manages human resources fairly by respecting the human rights of all employees and nurturing employees who embrace the Group's corporate values and standards of business conduct.
- 2 Foster a Corporate Culture that Nurtures People and Promotes Satisfying Workplaces**
 The Group facilitates interactive communication among employees to cultivate a corporate culture that nurtures human resources and creates safe, attractive environments where everyone can enjoy working.
- 3 Diversify Human Resources**
 The Group ensures that diverse all people, including women, non-Japanese, the elderly and the disabled, can demonstrate their full potential.
- 4 Recruit and Steadily Nurture Excellent Human Resources**
 To survive in an increasingly complicated and diversified global environment, the Group steadily recruits diverse, high-quality skilled human resources, ensures that they receive the skills and knowledge necessary to continue strengthening the Group's technological capabilities, and nurtures their global capabilities.

JFE Group Health Declaration

- 1 JFE, recognizing that safety and health are fundamental for fulfilling its mission, creates workplaces in which every employee can work with vigor.
- 2 JFE and its health insurance union work together to advance initiatives for maintaining and upgrading the physical and mental health of employees and their families.
- 3 JFE gives top priority to safety and health and to creating a health culture in which each employee takes personal responsibility.

Respect for Human Rights in the Workplace

The JFE Group, viewing respect for human rights as both a corporate social responsibility and a foundation of its business, works to raise awareness of human rights among all employees. Specific examples include appointment of employees to oversee human rights education at each JFE Group company, implementation of human rights training courses, guaranteed employment opportunities and promotion of fair human-resource management. Harassment of a sexual or power nature, or on any other basis, is prevented through measures including company regulations, training, workplace posters and hotlines staffed by men and women at each business location. During the annual Human Rights Week, leaflets with messages from senior management are distributed and employees are encouraged to submit slogans.

Workstyle Reform

Management of the JFE Group recognizes that creating workplaces to provide dignity and job satisfaction for all is essential for maximizing the potential of individuals. The JFE Group carefully recruits and nurtures human resources to support sustainable growth and is advancing reforms to realize more flexible workstyles for everyone.

S ● Workstyle Reform

JFE Steel is accelerating its efforts to enhance productivity and respond to more diverse needs of employees in their workstyles to help drive initiatives such as strengthening its manufacturing base and expanding overseas. Specific initiatives have been implemented to improve employee awareness and cultivate an organizational climate in which everyone can maximize their abilities. These include designating days in which employees are encouraged to leave work on time, conducting pilot programs in standardizing the number of hours between work shifts* and work-at-home systems, and encouraging employees to take paid leave.

*A program to set a certain length of time between clocking out and clocking in on the next day to protect an employee's private life and sleeping hours.



Employees arrange their own schedules and choose the day when they will leave on time automatically.

E ● Nurturing a Corporate Culture of Coming Early and Leaving Early

JFE Engineering is striving to nurture a corporate culture of coming to work early and leaving early by designating 8:00 am to 4:45 pm as its standard working hours and in principle prohibiting work after 8 pm. Other initiatives include planning work and vacation schedules through discussions between employees and their supervisors and designating days when employees are encouraged to take paid leave or leave work on time. Telecommuting has been implemented to facilitate flexibility in workstyles. Now a working environment is in place in which employees

can choose to work in the office or in one of the dozen shared offices around the country owned by a partner real-estate company. JFE Engineering's next goal is to achieve a five-day workweek in its construction operations where it is more difficult than in other departments for employees to take days off.

T ● Change of Work Time

Under the slogan "Change of Work Time," initiatives have been implemented to reduce work hours, such as designating Wednesdays as the day to encourage everyone to leave on time, prohibit all work after 10 pm, and also encourage taking paid leave. To support more diverse workstyles, JFE Shoji Trade changed our flexible working hour program in April 2016 by setting the core worktime between 11 am to 2 pm, and by introducing trial programs such as working at home for employees pressed for time due to childrearing or nursing duties.

Operational Reforms

S ● Upgrading Mission-critical Systems

Since FY2016, JFE Steel has been upgrading mission-critical systems at each steelworks. The systems are being standardized to streamline processes from order acceptance to production and delivery. Integrating the databases of all production sites leads to better coordination between steelworks. And this allows for the realization of our ideal, "virtual one steel works," toward facilitating optimized company-wide production planning so that we can respond to customer needs faster and more flexibly.

E ● Smart-Work Project

JFE Engineering has been actively working on operational reforms since August 2014 as part of its "SHAPE UP" project. To further expand this effort, the company set up its "Office of Smart-Work Promotion" in April 2018.

By leveraging various IT tools and systems, and creating an unconventional working style in terms of time, location and method, the company aims to achieve both work-life-balance and improved productivity while maximizing overall output.

Also, in order to achieve a five-day workweek at construction sites, JFE Engineering is working on operational reform and efficiency at these sites.

T JFE Shoji Trade will continue to drive its J-SLIM program, which is an operational reform aimed at increasing work efficiency and performance in four focus areas: systems, company-wide management, working environments and line work. In 2018, the company started one of the major initiatives in this program, which is to examine and introduce the latest technology tool RPA (software that automates manual operations carried out on terminals). Where this was already implemented, the company is seeing good outcomes such as reduced operational time and improved service levels. JFE Shoji Trade will continue with its effort to think outside of the box and re-examine how work is being done, and also reform the mindset of its officers and employees to reform its corporate culture.

● Invigorating Workplaces through Small Group Activities

S JFE Steel has approximately 1,500 small groups that carry out J1 Activities* for quality and work improvement. In addition, the JFE Family Result Reporting Conference, which includes participation from domestic and overseas Group companies, is held twice a year. Also, groups selected through competition are given opportunities to go overseas as incentives.

*Designed to turn JFE into an excellent company and propel it to the number one position in its industry (called JE1 Activities at JFE Engineering).

E JFE Engineering has about 190 teams and 1,600 employees, including those of group companies worldwide, involved in JE1 Activities. The results of these activities are showcased at a company-wide competition held at the end of the fiscal year. Activities focused on topics such as quality, efficiency, safety or costs contribute significantly to workplace vitality and corporate performance.

T Since 2012, JFE Shoji Trade has been conducting J1 Activities in production divisions of its affiliate companies in Japan as a means of improving their problem-solving skills in areas such as safety, quality, cost, operations and delivery target. The company holds annual competitions in which about 20 teams from the east and west districts report their activity results and compete against each other. Awards are given to the highest achieving teams. The company will continue to promote J1 Activities to improve workplace vitality and performance.

Workforce Diversity

By designating workforce diversity as a key business objective, the JFE Group is promoting efforts to maximize the potential of employees regardless of gender, nationality, creed, lifestyle or family background.

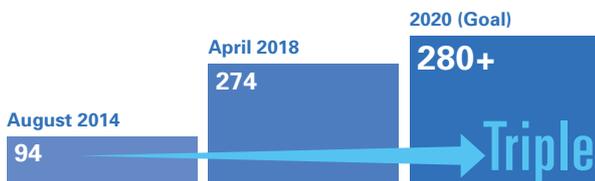
● Company Policy Explained by the President

The president of JFE Holdings has endorsed the Declaration on Action that was introduced by a group of male leaders in Japan who intend to create “A Society in which Women Shine” with the support of the government’s Cabinet Office Gender Equality Bureau. He also announced additional measures to support the professional development of female personnel, thereby communicating both inside and outside the company that women can play active roles at JFE.

● Supporting Women in Professional Development

The JFE Group is implementing a broad range of initiatives to support female employees, such as increased hiring, enhanced childcare-support programs that significantly exceed statutory requirements, and training and education. The Group has set a target to triple its number of women in managerial positions by 2020. As of the end of August 2014, there were 94 female managers, or 1.8% of all managerial positions, at JFE Holdings and its three operating companies. By April 2018, the figure increased to 274, or 4.9%, much closer to the target.

■ Female Managers in the JFE Group: Actual and Target



The JFE Group formulated an action plan to support women in their professional development in compliance with the Act on Promotion of Women’s Participation and Advancement in the Workplace (enforced in April 2016), based on which the company discloses relevant information. In recognition of its efforts to encourage the empowerment of women, JFE Holdings was selected three times as a “Nadeshiko Brand*” during FY2013–FY2016.

*The Nadeshiko Brand represents a joint initiative by the Ministry of Economy, Trade and Industry and the Tokyo Stock Exchange. It recognizes exemplary efforts by companies to encourage women to play active roles and continue working long-term. The targets are representative companies from business sectors listed on the TSE first section.

● Activities by Diversity Promotion Sections

To ensure the consistent promotion of diversity, each operating company has a Diversity Promotion Section to organize educational activities, such as rank-based training and women’s exchange meetings, and to share and implement best practices across the Group.

● Key Initiatives

S JFE Steel provides career support and management training for managers and other employees to cultivate a culture in which diverse human resources can demonstrate their full potential. Its steelworks employ more than 330 females who are currently working on-site. The company supports employees who are using childcare and nursing care by providing its childcare facilities (opened in the Chiba district in April 2017 and Kurashiki and Fukuyama districts in April 2018) and nursing care seminars.

E JFE Engineering actively hires personnel with diverse characteristics and values, as well as people from other business sectors. The head office regularly provides training to about 100 regional employees of overseas subsidiaries to cultivate mutual understanding and transcend differences in culture and customs. The personnel system was revised in 2013 to abolish employee rankings based on operational tasks, thereby broadening career paths for females.

T JFE Shoji Trade is expanding opportunities for female employees by promoting them to managerial positions, expanding clerical categories and revising duties. It is also supporting career development through enhanced training programs. Management training in Japan is provided for employees hired overseas to promote global personnel development and increased interaction. The company is creating increasingly sound and flexible working environments by introducing a system for working at home, expanding nursing care support, encouraging employees to take paid leaves and other efforts.

● Employment of People with Disabilities

The JFE Group has three special subsidiaries, JFE Apple East Corporation, JFE Apple West Corporation and Mie Data Craft Co., Ltd., to employ people with disabilities and create enjoyable workplace environments for them.

■ Employment of People with Disabilities (as of June 1 of each year)

	(%)				
	2014	2015	2016	2017	2018
JFE Steel	2.16	2.25	2.24	2.34	2.33
JFE Engineering	1.81	2.01	1.59	2.01	2.14
JFE Shoji Trade	2.30	2.25	2.11	1.86	2.20

● Reemploying Retirees

The JFE Group reemploys people after mandatory retirement at age 60, largely to ensure that the skills and experience of veteran employees are handed down. In the spirit of Japan's Act on Stabilization of Employment of Elderly Persons, the Group has created a system for all employees to work until the age of 65. As of April 2018, 1,220 elderly employees, about 6% of the total, are working at JFE Steel, JFE Engineering and JEF Shoji Trade.

S For an enhanced work-life balance, JFE Steel employees can choose full-time employment or shorter workweeks after reaching their retirement age.

E JFE Engineering created the Skilled Partner Program to rehire employees who want to continue working after mandatory retirement at age 60.

T For an enhanced work-life balance, JFE Shoji Trade employees who reach retirement age may choose from a variety of working arrangements, including full-time employment, shortened workweeks and shortened daily work hours.

● Respect for Sexual Minorities (LGBT)

Under the Diversify Human Resources section of its Basic Policy on Human Resource Management, the JFE Group is cultivating a corporate culture that accepts diversity, including sexual minorities, through training to deepen awareness of human rights as well as position-specific curriculums. In FY2017, Group-wide LGBT training for human resources employees was conducted with external instructors.

In addition, the Group recently included sexual minorities in the compliance guidebook it distributes to all employees as a means of promoting common understanding.

Securing Diverse Human Resources

Sixth Medium-term Business Plan (FY2018–FY2020):

Around **1,040** people

FY2018 Results:

1,050 people

- Women in positions with prospects for promotion: 16% (59 out of 376)
Of the above, those in white-collar positions: 32% (35 out of 110)
- Mid-career and year-round recruits: 18% (184 out of 1,050)
Of the above, recruits in positions with prospects for promotion: 26% (97 out of 376)
Of the above, mid-career recruits in on-site positions at steelworks: 13% (85 out of 656)
(three operating companies, excluding their subsidiaries)

To ensure sustainable growth, the JFE Group steadfastly recruits from a diverse pool of applicants and actively hires women, foreign nationals and mid-career personnel, and recruits year-round.

■ Recruitment Results (Three Operating Companies, Excluding their Subsidiaries) in FY2018

	Career-track positions			On-site and clerical positions	Total
	White-collar	Technical	Total		
Male	75	242	317	674	991
Female	35	24	59	91	150
Total	110	266	376	765	1,141
Ratio of women (%)	31.8	9.0	15.7	11.9	13.1

■ Target Ratios for Female Recruits

	Position	Target
JFE Steel	Career-track white-collar positions	At least 35%
	Career-track technical positions	At least 10%
	On-site positions for regular recruitment	At least 10%
JFE Engineering	Career-track position	At least 20%
	Production/construction positions (technical)	At least 5%
JFE Shoji Trade	Career-track position	At least 25%

■ Employee Data (Consolidated)

As of March 31, 2018

Category	JFE Steel	JFE Engineering	JFE Shoji Trade
Employees	44,554	9,307	7,333
Male	39,207	8,089	5,339
Female	5,347	1,218	1,994
Management Positions	11,112	2,842	1,532
Male	10,545	2,719	1,336
Female	567	123	196
Ratio of women in management positions (%)	5.1	4.3	12.8

Scope: Consolidated subsidiaries (JFE Steel: 156, JFE Engineering: 58, JFE Shoji Trade: 101)

Employee Data (Non-consolidated)

Category	JFE Steel	JFE Engineering	JFE Shoji Trade
Employees	15,578	3,752	955
Male	14,327	3,267	606
Female	1,251	485	349
Management positions	2,715	2,215	612
Male	2,602	2,100	574
Female	113	115	38
Women in management positions (%)	4.2	5.2	6.2
Recruits	837	147	66
Male	734	127	39
Female	103	20	27
New graduates	732	77	57
Mid-career	105	70	9
Years employed	16.5	13.6	12.1
Male	16.3	13.6	12.1
Female	18.5	13.6	11.9
Job turnover rate (%)	2.03	0.94	2.1
Rehired employees	1,129	321	17
Average annual leave taken (days per year)	15.5	17.0	12.3
Average overtime (hours per month)	27.8	26.8	26.5
Employees working shorter hours for childcare (aggregated)	146	58	13

- As of April 1, 2018. Other figures are as of FY2017.
- Management positions at JFE Engineering and JFE Shoji Trade include employees on loan.
- Job turnover rate: percentage of employees who voluntarily choose to resign from the organization.

Human Resource Development

The JFE Group collectively carries out human resource development with an emphasis on nurturing the capacities of each employee and cultivating global human resources to support the expansion of our overseas business.

S Utilizing Skill Data for Training Programs

The company updated the evaluation system it uses at manufacturing sites to quantitatively analyze the skill level of each employee. By focusing on infrequent or irregular tasks involving relatively low skill levels, the training program is linked organically to accumulated skill data, backed by practical guidance from full-time instructors (technical experts) who possess advanced skills.

E Training Opportunities and In-house Recruitment

The company has adopted an in-house recruitment system for employees who are especially interested in particular positions, allowing them to challenge themselves and make the most of their capabilities.

T Diverse Measures for Employee Development

Each employee is provided with a planning sheet that clearly defines their individual training points and goals. Also, the IT Literacy Training program is conducted

at each job level to engage employees in digital innovation and help them learn how to assess the businesses they are engaged in and devise new ideas.

Developing Global Personnel

In addition to hiring and developing non-Japanese for career-track positions in Japan and hiring more local personnel overseas, the JFE Group is enhancing programs for Japanese employees to gain overseas study and training. The company is also developing younger employees through practical experience by dispatching them on overseas assignments.

Personnel Development Programs

Company	Overseas Program
S E T	Study abroad
S T	Short-term overseas language training
S E T	Overseas assignments for younger employees
S	Dispatching engineers to international conferences
S E T	Training for regional employees of overseas offices
S E	Internship for international students

Employee Health and Safety

Providing for the health and safety of employees is a basic requirement of companies, particularly manufacturers, and is fundamental to the continued existence of any company. The JFE Group adheres to the philosophy of safety first, and, together with its group companies and business associates, works to consistently maintain safe working environments and secure workplaces for all employees.

In addition, the Group exchanges ideas on safety and health with the labor union through its Occupational Safety and Health Committee.

Lost-work Injuries and Severity (Rates)

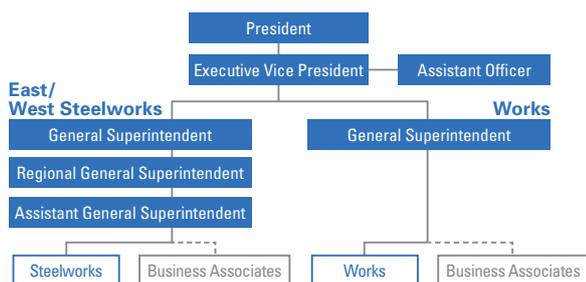
		FY2013	FY2014	FY2015	FY2016	FY2017
JFE Steel	Lost-work injuries	0.06	0.15	0.15	0.21	0.17
	Severity	0.01	0.09	0.16	0.15	0.15
JFE Engineering	Lost-work injuries	0.73	0.42	0.28	0.19	0.71
	Severity	0.03	0.40	0.01	0.3	0.02
JFE Shoji Trade Group	Lost-work injuries	0.26	0.65	0.67	1.16	1.22
	Severity	0.08	0.07	1.02	0.41	0.97
Manufacturing industry average	Lost-work injuries	0.94	1.06	1.06	1.15	1.02
	Severity	0.10	0.09	0.06	0.07	0.08

JFE Steel and JFE Engineering: parent company, business associates and contractors in Japan; JFE Shoji Trade: parent and consolidated subsidiaries, business associates and contractors in Japan

S In FY2018, JFE Steel is following three basic strategies: promote the autonomous resolution of issues, strengthen health and safety at business

associates and Group companies and develop activities in line with the Group's Health Declaration. For example, JFE Steel's safety level was inspected by an external organization, Du Pont, and the company received feedback on its auditing methods. With this feedback, an internal audit system was implemented and applied to all parts of the company. In addition, the company plans to obtain ISO (JIS) 45001 certification, an international standard for occupational health and safety management systems, and is scheduled to be certified soon. Iterating through the PDCA cycles of these safety and health initiatives, the company is working to establish a corporate culture of safety that is voluntary and independent.

■ Governance Structure for Safety and Health



E JFE Engineering strives to eliminate accidents at its construction and operating sites and manufacturing plants. By establishing "priority items to be shared across the company" to which all employees and all members of associated companies adhere and promoting "identification of sources of danger and safety measures based on risk assessments" in accordance with each operation, the company is committed to disaster elimination. Additionally, driving efforts such as "physical and mental health promotion" and "creation of comfortable working environments" help to ensure the health of employees and raise the level of occupational health. In 2016, the company obtained OHSAS 18001 certification, an international standard for occupational health and safety management systems, for its construction activities in Japan and overseas as well as its manufacturing operations at the Tsurumi and Tsu Works.

T JFE Shoji Trade is actively working on eliminating unsafe operations that could lead to severe accidents and targeting zero severe accidents at its processing sites such as coil centers.

For each of its group companies, JFE Shoji Trade assigns a safety manager, who is responsible for improving safety at each company. Every safety manager

is also responsible for activities such as 1) strengthening on-site patrols, 2) establishing safety monitors, 3) enforcing risk assessment and hazard prediction, and 4) identifying unsafe operations. Safety managers meet every other month to share information.

Through these initiatives, the entire JFE Shoji Trade Group unites its efforts to continually raise the level of safety management and maintain safe working environments.

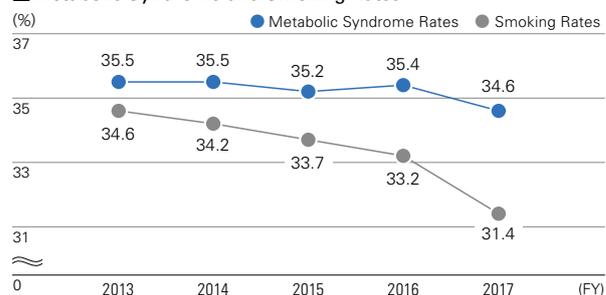
Employee Health

We have made the JFE Group Health Declaration (page 57) and collaborate with its health insurance union and industrial health staff to strengthen employee health so that everyone can work with vigor.

● Physical Health Initiatives

- Ensure the implementation of regular physical examinations and strengthen cancer screenings.
- Prevent aggravation of lifestyle diseases by conducting metabolic syndrome checkups and offering health guidance.
- Encourage participation in sports by supporting club activities and using the Powering Up Health Care program of the health insurance union.
- Promote non-smoking areas and maintain separate areas for smokers and non-smokers in buildings. Provide guidance to help employees quit smoking through industrial physicians and public health nurses.

■ Metabolic Syndrome and Smoking Rates



Data on those aged 40 or older and insured by the JFE Group's health insurance union

● Maintaining and Promoting the Health of Employees' Families

The JFE Group strengthens the health of employees and their families by, for example, encouraging spouses to undergo health examinations. The rate of health examinations for dependents (age 40 or older) has been steadily increasing over six years, to 43.7% in FY2017, up 9.9 points from 33.8% in FY2011.

Mental Healthcare

The JFE Group conducts four basic initiatives to maintain the mental health of employees: “self-care” for workers who strive to remain aware of stress and take preventive measures; “care by management supervisors” who provide advice to subordinates; “care by industrial health staff” who support employees, managers and supervisors; and “care by human resources outside workplaces,” including specialist clinics and individuals. JFE’s health insurance union also provides mental health counseling, including a 24-hour hotline for employees and their families (spouse and dependents).

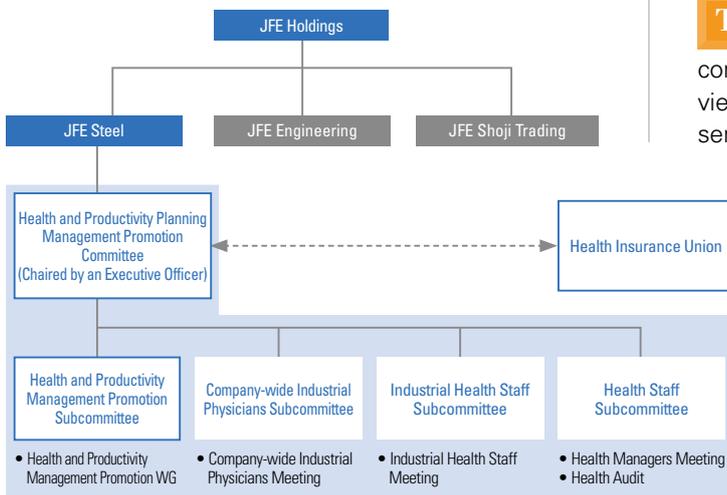
Active Exercise

JFE Steel business sites offer the Active Exercise program, which the West Japan Works designed to help people increase their physical strength and prevent injuries due to falling. The program’s effectiveness in preventing occupational accidents and improving health has even attracted attention outside the company, so it is being shared as a contribution to society.

Company-wide Goals and Follow-ups

To drive initiatives regarding maintaining and improving the health of employees and their families, JFE Steel has established and is monitoring the achievement of medium- to long-term goals applicable to all affiliate companies.

Health and Productivity Planning Management Promotion System



Company-wide Targets for 2020

	Targets	FY2017 Results (est.)
Thorough implementation of physical examinations	Rate of complete exams: 100%	81.7%
	Rate of complete exams for dependents: 60%	44.0%
Preventive health measures	Rate of providing specific health guidance: at least 35%	30.0%
	Rate of obesity (BMI: 25% or higher) 25% or less	27.6%
Maintaining and improving health	Participation in the Powering Up Health Care program: at least 50%	39.0%
Promotion of non-smoking	Smoking rates: 25% or less	35.5%

Developing Dynamic Working Environments

Sound Labor-Management Relations

Recognizing that labor-management cooperation is essential for the company to fully tackle its business challenges, JFE Steel has established a strong relationship with its labor union based on understanding and trust. The company convenes its Labor-Management Business Discussion Committee four times a year to bring the president and other executives together with labor representatives for the purpose of exchanging ideas on business challenges. The two sides also share views on working conditions and workplaces and hold joint consultations whenever the labor system is revised.

JFE Engineering strives to ensure sound labor-management relations. In addition to Central Labor-Management committees, which are regularly convened for the company’s president and other executives to share views with representatives of its labor union, a labor-management committee on work-life balance helps to maintain friendly working environments.

JFE Shoji Trade management and labor regularly exchange opinions and share information. The company president and other executives exchange views with representatives of its labor union during semiannual Management Committee meetings.

Health and Productivity Management Promotion WG

Members	<ul style="list-style-type: none"> Each region, works, main office Industrial physicians and public health nurses Manager of Labor Management Office, Labor Management HR Department, Organizational HR Department Office of Safety and Health (health staff), Safety and Health Department Health Insurance Union Directing Manager, Manager of Health Development Office
Discussion Topics	<ul style="list-style-type: none"> Evaluation of Health and Productivity Management (physical, mental and work environment) (evaluation of indices and activities) Company-wide activities Reporting to the management team
Frequency	February, May, August, November (once a quarter)

External Awards

MSCI Japan Empowering Women Index (WIN)

JFE Holdings has been included in the MSCI Japan Empowering Women Index operated by U.S.-based MSCI. To be included, a company must be selected for the MSCI Japan IMI Top 500 brands for its environmental, social and governance (ESG) performance and then ranked in the top half of its industry based on a multilateral gender diversity score. The Government Pension Investment Fund (GPIF) for Japan, one of the world's largest pension funds, has selected this index as a benchmark for its ESG investment strategy.



SNAM Sustainability Index

JFE Holdings has been chosen for seven consecutive years as a constituent of the SNAM Sustainability Index, which was launched by Sompo Japan Nipponkoa Asset Management (SNAM) in August 2012. The index, which encompasses companies with highly evaluated ESG ratings, contributes to investor asset formation by evaluating corporate value from a long-term perspective.



DBJ Environmentally Rated Loan Program

The DBJ Environmentally Rated Loan Program utilizes a screening (rating) system developed by DBJ to evaluate environmental management and then assign a corresponding interest rate from three levels. This was the world's first loan program to incorporate environmental ratings in its financing menus. In March 2016, JFE Holdings was rated as a top-ranking company that pursues excellent and advanced environmental initiatives resulting in outstanding environmental-management performance, based on which the company secured a loan under the program.



JFE was rated as a company pursuing excellent and advanced environmental initiatives

Selected for the 2018 Health & Productivity Stock Selection Corporations

JFE Holdings has been selected as one of the 2018 Health & Productivity Stock Selection Corporations, which is a program conducted by the Ministry of Economy, Trade and Industry (METI) and the Tokyo Stock Exchange (TSE).

The program identifies outstanding TSE-listed enterprises, one company per industry, that strategically manage employee health programs and promotes them as attractive investments from the standpoint of enhancing long-term corporate value.

In addition, JFE Holdings and its operating companies (JFE Steel, JFE Engineering, JFE Shoji Trade and JFE Systems) have been recognized as outstanding enterprises under the 2018 Health and Productivity Management Recognition Program (White 500). This program examines organizational initiatives to promote health and productivity, in cooperation with the health insurance union.



Caterpillar Quality Assurance Certification

In 2018, JFE Steel West Japan Work (Kurashiki District) and JFE Shoji Trade were named for two consecutive years as Gold Level SQEP suppliers for the Supplier Quality Excellence Process, a quality certification of the U.S.-based construction equipment manufacturer Caterpillar Inc. The program ranks suppliers for compliance with ISO 9001 standards and Caterpillar's own specifications and certifies the top firms as Platinum, Gold, Silver or Bronze. Only a few companies in Japan have received Gold Level certification, and JFE Steel is the world's first blast furnace company to be certified.



Receiving the Gold certification plaque

Competitive IT Strategy Company for Fourth Consecutive Year

In May 2018, JFE Holdings was selected for inclusion in the Competitive IT Strategy Company Stock Selection for the fourth consecutive year by the Ministry of Economy, Trade and Industry and the Tokyo Stock Exchange. The program, which recognizes companies that actively implement competitive IT, deepens investor understanding of the strategic utilization of IT to boost medium- to long-term corporate value and competitiveness.



JFE Group Initiatives Leveraging IT

Use of IoT in the Supply Chain Management System

The steel business deals with a wide variety of products and requires extremely complex supply chains. The key to success is developing a sophisticated supply chain management system covering all stages from manufacturing to sales, involving Group companies and customers. JFE Steel and JFE Shoji Trade are working together to virtually unify and digitize all manufacturing processes within the JFE Group. This initiative is based on the Integrated Database for Supply Chain Management, which began operating in 2017 and is intended to create a single SCM system leveraging IoT.

Centrally Manage Operational Support for Plants Using AI Technology

JFE Engineering established its Global Remote Center leveraging AI to integrate remote operational support for various plants. This approach consolidates networks that previously existed for each type of plant and improves communication network quality. In addition, all the data from various plants are now managed centrally in the cloud. This state-of-the-art platform positions the company to more effectively utilize system data. The company intends to further extend the use of AI into areas such as quick recovery from and prevention of system errors using pattern recognition and also maintenance of devices for monitoring and controlling industrial machinery and pipelines.

Awards for Technologies and Products (FY2017)

	Prize/Award	Distinction	Sponsor
JFE Steel	Monodzukuri Nippon Grand Award, Prime Minister's Prize	Development of steel production process that reduces CO ₂ emissions (Super-SINTER™)	Ministry of Economy, Trade and Industry
	Monodzukuri Nippon Grand Award, Prime Minister's Prize	Innovative structural engineering "Crack Arrest" technology for safer, eco-friendly mega-container ships	Ministry of Economy, Trade and Industry
	Energy Conservation Grand Prize, Director-General of the Agency for Natural Resources and Energy Prize	1.5 GPa-grade cold-rolled steel plate for automobiles for energy conservation and collision resistance	The Energy Conservation Center Japan
	The Energy-Efficient Machinery Award, Agency of Natural Resources and Energy Director's Award	Two-stage Jet Burner for Igniting Sintering Machine	The Japan Machinery Federation
	National Commendation for Invention, Invention Prize	Invention of thick steel plates for ships that excel in preventing the propagation of cracks	Japan Institute of Invention and Innovation
JFE Engineering	JAPAN Construction International Award, Minister of Land, Infrastructure and Transport Prize	Construction planning for a viaduct in Ulaanbaatar	Ministry of Land, Infrastructure and Transport
	Excellent Environmental Equipment Award, Minister of Economy, Trade and Industry Prize	Waste Incinerator that uses a counter current combustion method	The Japan Society of Industrial Machinery Manufacturers
	Energy Conservation Grand Prize, Minister of Economy, Trade and Industry Prize	BOG Re-liquefaction facility "MiReLiS™"	The Energy Conservation Center, Japan
	Engineering Commendation Award of ENAA	Project team involved in technology transfer and infrastructure development of a steel structure manufacturing base in Myanmar	Engineering Advancement Association of Japan



Monodzukuri Nippon Grand Award, Prime Minister's Prize



Energy Conservation Grand Prize, Director-General of the Agency for Natural Resources and Energy Prize



The Energy-Efficient Machinery Award, Agency of Natural Resources and Energy Director's Award



Excellent Environmental Equipment Award, Minister of Economy, Trade and Industry Prize

Independent Assurance Statement



Independent Assurance Statement

September 11, 2018

Mr. Eiji Hayashida
Representative Director, President and CEO of JFE Holdings, Inc.

1. Purpose

We, Sustainability Accounting Co., Ltd., have been engaged by JFE Holdings, Inc., ("the Company") to provide limited assurance on the Company's environmental performance indicators during the fiscal year 2017 reported in JFE Group CSR REPORT 2018, which indicate 54.9 million tons of CO₂ for Scope1, 7.4 million tons of CO₂ for Scope2 and 16.3 million tons of CO₂ for Scope3, and 241 million tons of industrial water accepted by the Company (collectively, "the environmental performance indicators"). The purpose of this process is to express our conclusion on whether the environmental performance indicators were calculated in accordance with the Company's standards. The Company's management is responsible for calculating the environmental performance indicators. Our responsibility is to independently carry out a limited assurance engagement and to express our assurance conclusion.

2. Procedures Performed

We conducted our assurance engagement in accordance with International Standard on Assurance Engagement 3000 (ISAE 3000) and International Standard on Assurance Engagement 3410 (ISAE 3410). The key procedures we carried out included:

- Interviewing the Company's responsible personnel to understand the Company's standards and reviewing the Company's standards
- Visiting to one of the Company's sites
- Performing cross-checks on a sample basis and performing a recalculation to determine whether the environmental performance indicators were calculated in accordance with the Company's standards.

3. Conclusion

Based on the procedures performed, nothing has come to our attention that causes us to believe that the environmental performance indicators have not been calculated in all material respects in accordance with the Company's standards.

We have no conflict of interest relationships with the Company.

A handwritten signature in black ink, appearing to be "Takashi Fukushima", written over a horizontal line.

Takashi Fukushima
Representative Director, Sustainability Accounting Co., Ltd.

Third-party Comments



Yoshinao Kozuma

Emeritus Professor
Sophia University

1. New Medium-term Business Plan Interlinked with ESG-related Initiatives

In April 2018, the JFE Group announced its Sixth Medium-term Business Plan. The plan, as part of your continuing effort to “Establish a corporate culture conducive to sustainable growth,” places a high priority on “Ongoing ESG Initiatives.” The goals included in this plan are similar to your previous business plans, including CSR promotion, thorough environmental management and reinforced corporate governance. What makes it different is its focus on incorporating ESG issues in these business goals and positioning them at the plan’s core.

This is quite revolutionary and a step toward realizing a sustainable society. Other excellent measures worth noting are the creation of KPIs for each ESG issue, making it possible to track the progress of related initiatives, and the introduction of medium- to long-term performance-linked remuneration for directors.

2. Reinforcement of CSR Management

You achieved significant progress this year in CSR management relating to respect for human rights. Human rights management in your supply chain has always been a matter of concern. This year, you established the “JFE Group Human Rights Basic Policy,” which aligns with international norms, and this is the foundation for tackling issues associated with human rights management. Under this new policy, we are starting to see a new structure for CSR procurement, one that is more holistic and not limited to preventing conflict materials. In addition, you have started group training sessions on sexual minorities (LGBT) as part of diversifying your workforce. Moreover, you are making good progress in expanding the coverage of your initiatives related to human rights.

3. Enhanced Transparency

You also made some progress in the area of information disclosure. First, you disclosed the map of your value chain, which is important for identifying ESG issues. This helps to clarify the risks and opportunities across the entire value chain in the JFE Group’s business model, making it easier for external stakeholders to associate your CSR initiatives with these countermeasures and evaluate the results. Second, you began issuing and publishing the integrated report this fiscal year. This also contributes to enhancing the transparency of your group.

4. Challenges for the Future

You have established KPIs for ESG-related initiatives. In order to facilitate evaluation of the progress, why don’t you consider setting quantitative goals for the qualitative KPIs and sharing them with the public? I trust that this will strengthen the credibility of your CSR report. In addition to the medium-term business plan, you should consider establishing a long-term vision for ESG-related issues. Furthermore, your actions in the area of CSR procurement should be further promoted to broaden the scope of CSR management beyond first-tier suppliers and be enforced across your entire supply chain.

Third-party Comments



Mariko Kawaguchi

Chief Researcher,
Research Division, CMA
Daiwa Institute of Research Ltd.

A year has passed since I wrote my third-party comment on the previous report. Over the year, the shift toward a low-carbon society is finally picking up momentum in Japan. Conventional environmental protection assumed continued consumption of fossil fuels and tended to focus on how to conserve energy and resources while still consuming fossil fuels. However, with the shift toward a low-carbon society, that assumption is no longer valid. The environmental management-related initiatives in your CSR report this year are still primarily based on the conventional approach to environmental protection, but we are starting to note initiatives that do not fit into the conventional framework. In the top message from President Hayashida, in this year's report, he mentions the benefits of steel and laying out all parts of the group's value chain across the world. These are two significant points when considering the shift toward a low-carbon society.

From the perspective of decarbonization, the steel industry is often viewed negatively because of its significant volume of CO₂ emissions. Nevertheless, the social benefits of steel, as stated in this report, should not be overlooked. As a steel company, it is important for you to recognize the benefits of steel and communicate them to stakeholders. In a world that is shifting toward a low-carbon society, the business plans of a steel company should display a vision and strategies for minimizing the economic, environmental and social costs while presenting and maximizing the benefits of steel.

An excellent example of this is the diagram of the JFE Group's value chain in this report. The diagram clearly associates the social and environmental issues with each stage of steel production and highlights how the JFE Group is responding to each issue. Furthermore, the diagram serves as a good reference for understanding the magnitude of the steelmaking businesses and how they impact the lives of stakeholders. In addition, the countermeasures are summarized in key terms of one or two words long in

the diagram, e.g., energy-conservation, re-use of co-products and the active hiring of diverse resources. I trust, however, that there are actual projects and tangible goals associated with each of them, while these goals can be aligned with the SDGs to make the details of these projects more visible. Measuring the benefits of steel in terms of the social impact these projects generate surely open a pathway to achieving the SDGs.

We tend to focus on environmental management when reviewing the steel industry. But you also have many worthwhile initiatives outside of environmental management, including changing working hours as part of workstyle reform to encourage employees to finish work early and setting high targets for promoting female workers in technical positions. Why not advertise these more proactively? People don't tend to associate women with the steel industry, and this may be a good way to attract attention. On the contrary, while you have described the content of your Human Rights Basic Policy, I still didn't know how it's applied across your supply chain. I suspect there are human rights risks as well as environmental risks associated with the extraction of iron ore, coal and biomass fuels. Additional policies and action plans should be established and shared with stakeholders to demonstrate management's commitment to human rights.

The atmospheric CO₂ concentration now exceeds 400 ppm, and there are increasing reports of damage associated with abnormal weather patterns from around the world. In Japan, summer heat waves were not our only problem this year. We have experienced enormous damage across Japan, such as damage in West Japan from torrential rains, the Kinki region after a typhoon and in Hokkaido due to earthquakes. It appears that seeking to mitigate climate change through CO₂ reduction is no longer enough; we must prepare to adapt to changes already underway as well.

As we look for ways to minimize the damages caused by these extreme weather patterns, to enhance the resiliency of cities and infrastructure that can sustain their functions and save lives, I feel that the role of steel will become even more significant and vital. I look forward to seeing greater contributions from the JFE Group in these areas from leveraging your technologies.



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Our CSR Report and JFE GROUP REPORT are viewable in a mobile-friendly format.



● CSR Report 2018



● JFE GROUP REPORT 2018

