JFE Group

CSR REPORT 2021

JFE

Revision History

Dec. 23 2021	First Edition
June 01 2022	Revised Second Edition
	P.55 The target of reducing CO_2 emissions in FY2030 is updated.
	P.56 The target of reducing CO_2 emissions in FY2030 (JFE Steel) is updated.
	P.57 CO_2 emission reductions in the steel business in FY 2030 in "JFE Group's Activities for Carbon Neutrality" are updated.
	P.65 The target of reducing CO_2 emissions in FY2030 (steel business) in " Roadmap to Carbon Neutrality in 2050" is updated.
	P.71 The target of reducing CO_2 emissions in FY2030 is updated.

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Message from the CEO

October 2021

Koji Kakigi

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

Contributing to the Sustainable Development of Society for a Prosperous Global Future by Making Maximium Use of Group Resources

Where We Stand and What We Intend to Do

The social and economic environment surrounding the JFE Group is changing at an unprecedented pace in the face of challenges that include intensifying global competition amid the ascendency of China, an increasingly uncertain outlook for the global economy caused by the U.S.-China rivalry, the need to address climate change, and the spread of COVID-19. We must flexibly and effectively adapt to these changes by following our corporate vision of "Contributing to society with the world's most innovative technology." By doing so, we will fulfill our mission of being essential to society's sustainable development and create safe, comfortable lives for people everywhere. We will also be ensuring environmental and social sustainability (helping to solve critical issues) and establishing economic sustainability (stable earnings power) toward ultimately realizing sustainable growth for the Group over the medium to long term and increasing corporate value. Meanwhile, every employee will be motivated to do their jobs with a greater sense of purpose and satisfaction by engaging in the Company's contributions to sustainable development. The JFE Group will pursue medium- to long-term management to attain these goals.

The Seventh Medium-term Business Plan and Material Issues of Corporate Management

JFE formulated the Seventh Medium-term Business Plan, which covers the period from FY2021 to FY2024, to steadily enhance corporate value over the medium to long term. We consider this target period as the most transformative period in the Company's history. We will establish a robust management foundation that can deliver stable profit through measures including the structural reform of the steel business, which we announced last year, and we will proactively address climate change and other ESG issues.

To date, the JFE Group has identified material CSR issues in its business activities from the perspective of its diverse stakeholders and has designated key performance indicators (KPIs) to evaluate its initiatives for these issues. In FY2021, under the policies of the medium-term plan, we have decided to identify and combine our economic issues with our material CSR issues to formulate and disclose our material issues of corporate management. By appropriately evaluating and revising these issues and KPIs to pursue activities for achieving our goals, we will build a solid foundation for sustainable growth for the Company while steadily advancing our initiatives for medium- to long-term environmental and social issues such as climate change.

Initiatives on Climate Change, and the JFE Group Environmental Vision for 2050

While the use of a blast furnace is the optimal manufacturing process for mass-producing high-quality, high-performance steel, it is not yet possible to avoid emitting CO_2 with this method. Since the steel business constitutes the core of the JFE Group's operations, climate change is an extremely important management issue from the perspective of business continuation. JFE declared its support for the TCFD recommendations in May 2019 and has identified climate change-related issues based on the scenario analysis advocated in the TCFD to formulate strategies for sustainable growth. In September 2020, JFE disclosed its target of reducing CO_2 emissions in FY2030 by 20% or more compared to FY2013 in the steel business, which accounts for most of the Group's CO_2 emissions. We also declared its intention to achieve carbon neutrality by 2050, ahead of the Japanese government's announcement of the same goal. In our latest medium-term plan, we formulated the JFE Group Environmental Vision for 2050, laying out our concrete initiatives for reducing CO_2 emissions. By reflecting the TCFD's philosophy in our management strategies, we will systematically address climate change. In the steel business, we will reduce CO_2 emissions by 18% from FY2013 levels by the end of FY2024. By doing so, we will not only achieve our FY2030 target announced in FY2020 but also further promote technological development and disclose a more ambitious action plan in the form of a target for FY2030 during the period covered by the medium-term business plan. Moreover, we will take on the challenge of developing super-innovative technologies, such as carbon-recycling blast furnaces developed with our unique techonology, while also adopting a multitrack approach for pursuing other technologies to explore all possibilities for realizing carbon neutrality in 2050.

Efforts to realize carbon neutrality are gaining momentum around the world. JFE recognizes this trend as a business opportunity and is seeking to expand its contribution to reducing CO_2 emissions across society by leveraging the Group's strengths as they are deployed in diverse businesses. We intend to contribute with a reduction of 12 million tons of CO_2 in 2024 and 25 million tons in 2030, by expanding renewable power generation under development in the engineering business. We especially intend to unite our efforts behind the offshore wind-power business by making maximium use of Group resources.

Initiatives for Solving Social Issues and Enhancing Corporate Governance

I take seriously the fact that we have not been able to achieve our goal of zero major accidents, which is for managing the safety and health of our employees. We will promote efforts to ensure absolute safety by remodeling our facilities to eliminate accidents through measures such as installing sensors to reduce potential hazards as well as bolstering safety

education and stringently complying with prevailing regulations. Also, we will proactively introduce tools for supporting safety based on advanced IT for monitoring and detection. Under the medium-term plan, we intend to invest around ten billion yen in safety each year for the entire Group.

To facilitate employee participation, we will actively hire women and mid-career staff to maximize the capabilities of employees with diverse backgrounds. We will also create safe and rewarding workplace environments and in-house system. In particular, we will strive to establish workplaces that enable female employees to pursue their careers following life events and demonstrate their abilities in mangerial positions, as we accelerate our Group-wide initiatives to realize a shared vision of our future. We will conduct human rights due diligence across the global supply chain to steadfastly expand our support in this area. Also, we will advance our initiatives by setting performance targets for non - financial metrics related to environmental and social issues, with a focus on climate change, to enhance our corporate governance.

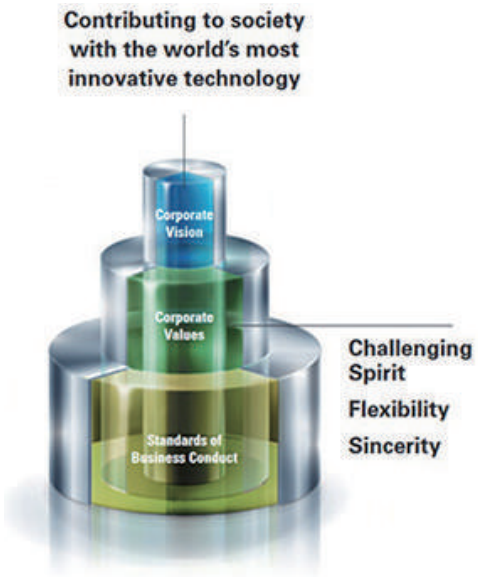
Leveraging Group Synergies to Contribute to the Sustainable Growth of Society

JFE will squarely address the rapidly evolving business environment through bold reforms and taking on challenges by applying the Group's strengths and synergies to maximum effect. I am confident that this will not only result in our sustainable growth and enhanced corporate value but also contribute to the sustainable development of society as a whole based on our corporate vision of "Contributing to society with the world's most innovative technology." To hand down a prosperous global future to the next generation, the entire Group will play its part in realizing the sustainable growth of society by making maximum use of group's resources gained over years to consistently generate values and by delivering products and services that leverage its strengths.

Corporate Vision/Business Conduct

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, environmental protection and climate change.

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 of Challenging Spirit, Flexibility and Sincerity, the JFE Group strives to earn society's trust by undertaking CSR with integrity.



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.

Value of Steel

Appealing Qualities of Steel that Create Safe, Comfortable Lives for a Prosperous Global Future

Iron makes up approximately 30% of the Earth's mass. Because of its rich reserves, steel can be mass produced at very low cost. Compared to other materials, the environmental impact of its production is extremely low and it has excellent recyclability. Steel can be recycled repeatedly and reborn as various products (closed-loop recycling) with little or no environmental impact, contributing to the sustainable growth of our society.

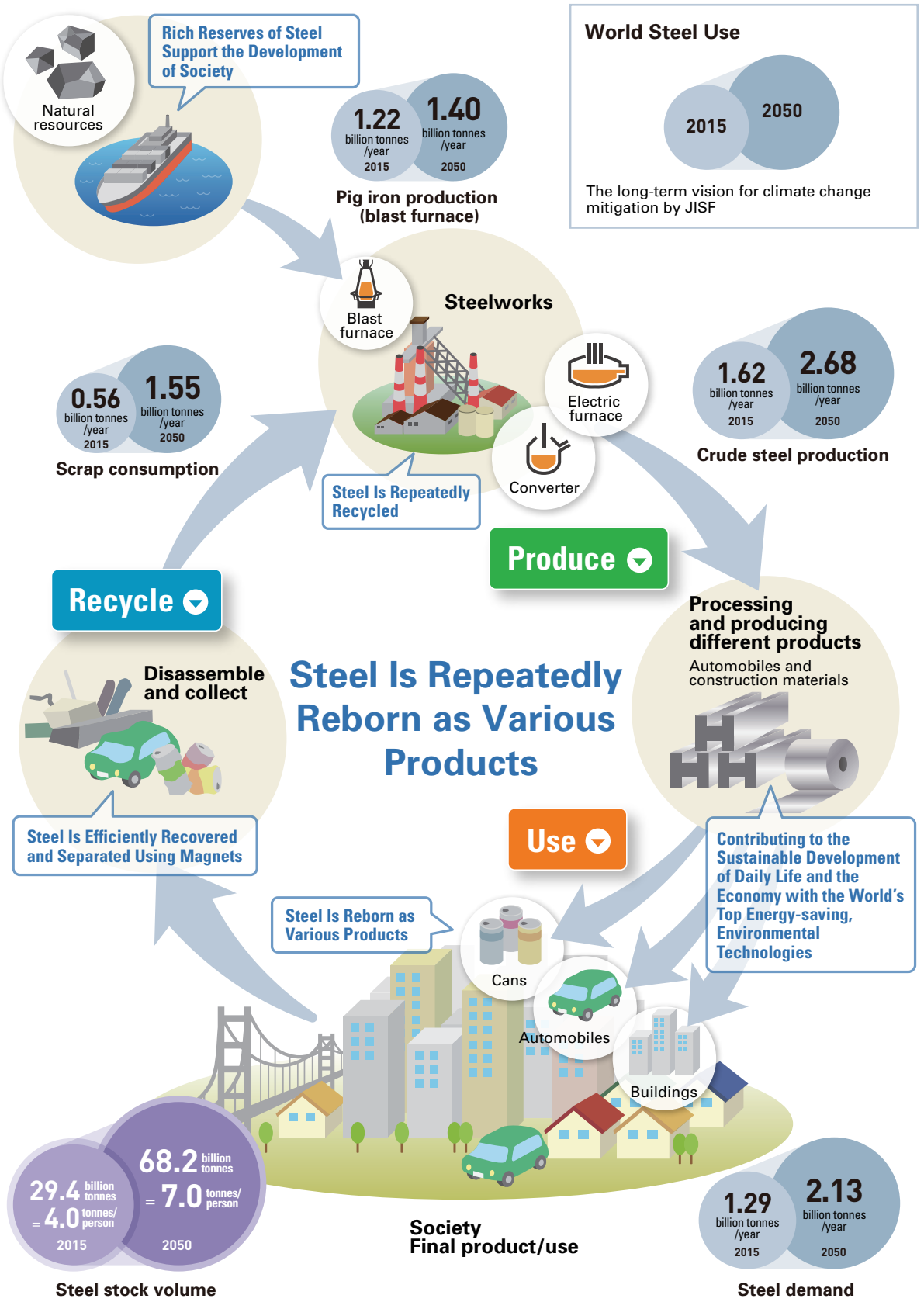
Life Cycle Assessment of Steel

Steel's excellent recyclability contributes to the creation of a sophisticated value chain encompassing three components: Produce, Use, and Recycle. Steel products can be repeatedly reborn as various products. It is therefore important that the environmental impact of steel be assessed across its entire life cycle, including at the recycling stage. JFE Steel participates as a key member in an initiative led by the Japan Iron and Steel Federation (JISF) to quantify the environmental impact of the entire life cycle of steel products and developed the ISO/JIS standard* calculation methodology. Corresponding to this standard, materials with higher recyclability are found to have lower environmental impact such as on global warming.

Fifteen blast furnace and electric furnace steel manufacturers operating in Japan, including JFE Steel, have compiled and published the national average value for life cycle inventory (LCI) data for different types of steel products for FY2018.

*ISO 20915: Life cycle inventory calculation methodology for steel products (2018.11)
JIS Q 20915: Life cycle inventory calculation methodology for steel products (2019.6)

➤ **Contribution to the Development of Calculation in LCA** (P.93)


Steel Is Repeatedly Reborn as Various Products
Rich Reserves of Steel Support the Development of Society
Natural resources
1.22 billion tonnes /year 2015
1.40 billion tonnes /year 2050
Pig iron production (blast furnace)
World Steel Use
2015
2050
The long-term vision for climate change mitigation by JISF
Steelworks
Blast furnace
Electric furnace
Converter
Steel Is Repeatedly Recycled
0.56 billion tonnes /year 2015
1.55 billion tonnes /year 2050
Scrap consumption
1.62 billion tonnes /year 2015
2.68 billion tonnes /year 2050
Crude steel production
Recycle
Produce
Disassemble and collect
Processing and producing different products
Automobiles and construction materials
Steel Is Efficiently Recovered and Separated Using Magnets
Use
Contributing to the Sustainable Development of Daily Life and the Economy with the World's Top Energy-saving, Environmental Technologies
Steel Is Reborn as Various Products
Cans
Automobiles
Buildings
Society
Final product/use
29.4 billion tonnes = 4.0 tonnes/person 2015
68.2 billion tonnes = 7.0 tonnes/person 2050
Steel stock volume
1.29 billion tonnes /year 2015
2.13 billion tonnes /year 2050
Steel demand

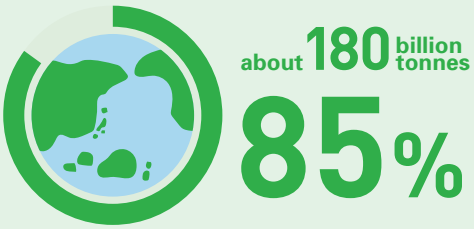
Produce High Economic Efficiency and Low Environmental Impact

The stable mass production of steel serves as the foundation for daily life and society. CO_2 generated by the manufacturing process of steel is extremely low compared to other materials, making it an environmentally-sound material. Steel is an essential for society's sustainable development and to create safe, comfortable lives for people everywhere.

Earth, a Planet of Iron (Abundant Resources)

As much as 85% of the Earth's metal resources are iron ore (180 billion tonnes).
Source: Mineral Commodity Summaries (2021)

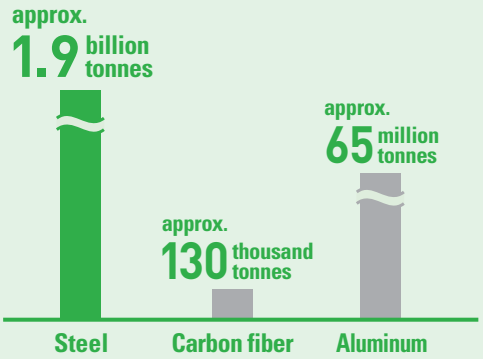
Recoverable Reserves of Iron Ore on the Earth



Mass Production at Low Cost

With rich reserves and a long history of technological development, iron is mass produced at reasonable prices and supplied stably, thereby contributing to the sustainable growth of society.

Global Demand (2020)



Research: JFE Holdings

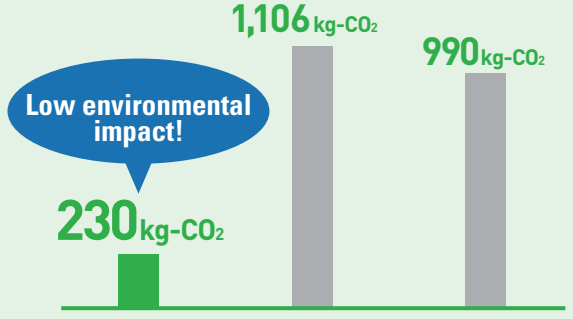
Price*

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

Extremely Low Environmental Impact at the Manufacturing Stage when Compared to Other Materials

Greenhouse gas (GHG) emissions of steel at the manufacturing stage is approximately one-fourth to one-fifth of that of aluminum and carbon fiber with equivalent functionality.

GHG Emissions at the Manufacturing Stage of Materials (CO_2 equivalent)



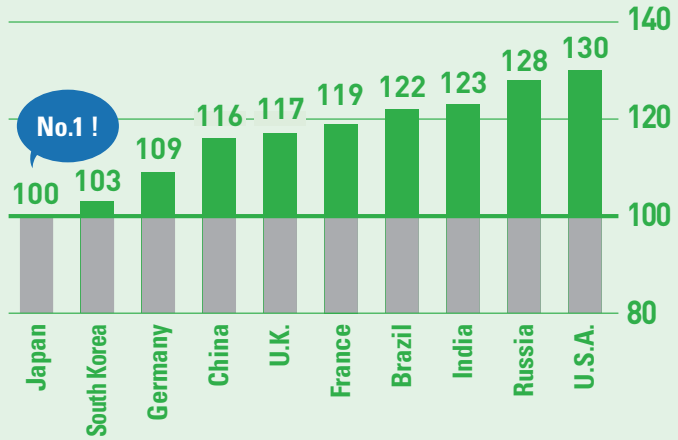
	Steel (mild steel)	Aluminum	CFRP (Carbon Fiber Reinforced Plastic)
GHG emissions per unit weight (CO_2 equivalent) (kg-CO_2/kg)	2.3	16.5	22.0
Functional equivalent weight (kg)	100	67	45

Source: Compiled from data disclosed by WorldAutoSteel

Japan's Steel Industry Boasts the Highest Energy Efficiency in the World

Japan's steel industry (converter steel) produces steel with the lowest environmental impact compared to other major countries. This is a result of its longstanding efforts toward environmental conservation, including developing and spreading the use of energy-saving technologies.

World's Quotient, with Japan as 100 (2015)



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

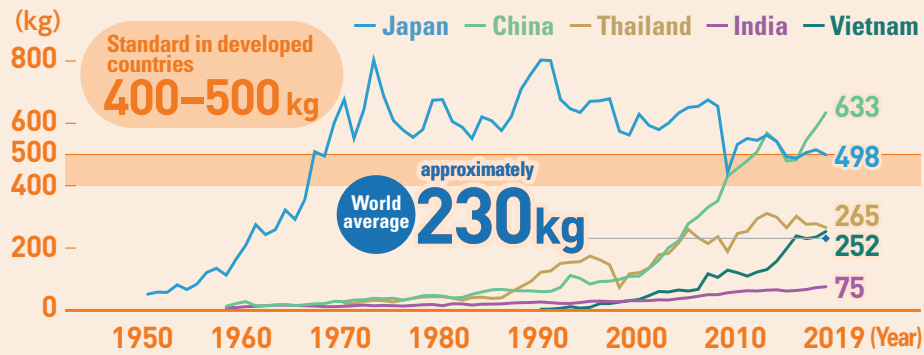
Use Foundation of Daily Life and Society

The use of steel impacts the environment less than other materials. For example, making automobile frames with high tensile strength steel sheets, which have a reduced thickness but retain their strength, considerably decreases the weight while maintaining crash performance, thereby helping to reduce CO_2 emissions for society as a whole.

The Potential to Grow on a Global Scale

Global average of annual consumption of steel is approximately 230 kg per capita. The long-term global demand for steel is expected to keep growing alongside the economic development of emerging countries.

Trends in Annual Steel Consumption per Capita by Country (kg/person/year)

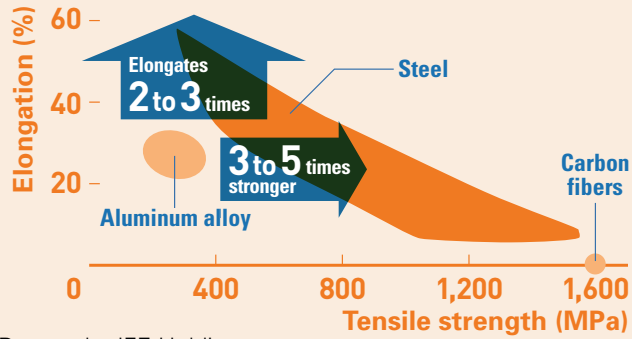


Source: World Steel Association

Potential for Evolution

Steel can be elongated two to three times more than aluminum at the same rigidity and is three to five times stronger at the same extended rate, making it the optimal material for new world-class structures such as TOKYO SKYTREE. And yet there is still potential for further evolution. The emerging needs of society will advance the development of steel and contribute to a productive future.

Comparison of Strength and Elongation between Steel, Aluminum, and Carbon Fiber



Research: JFE Holdings

Recycle Excellent Recyclability

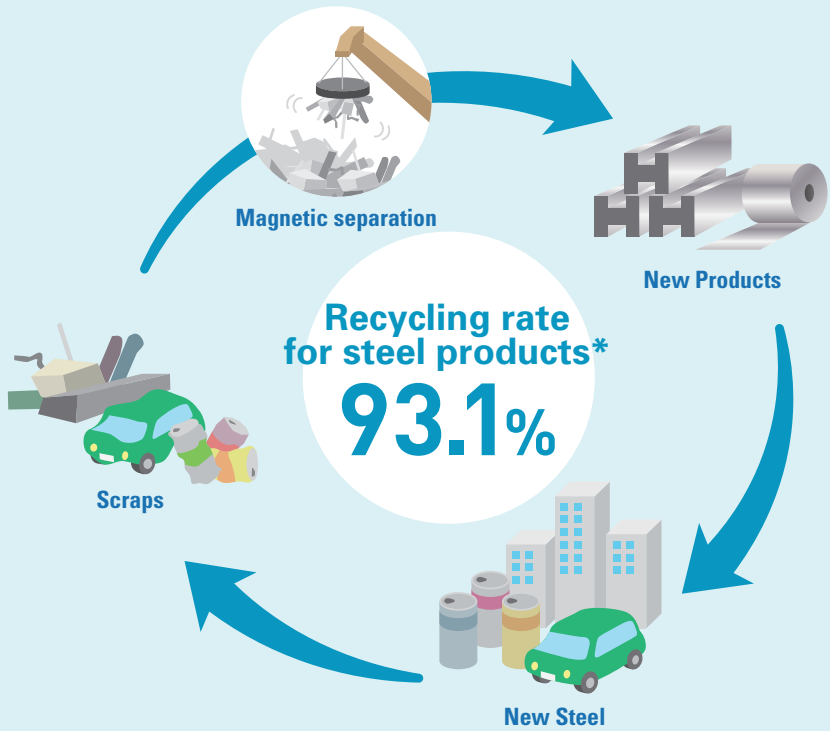
Steel is a highly recyclable material that can be easily recovered and separated using magnets. It can be efficiently recovered, separated, and recycled into high-quality, high-functioning products over and over again through closed-loop recycling.

Closed-loop Recycling of Steel

Steel can be recycled a number of times as a raw material for steel products while retaining its original properties. Closed-loop recycling is superior to open-loop recycling in terms of sustainability, because closed-loop recycling reduces the consumption of natural resources, as well as the amount of environmentally hazardous substances and wastes.

*In open-loop recycling, the material recycling process involves two types of finite recycling which are thermal recycling and cascade recycling. Thermal recycling means that heat generated by incineration is recovered while cascade recycling indicates recycling the material accompanied by the degradation or alteration of the material's properties.

Closed-loop Recycling



Source: The Japan Iron and Steel Federation

Seventh Medium-term Business Plan

The JFE Group is in the midst of an unprecedented business environment characterized by rapid and extensive change. To adapt to these changes and steadily increase corporate value over the medium to long term, JFE formulated its seventh medium-term business plan running from FY2021 through FY2024. The four years covered by the plan will be the most transformative period in the Company's history. Through the plan, we aim to rise to a new level by taking bold steps to establish a foundation for sustained, long-term growth.

Goals to Achieve for the Seventh Medium-term Business Plan

The long-term goal of JFE is to provide products and services that support the development of a prosperous global future, which reflects JFE's corporate vision of contributing to society with the world's most innovative technology .

JFE's mission is to establish its position as a company essential to society's sustainable development and to create safe, comfortable lives for people everywhere. Ensuring environmental and social sustainability (helping to solve critical issues) and establishing economic sustainability (stable earnings power) will be crucial to making this happen. Achieving sustainable growth and increased value for the Group over the medium to long term will in turn enable us to further contribute to the sustainable development of our society for a prosperous global future.

Major Strategies of the Seventh Medium-term Business Plan

Achieve Environmental and Social Sustainability

Formulation and Promotion of the JFE Group Environmental Vision for 2050

Climate change has spawned a sense of crisis that has rapidly spread across the the world, increasing the urgency of finding a solution. The JFE Group has positioned its initiatives on climate change as a top-priority business issue from the perspective of business continuity and formuated the JFE Group Environmental Vision for 2050. We will seek to reduce CO_2 emissions from the steel business by 18% from FY2013 levels by the end of FY2024 and achieve carbon neutrality by 2050. To meet these goals, JFE will work to combat climate change by developing super-innovative technology for carbon-recycling blast furnaces*1 and CCU*2, accelerating the commercialization of its offshore wind-power business by applying the strengths of the Group while further reducing CO_2 emissions, with a focus on its engineering business, for all of society.

*1 Carbon-recycling Blast Furnace : A blast furnace operated by applying hydrogen to convert the CO_2 generated in steelworks into a carbon-neutral reduction agent (methane) and replacing it with conventional coal-derived reduction agents.
*2 CCU: Carbon dioxide Capture and Utilization

➤ Seventh Medium-term Business Plan (https://www.jfe-holdings.co.jp/en/investor/management/plan/index.html)
➤ JFE Group Environmental Vision for 2050 (P.56)

Solve Issues Impacting Society

The JFE Group adheres to the philosophy of safety first, and it promotes the development of a safe working environment. To achieve our top-priority goal of zero accidents, we will bolster safety education and require stringent compliance with related rules while also focusing our efforts on eliminating accidents at our facilities. Furthermore, we will secure diverse human resources required for raising competitiveness and achieving our growth strategies, nurture employees who serve as the foundation of our business activities, and create workplace environments and internal systems to maximize the capabilities of our employees.

We will also expand bases for local production and consumption focused on the food-recycling business to contribute to communities through our engineering business. We will seek to realize a circular economy by broadly expanding these businesses.

We will conduct human rights due diligence from FY2021 to strengthen our human rights management across the global supply chain.

➤ Seventh Medium-term Business Plan (https://www.jfe-holdings.co.jp/en/investor/management/plan/index.html)
➤ Occupational Health and Safety (P.138)
➤ Labor Standards (Recruit and Nurture Diverse Human Resources) (P.148)
➤ JFE Engineering's Website: 360°JFE Engineering (https://www.jfe-eng.co.jp/en/360_jfe_engineering/)
➤ Human Rights (P.160)

Enhancing Corporate Governance

JFE has implemented initiatives such as formulating its Basic Policy on Corporate Governance, establishing the Nomination Committee and the Remuneration Committee, introducing a performance-linked remuneration system for directors as well as conducting the analysis and evaluation of directors' effectiveness to enhance corporate governance. In order to further strenghen the Group's governance, we will set performance targets for non-financial metrics related to environmental and social issues and reinforce our Group-wide cross-sectional risk-management system.

➤ Corporate Governance (P.178)

Establish Economic Sustainability (Stable Earnings Power)

The domestic steel market is expected to shrink as Japan's population declines, while intensifying price competition for commodity products and the increasing trend of local production of steel for local use suggest that efforts to grow export volumes are not likely to be profitable. Therefore, we will shift production in Japan toward profitability based on quality rather than quantity and pursue targets per-ton profit of steel materials as our target. To that end, we will establish a profit base that is resilient to changes in economic conditions by successfully completing structural reforms. We will introduce new technologies through digital transformation (DX) to significantly reduce costs, and we will ensure competitiveness by improving quality and delivery, ultimately to achieve world-class cost and quality competitiveness. We will also expand margins and achieve stable profit by increasing our mix of highly value-added products and fully overhauling our sales pricing.

In addition, we will steadily promote the growth strategies of each operating company through initiatives such as considering the establishment of a production and sales joint venture with India's JSW for (grain-oriented) electromagnetic steel sheets and expanding the engineering business in the environmental, recycling and renewable-energy fields. To boost competitiveness in these businesses, we will promote DX across all our business domains focused on the three areas of advancing productivity through innovation, transforming existing businesses, and creating new businesses.

We will also balance financial soundness with effective investment based on a "select and concentrate" approach. We selectively extend investments to maintain functions by prioritizing those for raising competitiveness and establishing a stable foundation for profit and to secure funding by reducing assets and businesses that contribute little to earnings or are tied to unprofitable businesses to reduce our assets. By doing so, we will steadily implement strategies for achieving our performance and profitability targets, which are: ROE of 10%; 320 billion yen in consolidated business profit; and 220 billion yen in profit attributable to owners of parent, by the plan's final year (FY2024).

■ Investment and Asset-Downsizing Plans

Content		Seventh medium-term business plan (four-year total)
Consolidated Investment	Equipment Investment	About 1,200 billion yen
	Business Investment	About 250 billion yen
	Total	About 1,450 billion yen
(Of above)	GX Investment*	About 340 billion yen
	DX Investment	About 120 billion yen
Asset Downsizing		About 200 billion yen

*Investment in green transformation (carbon neutrality)

■ Performance and Profitability Targets and Dividend Policy

Performance and profitability targets	Seventh medium-term business plan (final year: FY2024)
Consolidated business profit	320 billion yen/year
Profit attributable to owners of parent	220 billion/year
ROE	10%
Debt/EBITDA	About 3 times
D/E ratio	About 70%

Dividend policy	Seventh medium-term business plan
Payout ratio	About 30%

Material Issues of Corporate Management

Action on Material Issues

The JFE Group's actions related to management issues are based on identifying materiality and setting KPIs to minimize negative societal impact and maximize societal value by investing JFE Group's resources from the standpoint of meeting stakeholder needs. In 2016, we determined our material CSR issues (13 issues in 5 focus areas)by comprehensively identifying 35 issues that reflect society's expectations in the context of JFE's business and then by prioritizing the issues through the two criteria of stakeholder expectations and relevance to business (societal impact).

In FY2021, we formulated the Seventh Medium-Term Business Plan, recognizing that ensuring environmental and social sustainability (helping to solve critical issues) and establishing economic sustainability (stable earnings power) are key to the JFE Group's sustainable development. Accordingly, we reorganized our materiality by adding economic issues to our existing CSR issues to identify all our material issues of corporate management. We will demonstrate the Group's vision of "contributing to society with the world's most innovative technology" by working in concert to address these issues.

Process for Identifying Material Issues of Corporate Management

The JFE Group has been promoting actions that address the material CSR issues identified in 2016 (13 issues in 5 focus areas).

Refer to the following on how we identified material CSR issues up to FY2020.

➤ Material CSR Issues (CSR REPORT 2020) (https://www.jfe-holdings.co.jp/en/csr/pdf/csr_2020e.pdf)

In FY2021, JFE identified its material issues of corporate management through the following process.

STEP 1. Reassessment of Existing Material CSR Issues

The material CSR issues identified in 2016 were reassessed for their importance in terms of relating to current operations, stakeholder expectations and achievement of KPIs.

STEP 2. Setting of Material Economic Issues

Based on discussions at each operating company, major strategies in the Seventh Medium-Term Business Plan were grouped together with the sources of competitive advantages in the JFE Group's business model, and economic-related issues were clarified for the economic sustainability of the Group.

- Source of Competitive Advantage
  Steel and Trading Businesses: Production; Sales; and Technological Development
  Engineering Business: Engineering, Procurement, and Construction; Sales; and Technological Development

STEP 3. Selection of 20 Material Issue Candidates

Economic-related issues were added to the list of reassessed CSR issues, and their appropriateness as issues for the JFE Group was deliberated by the Group Management Strategy Committee, screening out 20 material issue candidates.

20 Candidates for Material Issues

- Achieve carbon neutrality by 2050
- Provide eco-friendly businesses and products
- Protect the global atmosphere
- Pursue resource recycling
- Prevent workplace accidents
- Ensure the health of employees and their families
- Pursue diversity and inclusion
- Strengthen human resources development
- Implement workstyle reform
- Increase efficiency and enhance cost competitiveness in production and EPC
- Stable supply of products and services
- Ensure quality
- Increase the added value of products and technologies
- Bolster sales capabilities
- Meet customer needs
- Develop and expand the base of our growth businesses
- Develop cutting-edge technology
- Ensure financial soundness
- Ensure adherence to corporate ethics and compliance
- Respect the human rights of each person involved in our business

STEP 4. Identification of the of the most important 13 Material Issues

The Group Management Strategy Committee and Board of Directors deliberated on the 20 candidate issues, and narrow them down by identifying the most important 13 material issues for the current JFE Group.

- Reduce the JFE Group's CO_2 emissions
- Contribute to reduction of CO_2 emissions across the society
- Prevent workplace accidents
- Ensure the health of employees and their families
- Pursue diversity and inclusion
- Strengthen human resources development
- Create workplaces that motivate employees
- Increase efficiency and enhance cost competitiveness in production and engineering
- Raise quality of products and services and ensure reliable supply
- Expand business by increasing value added in products and services with advanced technologies
- Sales strategies for realizing sustainable growth
- Ensure adherence to corporate ethics and compliance
- Respect human rights throughout the supply chain

Contribution 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 will respond to global community needs and try to contribute to SDGs by our business activities and actions for material issues.

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

	Areas of Focus	Details	Scope of Influence	Material Issues	Relevant SDGs
Activity	Contribute to resolving climate change issues (initiatives for achieving carbon neutrality by 2050)	•Initiatives for achieving carbon neutrality by 2050 ・Reduce the JFE Group's CO_2 emissions ・Contribute to reduction of CO_2 emissions in society	JFE Group Local communities near manufacturing sites Customers Society	Reduce the JFE Group's CO_2 emissions Contribute to reduction of CO_2 emissions across the society	6 7 9 12 13 14
	Ensure occupational safety and health	•Prioritize safety first •Maintain the physical and mental health of employees and their families	JFE Group Suppliers Business partners	Prevent workplace accidents Ensure the health of employees and their families	3 8
	Recruit and nurture diverse human resources	•Maintain work environments where all personnel can maximize their abilities •Accumulate and hand down technologies and skills	JFE Group Business partners	Pursue diversity and inclusion Strengthen human resources development Create workplaces that motivate employees	4 5 8 9 10
	Reinforce resilience of production and engineering capabilities (realize world-class earnings power through DX and other measures)	•Pursue **world-class earnings power** •**Promote DX** and other measures to improve production efficiency, yields, and labor productivity ・Shift focus of steel business from **quantity to quality (structural reform)** ・Reduce costs to strengthen cost competitiveness and ensure quality competitiveness	JFE Group Customers Society	Increase efficiency and enhance cost competitiveness in production and engineering Raise quality of products and services and ensure reliable supply	9 10 11 12
	Strengthen competitiveness of products and services (promote the growth strategy by providing high value-added solutions)	•**Improve margins** and ensure stable earnings power ・Increase ratio of **high value-added products and services** ・Ensure stable earnings power based on the sales strategy, including **technological solutions** and **expansion of growth businesses**	JFE Group Customers Society	Expand business by increasing value added in products and services with advanced technologies Sales strategies for realizing sustainable growth	7 9 11 12 13 17
Basis of activity	Thoroughly enforce compliance		JFE Group Suppliers Political authorities Society	Ensure adherence to corporate ethical standards and compliance	10 16
	Respect human rights			Respect human rights across the supply chain	

Increased corporate value and sustainable growth

Goals

Contribute to realizing sustainable societies

Corporate Governance (Ensure Fairness, Objectivity and Transparency)

Respect and Maintain Awareness of Human Rights

KPIs for Material Issues

FY2020 KPI Results and Evaluation

The JFE Group established KPIs to address the CSR issues identified in FY2016. It tackles these KPIs by focusing the power of the entire Group. In FY2020, the Group assessed the previous year's KPI results. Assessment results, together with opinions exchanged with stakeholders, were used to further review the KPIs and address each issue.

➤ FY2020 KPI Results (P.20)

FY2021 KPIs for Material Issues of Corporate Management

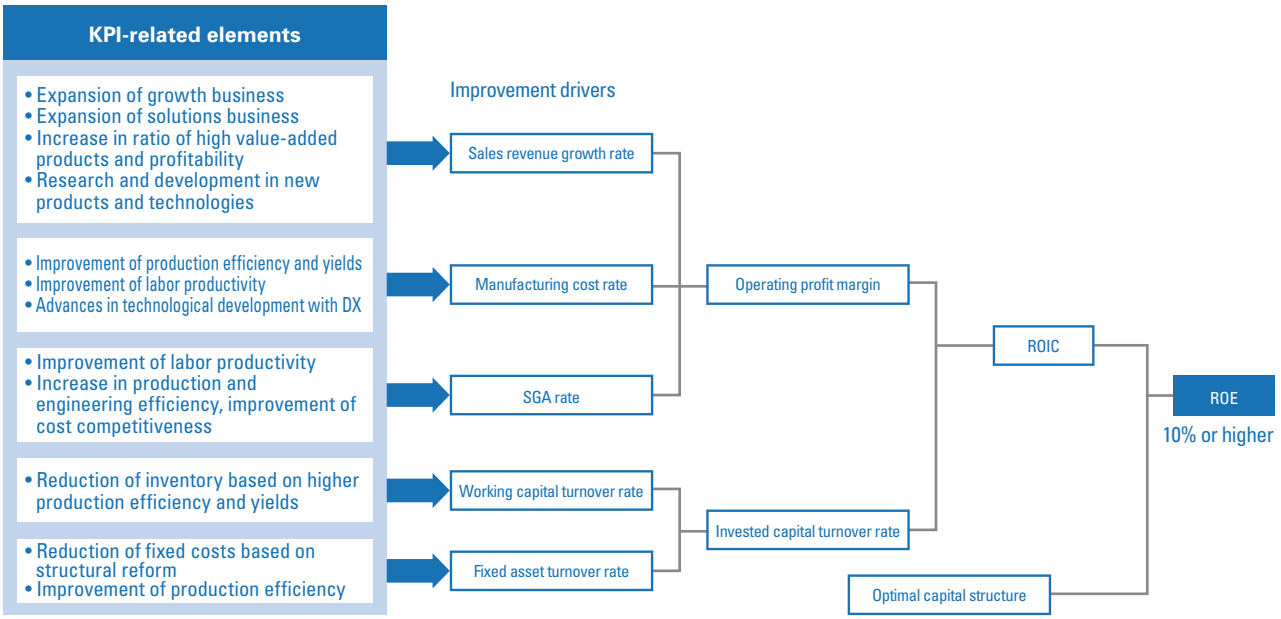
KPIs for material issues of corporate management identified in FY2021 were determined following consideration by each operating company, discussions by the Management Committee, and deliberation by the Group Management Strategy Committee and Board of Directors.

➤ FY2021 KPIs for Material Issues of Corporate Management (P.23)

Enhancing ROE by Achieving the KPIs

The KPIs for each material issue are closely tied to the financial targets. Achieving the KPIs for each issue affects various drivers of improvement, leading to the achievement of the financial target (10% or higher ROE) and results in increasing corporate value over the medium to long term. The connection between these initiatives for material issues and financial targets is deeply shared at operating companies and on the front lines, increasing the effectiveness of these initiatives.

■ Connection between KPI-related Elements and Financial Targets



FY2020 KPI Results

Assessment Standards

Target Attribute		○	△	×
Quantitative	Single-year target	100% achievement	At least 80%	Less than 80%
	Medium- to long-term target (when target is to be achieved in the next several years)	Final target of 100% is achieved	Working toward achieving the final target; partial success achieved (80% or more after linear interpolation)	Working toward the target, but short of success (less than 80% after linear interpolation)
Qualitative		Target is achieved	Working toward the target; partial success achieved	Working toward the target but short of success

Note: For targets or KPIs set to assess the Group as a whole, the overall will be that of the operating company that showed the lowest performance.

Areas of Focus		Material CSR Issues	Operating Company	Targets/KPIs	Initiatives and Results for FY2020	Assessment
Activity	Provide quality products (customer satisfaction)	**Stable supply of products**	S T	(1) Flexibly respond to changes in demand arising from environmental changes and maintain stable operations to ensure stable product supply (2) Make steady progress on strengthening the manufacturing base, including measures to stabilize blast furnace operation	• Improved facility operations at each steelwork and district by steady progress in strengthening the manufacturing infrastructures • Flexible operation of blast furnaces to match changes in demand during COVID-19 (introduction of CPS to blast furnace operations) • Maintained previous fiscal year's delivery achievement rate in FY2020, despite sharp swings in demand	○
			E N	• Secure a stable number of certificated managing engineers	• Stable number of managing engineers was secured while achieving high sales revenue	○
			S H	• Make consistent investment in processing and distribution operations	• Carried out selective investments necessary for this fiscal year to ensure stable product supply under COVID-19 Amount of investment (approved amount): ‣Reinforcement: 7.3 billion yen ‣Renewal and safety: 2.7 billion yen ‣System: 0.6 billion yen	○
		Ensure quality	S T	• Make steady progress on capital investments to improve the level of quality assurance and product testing, and achieve full automation of the four critical items: tensile test, molten steel analysis, steel sheet thickness measurement, and coating weight measurement	• Steadily invest in automation to finish all approved investments during FY2020 for reaching 100% automation of four priority areas from test measurements to mill sheet description (Automation achievement rate tensile test: 93.9%, molten steel analysis: 99.9%, automobile steel sheet thickness measurement: 98.7%, and coating weight measurement: 99.9%)	○
			E N	• No major quality problems	• Major quality problems: None (examples: legal violations, failure to fulfill customer requirements)	○
			S H	• Conduct quality audits at Group companies and continue conducting quality audits at 32 Group companies in Japan and overseas (expanded target companies from 30 to 32)	• Began considering quality audits by remote due to the difficulty of conducting on-site audits under COVID-19; determined procedures and methods based on preliminary check sheets and remote conferences in January 2021 • Completed quality audits for all 17 domestic Group companies (including remote audits for six companies)	○
		Pursue research and development	S T	(1) Pursue strategic research and development ‣By developing DS*1 application technology, in FY2020 aim to inaugurate the JFE Digital Transformation Center (JDXC*2), promote an AI application at blast furnaces, promote a DS application at three sintering plants in Fukuyama, and apply J-dscom*3 to all hot strip lines *1: Data Science *2: JFE Digital Transformation Center *3: JFE Detecting-anomaly-Signs & Color-Mapping system	(1) Pursued strategic research and development JDXC opened in July 2020, applied AI to blast furnaces, applied DS to three sintering plants in Fukuyama, and finished application of J-dscom to all hot strip lines	○
				(2) Develop new products and technologies FY2020: 20 cases or more (achieve the cumulative total of 135 cases from FY2015 to FY2020)	(2) Developed new products and technologies FY2020: 13 cases (3 new products, 10 new technologies) (total from FY2015 to FY2020: 152 cases) Note: Missed numerical target in FY2020 due to slowdown in economic activity associated with COVID-19 Achieved the target for cumulative total cases encompassing the Fifth and Sixth Medium-Term Business Plans	△
			E N	• Pursue technological development in three critical areas: leveraging ICT, climate change, and recycling plastics Numerical target: Ratio of R&D expenses for the three critical areas: 30% or more	• Ratio of R&D expenses for the three priority fields: 36% Total costs in FY2020 R&D: 4.07 billion yen, including 1.48 billion yen for three priority fields	○

Areas of Focus		Material CSR Issues	Operating Company	Targets/KPIs	Initiatives and Results for FY2020	Assessment
Activity	Provide quality products (customer satisfaction)	**Respond to customer needs**	ST	(1) All sales personnel are to take rank-based training for the sales department within two years of being posted to the department (2) Conduct CS survey and ensure feedback of results	(1) All office heads, managers, and newly appointed employees took the course within two years (2) Implemented feedback on CS survey results	○
			EN	• Use data collected from customer surveys to enhance customer satisfaction	• Collected construction completion evaluation forms for public-sector projects and customer surveys about quality management system (QMS) for private-sector projects (total: 322 projects) • Conveyed customer feedback to sector heads, divisions managers, and others	○
			SH	• Invest in the development of strong sales personnel All target employees are required to meet the goal of human resource development through skill training and participation of overseas employees in joint training held in Japan	• Fully achieved the target of human resource development through skill training; skill training: 4 courses, 125 participants	○
	Protect the global environment	**Develop and provide ecofriendly products**	ST	• Expand eco-friendly products and technological offerings: 15 or more in FY2020 (target accumulated total of 105 for the period from FY2015 to FY2020)	• FY2020: 10 cases (2 new products, 8 new technologies) (total from FY2015 to FY2018: 107 cases) Note: Missed numerical target in FY2020 due to slowdown in economic activity associated with COVID-19 Achieved the target for cumulative total cases encompassing the Fifth and Sixth Medium-Term Business Plans	△
			EN	• Create new business or products that contribute to environmental protection or expand business: at least one applicable case per year ▸Promote plastic recycling business ▸Promote food waste recycling business ▸Promote home electronic appliance and fluorescent light recycling business ▸Promote renewable energy-generated power supply business ▸Develop and offer eco-friendly products	• Implemented 3 cases of new business and business expansion ▸Established a Bottle-to-Bottle joint venture (Kyoei J&T Recycling) ▸Launched a joint venture with three companies for biogas power generation from food waste (Tohoku Biofood Recycling) ▸Inherited the refuse-derived fuel (RDF) gasifying power generation business (Omuta Recycle Electric Generation)	○
		Mitigate climate change	ST	• Aim to reduce our CO_2 emissions by at least 20% in FY2030 from FY2013 level • Establish project team and formulate and implement a scenario by the end of FY2020 to realize the above • Participate in technological development led by the New Energy and Industrial Technology Development Organization (NEDO) to realize zero-carbon steel; develop a long-term road map in 2020 to 2021 for technological development • Begin actual operation testing with a ferro-coke pilot plant	• Disclosed the FY2030 target for reducing CO_2 emissions by at least 20% from FY2013 level • Project team launched for CO_2 reduction and formulated a scenario for achieving carbon neutrality • Participated in the NEDO technological development project for making zero-carbon steel a reality • Began verification tests at the ferro-coke production pilot plant (NEDO project)	○
			EN	(1) Two or more offerings per year of products/services that contribute to climate change mitigation ▸Promote waste-fueled power generation ▸Promote biomass power generation ▸Promote a digestion gas power generation plant ▸Promote geothermal, solar photovoltaic, and wind power generation (2) At least 1% y-o-y reduction of carbon footprint of factories and offices	(1) Delivered two biomass power generation plants and two large-scale solar power generation plants (2) Achieved 16% reduction (FY2019: 16,800 t/year, FY2020: 14,100 t/year)	○
		Protect the global atmosphere	ST	(1) Continue work on keeping NOx and SOx emissions at low levels (2) VOC emissions: maintain a low level (30% decrease compared to FY2000) (3) Benzene emissions: maintain a low level (80% decrease compared to FY1999) (4) Dichloromethane emissions: maintain a low level (40% decrease compared to FY1999)	(1) Continued work on keeping NOx and SOx emissions at low levels (2) VOC emissions: 66% decrease (3) Benzene emissions: 94% decrease (4) Dichloromethane emissions: 71% decrease	○
			EN	• Continue work on keeping NOx and SOx emissions at low levels	• Successfully maintained low emissions as it was significantly less than the value equivalent to the total annual volume restriction: NOx: 124 Nm^3 (18,000 Nm^3) SOx: 42 Nm^3 (100 Nm^3) Note: The amount in parenthesis represents the value equivalent to the total volume restriction	○
		Pursue resource recycling	ST	(1) Maintain the efficient use of water Recirculated water usage rate: 90% or more (2) Recycling rate of co-products: 99% or more	(1) Recirculated water usage rate: 93.0% (2) Recycling rate of co-products: 99.7%	○
			EN	(1) Recycling rate at construction sites ▸Recycle at least 99.5% of rubble ▸Recycle at least 95.0% of sludge ▸Recycle at least 85.0% of industrial waste	(1) Recycling rates ▸Rubble: 99.4% ▸Sludge: 98.9% ▸Industrial waste: 85.4%	△
				(2) Recycle at least 98.0% of recyclable wastes generated at the Yokohama head office	(2) 99.1%	○
			SH	• Global recycling of steel scrap: Increase scrap transactions to exceed the volume for FY2017 (FY2020 target: +3% from FY2017)	• Contributed to the expansion of a recycling-oriented society by steadily increasing scrap transactions since FY2017 • Domestic transactions volume decreased in FY2020 to levels lower than in FY2017 due to COVID-19, failing to meet the target (−1.7% from FY2017)	×

Areas of Focus		Material CSR Issues	Operating Company	Targets/KPIs	Initiatives and Results for FY2020	Assessment
Activity	Ensure occupational safety and health	**Prevent workplace accidents**	Groupwide	(1) Workplace fatalities: zero occurrences (2) ST Lost-work injuries rate for ST: up to 0.10 Key measures: (1) Strengthen safety activities at each business unit to cover weak areas (2) Restructure the safety and health management system (introduce ISO) (3) Implement safety activities that utilize ICT (specific initiatives: introduce safety monitoring system, support for safe work using AI image analysis, etc.) EN Lost-work injuries rate for EN: up to 0.25 Key measures: (1) Build a floor or hand rail for work in high places and wear safety belt (2) Restrict people from areas near hoisted objects or heavy machinery in operation (3) Turn off equipment, machines, and tools when not in use (4) Verbal communication on safety awareness during site patrol and implementing corrective measures Example of advanced initiative: ‣Safety training by experiencing dangerous situations using VR and special vehicles designed to instill an understanding of the sense of safety SH Key measures: ‣Improve equipment (promoting installation of safety sensors, etc.) to prevent contact between people and objects in motion	(1) Workplace fatalities: 1 occurrence (2) ST Lost-work injuries rate: 0.23 Key measures: (1) Lost work injuries rate: Improved from 0.28 in the first half to 0.18 in the latter half (2) Restructure the safety and health management system: started implementing the system in all districts (3) Safety monitoring system: Completed companywide deployment (users: about 2,400) EN Lost-work injury rate: 0.35 Key measures: (1) Prioritized the following actions to prevent workplace fatalities ‣Installed working platforms / handrails and ensured wearing safety belts for work in high places ‣Ensured people remained at a safe distance from hoisted objects and heavy machinery in operation ‣Turn off equipment, machines, and tools while non-standard operations (2) Made a focused effort on verbal communication during site patrols and implemented corrective measures to prevent unsafe behavior by relevant employees (3) Promoted safety training based on a simulated experience of accidents using special vehicles and VR to increase the sensitivity for safety SH Key measures: ‣Installation of safety sensors 81% of the installations by the end of FY2020 Note: Installations to be completed by end of November 2021 ‣Continued “100% adherence activities” ‣Promoted fixed-point patrols (patrols for closely observing and understanding tasks) and eliminated tasks unknown to managers and supervisors	×
		Ensure the health of employees and their families	Groupwide	• Provision rates of health guidance: ST 60% (by FY2023) EN 35% (by FY2020) SH 40% (by FY2020)	• Provision rates of health guidance: ST 53.0% EN 39.1% SH 41.6%	△
				• Rate of health examination for spouses: 60% (by FY2020)	• Rate of health examination for spouses: ST 48.0% EN 47.2% SH 53.2%	△
	Recruit and nurture diverse human resources	**Pursue diversity and inclusion**	Groupwide	• Ratios for female recruits ST Career-track (white-collar position): 35% or more Career-track (technical position): 10% or more On-site position: 10% or more EN Career-track (white-collar position): 20% or more Production/construction position (technical): 5% or more SH Career-track (white-collar position): 25% or more	• Ratios for female recruits ST Career-track (white-collar position): 28% Career-track (technical position): 7% On-site position: 7% EN Career-track (white-collar position): 18% Production/construction position (technical): 0% SH Career-track (white-collar position): 26.7%	×
				• Females in managerial positions: five times the 2014 August figure by 2025	• Females in managerial positions: 3.6 times the 2014 August figure	△
		Strengthen human resources development	Groupwide	• Training hours per person ST Over 40 each year EN Over 20 each year SH Over 20 each year	• Training hours per person ST 38.5 hours per year EN 19.0 hours per year SH 17.5 hours per year	△
				• 100% attendance from the target audience for human rights awareness training	• Rate of attendance for human rights awareness training: 100%	○
Basis of activity	Thoroughly enforce compliance	**Ensure adherence to corporate ethical standards and compliance**	Groupwide	• Steady execution of training to foster and maintain a sense of compliance (100% achievement)	• Steadily executed training to foster and maintain a sense of compliance (100% achievement)	○
				• Improve employee awareness of ethics reflected in the Corporate Ethics Awareness Survey	• Improved employee awareness of ethics reflected in the Corporate Ethics Awareness Survey (next survey is scheduled in FY2022)	—

KPIs for FY2021

Areas of Focus		Material Issues	Operating Company	KPIs
Activity	Contribute to resolving climate change issues (initiatives for achieving carbon neutrality by 2050)	**Reduce the JFE Group's CO_2 emissions**	ST	• Formulate an investment plan for CO_2 reduction using new benchmarks for steadily achieving the target of reducing CO_2 emissions by 18% from FY2013 levels by the end of FY2024 • Achieve 35% of its CO_2 reduction target by energy conservation and technological development in FY2021 • Create a structure for promoting technological development with a focus on carbon recycling blast furnaces toward achieving carbon neutrality by 2050
			EN	• Reduce CO_2 emissions in its own plants and offices FY2024: 40% reduction from FY2013 levels
			SH	• Reduce CO_2 emissions through the procurement of electricity derived from renewable energy (reduce domestic CO_2 emissions by at least 20% from FY2019 levels by the end of FY2024)
		Contribute to reduction of CO_2 emissions across the society	ST	• Launch sales and implement eco-friendly products and technologies*: at least 15 cases in FY2021 (the cumulative total of at least 60 cases for the period from FY2021 to FY2024) *Products and technologies that contribute to saving energy and resources, reduce waste and environmentally hazardous substances, and do not require hazardous substances for manufacturing or use
			EN	• Provide renewable energy power generation facilities • Help reduce CO_2 emissions in society by expanding the bases of the recycling business (for plastic, food, etc.) Contribute to reduction in CO_2 emissions (FY2021): 10 million tonnes per year
			SH	(1) Global resource recycling of steel scrap • Promote steel scrap transactions to exceed the volume for FY2020 (FY2024 target: +5% from FY2020) (2) Increase transaction quantity of fuel for biomass power generation plants and create framework for reliable supply of fuel • Expand transactions of biomass fuel (palm kernel shells and wood pellets) above FY2020 levels (FY2024 target: +100% increase from FY2020) • Diversify supply sources to ensure stable supply
	Ensure occupational safety and health	**Prevent workplace accidents**	Groupwide	Workplace fatalities: Zero occurrences • Lost-work injuries rate ST below 0.10 EN below 0.25 SH below 0.45
			ST	Key measures: (1) Enhance safety Install electromagnetic locks at the secondary mill entrances: 100% by FY2024 (2) Restructure the safety and health management system ISO 45001 certification in all districts: 100% by FY2022
			EN	Key measures: (1) Eliminate falling accidents (100% implementation of following measures) ‣Pre-operation checks (curing openings in high locations and edges of work floors) ‣Strict adherence during operations (use of safety belts) (2) Eliminate accidents involving being caught in heavy machinery or struck by flying/falling objects (100% implementation of following measures) ‣Pre-operation checks (ensure on-site understanding of work plans) ‣Strict adherence during operations (no entry measures, allocation of worksite guides) (3) Turn off equipment, machines, and tools while non-standard operations (4) Multifaceted management of occupational safety and health ‣Conduct remote safety patrols on premises by integrating multiple video images ‣Introduce an AI-based system for detecting intruders
			SH	Key measures: (1) Install safety sensors (100% of plan) (2) 100% implementation of crane operation drills (at least once a year at each company)

Areas of Focus		Material Issues	Operating Company	KPIs
Activity	Ensure occupational safety and health	**Ensure the health of employees and their families**	Groupwide	(1) Provision rates of healthcare guidance Groupwide: 60% (FY2023 target) (2) Reduce rates of smokers (ensure employee health and prevent exposure to passive smoke) Groupwide: 1.5% reduction per year (total for operating companies)
	Recruit and nurture diverse human resources	**Pursue diversity and inclusion**	Groupwide	(1) Rates for female recruits ST Career-track (white-collar position): 35% or more Career-track (technical position): 10% or more On-site position: 10% or more EN Career-track (white-collar position): 35% or more Career-track (technical position): 10% or more Production/construction position: 10% or more (four-year average) SH Career-track position: 30% or more (2) Females in managerial positions: 5 times the 2014 August figure (FY2025 target) (3) Rate of male employees taking childcare leave or time off related to child rearing: at least 90%
		Strengthen human resources development	Groupwide	• Training hours per person ST 40 hours or more per year EN 20 hours or more per year SH 20 hours or more per year
		Create workplaces that motivate employees	Groupwide	Groupwide: Annual leave acquisition rate of at least 75% (total for operating companies)
			ST	• Engagement survey Affirmative response to questions about motivation: 75%
	Reinforce resilience of production and engineering capabilities (realize world-class earnings power through DX and other measures)	**Increase efficiency and enhance cost competitiveness in production and engineering**	ST	(1) Improve labor productivity by 20% by the end of FY2024 FY2021 KPI: • Establish investment plans for automation, remote operation and robotics with a focus on DX • Set milestones for investment and number of personnel for each fiscal year • Plan and systemize concrete labor policies to smoothly facilitate structural reform of the Keihin district (2) Achieve stable quality and enhance yields through measures including introduction of quality prediction technology based on integrated data encompassing the entire process from steelmaking to final processing using DS* Improve yields by 0.5% in FY2021 to achieve 2% by FY2024 *Data Science
			EN	• Increase the efficiency of engineering operations by introducing DX technologies 1,200 engineers for big data analysis utilizing Pla'cello* *Proprietary data analysis platform using AI
		Raise quality of products and services and ensure reliable supply	ST	(1) Make steady progress on capital investments to improve the level of quality assurance and product testing, and achieve 100% automation from test measurement to mill sheet data entry for the four priority items: tensile test, molten steel analysis, thickness measurement for hot and cold rolled steel sheets, and coating weight measurement In addition, achieve 100% automation from test instructions, sample collation to test measurement and mill sheet data entry (2) Strengthen the manufacturing infrastructures using DX Aim to apply to equipment listed below in FY2021 to implement CPS* in all production processes by the end of FY2024 Kurashiki's new continuous casting DS operations, hot rolling CPS (temperature model/Kurashiki), cold rolling CPS (automatic operation/Kurashiki) and integrated quality CPS (galvanizing/Fukuyama) *Cyber-Physical System
			EN	(1) Secure a stable number of certificated managing engineers (2) No major quality problems
			SH	(1) Make consistent investment in processing and distribution operations (2) Conduct quality audits at Group companies • Continue conducting quality audits at 32 Group manufacturing affiliate companies in Japan and overseas (audit completed: 100%)

Areas of Focus		Material Issues	Operating Company	KPIs
Activity	Strengthen competitiveness of products and services (promote the growth strategy by providing high value-added solutions)	**Expand business by increasing value added in products and services with advanced technologies**	S T	(1) Pursue strategic research and development focusing on priority development fields* Develop new products and technologies FY2021: at least 20 cases (at least 80 cases in total from FY2021 to FY2024) *Automobiles, energy, infrastructure construction materials, DX technology, and green transformation (GX) technology (2) Increase the mix of high value-added products* to 50% in FY2024 (sell 10.9 million tonnes, 50% of sales excluding half-finished products, by FY2024) FY2021 KPI: 9.3 million tonnes in sales of high value-added products (up 1.5 million tonnes from FY2020) *Products that offer technological advantages and are recognized by customers for their added value while having greater earnings power than commodity products (3) As a step toward triple earnings in the solution business by FY2024 from the FY2020 level, focus efforts on receiving orders for the new solutions business model (utilization of DS, provision of maintenance technologies, etc.) and secure first order. With an eye on receiving continuous orders thereafter, update external sales platform and maintenance know-how
			E N	(1) Develop technologies in four priority fields of waste to resources, carbon-neutrality, combined utility service and DX, and at least 60% of R&D expenses on these four fields (2) Number of patent applications: at least 80 per year
		Sales strategies for realizing sustainable growth	S T	• Expand the earnings difference between high value-added products (A-rank products) and commodity products to 5,000 yen per tonnes by FY2024 FY2021 KPI: Aim for 25% of target
			E N	Expand the stable earnings base Expand the operating businesses (1) Sales: 250 billion yen (2) Expand bases: at least 3 bases • Recycling business (food, plastics, electronic appliances, etc.) • Regional electricity retail new power business • Waste processing business • Water and sewage operations business
			S H	Increase competitiveness of products and services by improving value added in supply chain management through business expansion • Make investments to improve value added in supply chain: at least 5 per year
Basis of activity	Thoroughly enforce compliance	**Ensure adherence to corporate ethical standards and compliance**	Groupwide	(1) Steady execution of training to foster and maintain a sense of compliance (100% attendance from the target audience) (2) Improve employee awareness of ethics reflected in the Corporate Ethics Awareness Survey (next survey is scheduled for FY2022)
	Respect human rights	**Respect human rights across the supply chain**		(1) 100% attendance from the target audience for human rights awareness training (2) Implement human rights due diligence

CSR Structure

JFR Group CSR System

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

Supervision over CSR Initiatives

The Group established the JFE Group CSR Council, chaired by the president of JFE Holdings and comprised of the executive vice president (director), corporate officers, full-time Audit & Supervisory Board members, the presidents of operating companies, and other members to oversee and direct the CSR initiatives of the entire organization, including risk management, from the perspective of preventing damage to the JFE Group's corporate value and enhancing it. Independent, cross-Group committees have been established under the council, including the JFE Group Compliance Committee, JFE Group Environmental Committee, JFE Group Internal Control Committee, JFE Group Information Security Committee, Public Disclosure Committee, and Corporate Value Enhancement Committee. Overseeing and directing the Group's CSR initiatives, these committees deliberate on Group policies, monitor how they are being instilled across the Group, and share information on the tasks at hand as well as on issues that have materialized and relevant responses. Included in the agenda discussed by the JFE Group CSR Council, the Group's basic policies, action plans, content of key initiatives and response to critical circumstances are reported regularly to the Board of Directors, which deliberates on the issues and provides the council with direction and supervision.

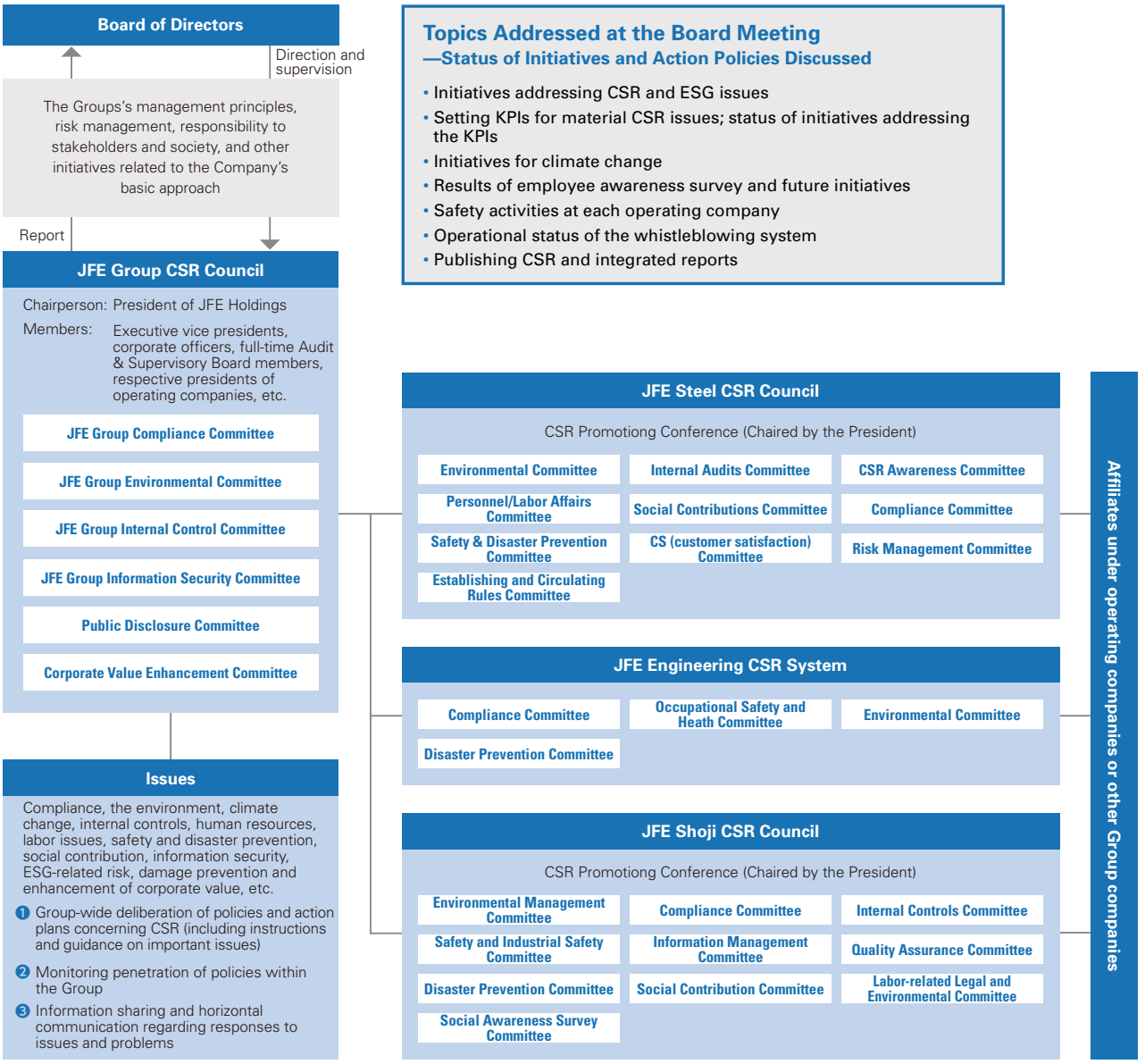
JFE Group CSR Council Activities

The Group CSR Council meets approximately once every three months to discuss wide-ranging issues such as the antimonopoly act, compliance with laws and regulations to prevent corruption such as bribery involving public servants and other officials, human resources, labor issues, safety, disaster prevention, the environment, climate change, quality, financial reports, addressing antisocial forces, risk management including information security and other ESG-related risks, and social contribution. The council deliberates on policies related to Group initiatives, which also include providing instruction and guidance on material issues, monitors the penetration of the policies, and shares information on and carries out horizontal communication regarding our responses to issues and problems.

Cooperation with Operating Companies

The operating companies have also set up respective entities, which operate in collaboration with the JFE Group CSR Council to promote Group-wide CSR initiatives from the perspective of preventing damage to the JFE Group's corporate value and enhancing that value. JFE Steel established the CSR Council chaired by the president in July 2005, following the establishment of the CSR Section in April 2005. Specific committees and sub-committees in areas such as compliance, global environment, risk management, safety and disaster prevention, customer satisfaction, social contributions, etc., established under the CSR Council have been actively conducting the activities in each area, while promoting CSR awareness together with the Group companies. JFE Engineering and JFE Shoji also lead in the promotion of CSR through the establishment of committees in areas such as compliance and the environment.

■ CSR Structure



Confirmation and Improvement through the Employee Awareness Survey

The JFE Group conducts a Corporate Ethics Awareness Survey on a regular basis(once every three years) for directors and employees of the Company as well as the operating companies to confirm the penetration and thorough compliance of the Group's Corporate Vision, Corporate Values, and Standards of Business Conduct, along with the identification of potential risks. The survey conducted in FY2019 confirmed that many employees acknowledged the vision and corporate policy and are aware of compliance matters when carrying out their work. On the other hand, the survey also brought to our attention issues to address going forward. These are reflected in the specific initiatives of each Group company under the supervision of the JFE Group CSR Council and Board of Directors.

CSR Audit

To ensure that CSR activities are conducted properly, the JFE Group systematically audits 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 in their CSR activity.

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		Related SDGs
CSR Management		
Supply Chain Management (P.46)	• romoting Green Procurement • Procurement Policy and Initiatives for Each Business	
Addressing ESG Issues		
Environmental Management (P.49)	• Promotion of Environmental Management System • Environmental Education	
Climate Change (P.55)	• Reduction of CO_2 in the Steel Business • Greater Contribution to Reducing CO_2 in Society as a Whole • Scenario Analysis Based on TCFD Recommendations	
Development and Provision of Eco-friendly Processes and Products (P.94)	• Major Eco-friendly Products and Technologies in Each Business	
Efficient Use of Resources (P.113)	• Reducing Generation and Emission of Co-products and Re-using Co-products • Promoting Recycling • Resource Recycling Solution	
Water Security (P.117)	• Addressing Water-related Risks • Efficient Use of Water	
Prevention of Pollution (P.120)	• Controlling Air Emissions • Preventing Water Pollution • Management of Chemical Substances and Reduction of Emissions	

Activities		Related SDGs
Biodiversity (P.125)	• Biodiversity Initiatives • Commitments to External Initiatives • Products and Technologies to Preserve Biodiversity	
Environmental Communication (P.129)	• Disclosing Environmental Data for Business Sites • Disclosure and Exchange of Information	
Responsibility to Customers (Provide Quality Products and Enhance Customer Satisfaction) (P.131)	• Quality Initiatives • Quality Improvement and Enforcement of Quality Assurance Systems • Improving Customer Satisfaction • Responsible Export Practices	
Occupational Health and Safety (P.138)	• Occupational Health and Safety • Employee Health	
Labor Standards (Recruit and Nurture Diverse Human Resources) (P.148)	• Workstyle Reform • Operational Reform • Workforce Diversity Promotion • Developing Dynamic Work Environments	
Human Rights (P.160)	• Respecting Human Rights Initiatives • Human Rights Due Diligence	
Community (P.166)	• Local activities • Support for External Organizations • Support for Youth Development • JFE 21st Century Foundation	
Shareholders and Investors (P.176)	• Proactive Information Disclosure	
Compliance (P.189)	• Adherence to Ethical Standard; Legal Compliance	
Tax Transparency (P.197)	• Tax Transparency	

Stakeholder Engagement

The JFE Group strives to maintain agreeable and favorable relationships with all stakeholders, including Stakeholder Engagement shareholders, customers, clients, employees, and local communities, for the sustainable growth and medium- to long-term increase of corporate value.

■ Engagement with JFE's Major Stakeholders

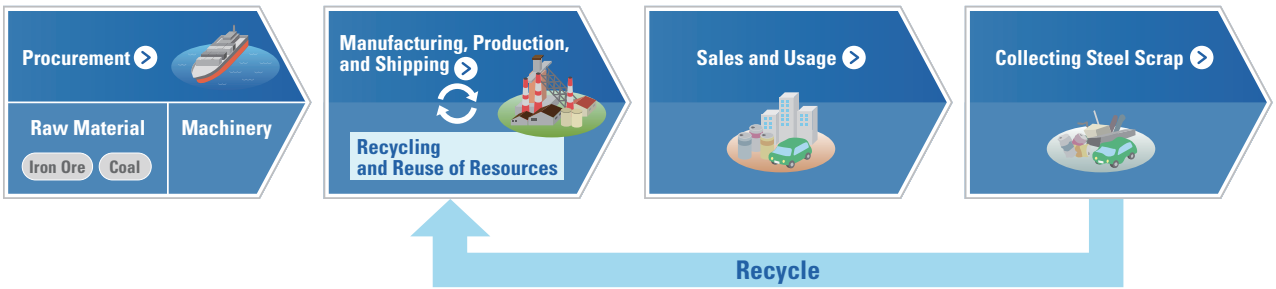
Stakeholder	Major Communication Methods, etc.	Others	
		Frequency (per year)	Scale, etc.
Shareholders and Investors			
We work to disclose information accurately, fairly and in a timely and appropriate manner as well as strive for active communication. We established the Investor Relations and Corporate Communications Department as an organization responsible for communication with domestic and international shareholders and investors, and to promote constructive dialogue as well as provide management with the information acquired, with the aim of maintaining and improving the relationship of trust.	Ordinary general meeting of shareholders (convocation notices, notices of resolution, etc.)	1	Approx. 150,000 shareholders
	Investors meeting (financial results, medium-term businessplan, etc.), ESG briefings	5	Approx. 600 persons in total
	Individual meeting (financial results, medium-term businessplan, etc.)	As needed	Approx. 300 persons in total
	Briefings	4	Approx. 1,500 persons
	Plant tours for shareholders (steel, engineering, shipbuilding bases) (Note: FY2019 results; plant tours were canceled in FY2020 due to the COVID-19 pandemic)	23	Approx. 1,800 persons
	Publishing shareholder newsletters (JFE Dayori)	2 (mid-year and annual)	Approx. 220,000 copies/issues
	Various reports, including integrated reports and CSR reports (Note: Number of issues published is for the integrated report; CSR report is only posted online)	1	Approx. 25,000 copies
	Information via websites (for shareholders and investors), etc.	As needed	Conducted at each operating company
Customers			
The Group believes that the stable supply of products and services and reliable quality assurance, along with advancing research and development, are necessary to meet customer needs. We will work to establish win-win relationships by continuously meeting customer needs and the trust they place in us.	Communication through sales activities and sales support for quality assurance	As needed	Conducted at each operating company
	Interviews and questionnaires, such as those related to customer satisfaction	As needed	Conducted at each operating company
	Information via websites (product information), etc.	As needed	

Stakeholder	Major Communication Methods, etc.	Others	
		Frequency (per year)	Scale, etc.
Employees			
CSR initiatives are being actively pursued together with our clients, who are important business partners. We have established Purchasing and Procurement Policies to promote fair and sincere procurement activities and to construct healthy relationships with clients.	Communications through daily operations and in the workplace	As needed	
	Internal newsletters and intranet	As needed	
	Various labor-management commitees	2 to 4	Management and labor unions at each operating company
	Corporate Ethics Hotline	As needed	87 consultations in FY2020
	Various training sessions	As needed	Position-specific, compliance, human rights, etc.
	Family days (visits by employee families, lunch at employees'cafeteria), etc.	As needed	Conducted at each operating company
	Corporate Ethics Awareness Survey	1 (every 3 years)	At the Company and operating companies
	Engagement Survey (employee satisfaction survey) Note: Questionnaire targeting all employees for surveying the level of satisfaction and applying results to initiatives and operations.	1 (per year)	At the Company and JFE Steel
	Management feedback (360 degree analysis) Note: Corporate officers and managers are evaluated by co-workers and subordinates, and receive feedback.	1 (per year)	At the Company and JFE Steel
Local communities			
To ensure business continuity at manufacturing bases where steelworks are located and elsewhere, constructing a relationship of trust with citizens in local communities and realizing coexistence and prosperity are crucial. We will pursue various activities with the aim of realizing sustainable growth and regional development, including continued initiatives toward ensuring safety and reducing our environmental impact.	Communication through local residents' association, events,etc.	As needed	
	Events at manufacturing bases (festivals, etc.)	1 (per year, per region)	Approx. 270,000 persons per year
	Plant tours	As needed	More than 100,000 persons per year
	Cleanup activities (vicinity of manufacturing bases, regional cleaning, etc.)	As needed	
	Sports promotion (baseball or jogging workshops, various sports competitions, etc.)	As needed	
	Others (dispatch of lecturers to elementary schools, craft workshops, workplace experience events, etc.)	As needed	
	Information via websites (environmental info, etc.)	As needed	
	Social contribution through **JFE 21st Century Foundation** (various research support, regional activity support, etc.)	As needed	

JFE Group Value Chain

The JFE Group's value chain encompasses upstream and downstream activities across the globe. We seek to address social challenges by identifying the risks and opportunities that the Group must resolve through its business operations and pursue initiatives that tackle those challenges. We will also continue to strengthen the sustainability of the entire Group and implement countermeasures throughout our value chain.

Overview of the Value Chain



Procurement

To ensure stable supply of iron ore and coal used as raw materials in the production of steel products, we purchase from various sources around the world such as Australia, North and South America, Russia, and Africa and transport materials to the steelworks on a special vessel. Equipment and materials used at steelworks plants are also purchased globally.

Manufacturing, Production, and Shipping

The JFE Group is one of the world's largest steelmakers and has cutting-edge technologies for the efficient production and stable supply of high-quality steel products, used in products indispensable to daily life such as automobiles, infrastructure, and home appliances. We also promote resource recycling by recycling steel scrap generated in the process of producing steel products while also repurposing iron and steel slag in cement and other construction materials.

Sales and Usage

The JFE Group is committed to developing eco-friendly products such as high tensile strength steel sheets that help reduce the weight of automobiles as well as electrical steel sheets used in electric vehicles. We support the frontier of production by responding to the diverse needs of different industries through research and development and by improving production technologies.

Collecting Steel Scrap

Steel products at the end of their product life cycle are collected as steel scrap and recycled as materials for the steel production cycle.

Environment

Challenges in the Value Chain	Procurement		Manufacturing, Production, and Shipping	Sales and Usage	Collecting Steel Scrap
	Raw Material Iron Ore/Coal	Machinery			
Climate Change					
JFE Group views the issue of climate change as a critical managerial concern from the perspective of business continuity, and it considers achieving carbon neutrality by 2050 a top priority. By designating climate change issue as a material issue of corporate management, we are actively tackling the challenge to solve this issue.					
Opportunities - Increased need for renewable energy solutions - Expand electric furnace steelmaking and electric furnace engineering businesses - Contribute to reduced CO_2 emissions by providing high-performance steel such as high tensile strength steel sheets and electrical steel sheets			●	●	●
Risks - Physical and transitional impact of climate change (CO_2 emissions, water risk, etc.) - Introduction of a carbon tax - Disruptions to the supply chain caused by climate change-related disasters, natural disasters such as earthquakes - Risk of floods associated with rising sea levels	●	●	●	●	●

Key Initiatives

➤ Climate Change (P.55)

Related Pages

➤ Supply Chain Management (P.46) ➤ Development and Provision of Eco-friendly Processes and Products (P.94)
➤ Scenario Analysis in Line with the TCFD Recommendations (P.77)
➤ Steel Industry Initiatives (P.90) ➤ Environmental Data (P.198)

Challenges in the Value Chain	Procurement		Manufacturing, Production, and Shipping	Sales and Usage	Collecting Steel Scrap
	Raw Material Iron Ore/Coal	Machinery			
Development and Provision of Eco-friendly Processes and Products					
Under our corporate philosophy of contributing to society with the world's most innovative technology, the JFE Group strives to reduce its environmental impact by developing steel manufacturing processes and providing technologies and products with due consideration for the environment.					
Opportunities - Develop eco-friendly innovative technologies and ensure competitiveness			●	●	
Risks - Heightened decarbonization needs in iron and steelmaking process - Tighter environmental regulations - Increased environmental impact during product use			●	●	●
Key Initiatives ➤ Development and Provision of Eco-friendly Processes and Products (P.94)					
Efficient Use of Resources					
Given that such issues as resource depletion and environmental pollution are expected to intensify on a global scale, the JFE Group is enhancing resource recycling through recycling co-products generated in the iron and steelmaking process and promoting the international recycling of steel scrap.					
Opportunities - Renewed interest in recyclability of steel - Increased use of scrap - Expand the scrap distribution business			●	●	●
Risks - Shortage of disposal sites for waste generated - Resource depletion - Declining in the grade, rising price and difficulty of obtaining obsolete scrap	●	●	●		●
Key Initiatives ➤ Efficient Use of Resources (P.113) **Related Pages** ➤ Development and Provision of Eco-friendly Processes and Products (P.94) ➤ Environmental Data (P.198)					

Challenges in the Value Chain	Procurement		Manufacturing, Production, and Shipping	Sales and Usage	Collecting Steel Scrap
	Raw Material Iron Ore/Coal	Machinery			
Water Security					
Steel manufacturing requires large quantities of fresh water for cooling and cleansing products and facilities. For this reason, the efficient use of water resources with due consideration to the source of the water and stakeholders in the area is a key challenge.					
Risks - Increased environmental impact - Tighter environmental regulations - Risk of drought in the water intake area, risk of pollution in the discharge area	●	●	●		
Key Initiatives ➤ Water Security (P.117) **Related Pages** ➤ Development and Provision of Eco-friendly Processes and Products (P.94) ➤ Environmental Data (P.198)					
Prevention of Pollution					
Controlling air pollutant emissions and aggressively investing in environmental preservation are key for achieving co-existence and mutual prosperity with local communities, the global environment, and society at large as well as ensuring business continuity.					
Risks - Increased environmental impact - Tighter environmental regulations	●	●	●	●	
Key Initiatives ➤ Prevention of Pollution (P.120) **Related Pages** ➤ Development and Provision of Eco-friendly Processes and Products (P.94) ➤ Environmental Data (P.198)					

Social

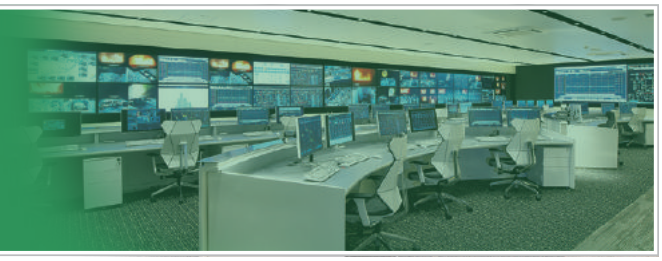
Challenges in the Value Chain	Procurement		Manufacturing, Production, and Shipping	Sales and Usage	Collecting Steel Scrap
	Raw Material Iron Ore/Coal	Machinery			
Responsibility to Customers					
The JFE Group provides steel products used in diverse areas that are indispensable to daily life, such as automobiles, infrastructure, and home appliances. One of our key responsibilities is to serve customers by meeting their quality requirements and providing a stable supply of products.					
Opportunities - Expansion of CSR procurement and development of structure for stable procurement - Ensure competitiveness through stable production and stable quality	●	●	●	●	●
Risks - Disruptions to the supply chain caused by climate change-related disasters, natural disasters such as earthquakes, and COVID-19 - Lose credibility with customers due to issues related to production and quality - Declining in the grade, rising price and difficulty of obtaining obsolete scrap	●	●	●	●	●
Key Initiatives ➤ Responsibility to Customers (Provide Quality Products and Enhance Customer Satisfaction) (P.131) **Related Pages** ➤ Supply Chain Management (P.46) ➤ Social Data (P.220)					
Occupational 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.					
Risks - Occurrence of accidents, including occupational injuries	●	●	●	●	●
Key Initiatives ➤ Occupational Health and Safety (P.138) **Related Pages** ➤ Supply Chain Management (P.46) ➤ Social Data (P.220)					

Challenges in the Value Chain	Procurement		Manufacturing, Production, and Shipping	Sales and Usage	Collecting Steel Scrap
	Raw Material Iron Ore/Coal	Machinery			
Labor Standards					
The JFE Group creates satisfying workplace environments and systems that incorporate diverse workstyles and enable employees with different backgrounds to fully demonstrate their abilities. We do this not only to comply with laws and regulations but also to achieve sustainable corporate growth.					
Opportunities - Secure excellent human resources through workstyle reform			●		
Risks - Labor shortage - Labor risks - Culture of passing down technical skills is dying out	●	●	●	●	●
Key Initiatives ➤ Labor Standards (Recruit and Nurture Diverse Human Resources) (P.148) **Related Pages** ➤ Social Data (P.220)					
Human Rights					
The JFE Group views respect for human rights as both a corporate social responsibility and a foundation of its business. Our determination to not engage in discrimination in our business activities is clearly expressed in our Standards of Business Conduct, which we have upheld throughout our actions. And we pursue Group-wide initiatives based on the United Nations Guiding Principles on Business and Human Rights.					
Risks - Potential human rights risks	●	●	●	●	●
Key Initiatives ➤ Human Rights (P.160) **Related Pages** ➤ Supply Chain Management (P.46) ➤ Social Data (P.220)					

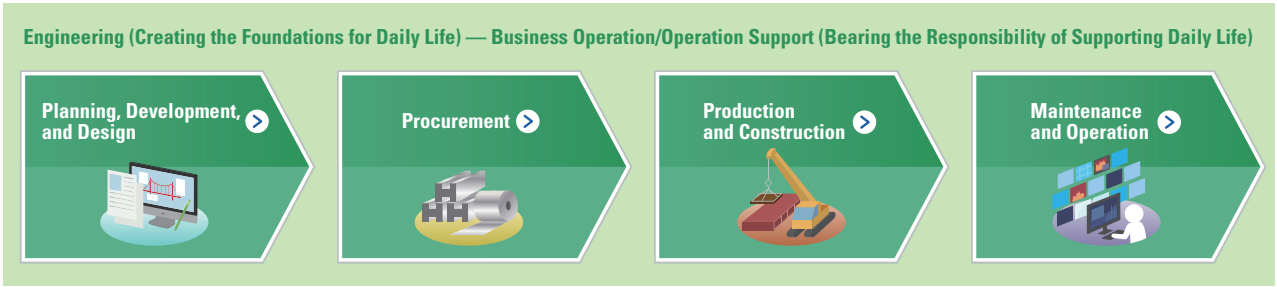
Governance

Challenges in the Value Chain	Procurement		Manufacturing, Production, and Shipping	Sales and Usage	Collecting Steel Scrap
	Raw Material Iron Ore/Coal	Machinery			
Compliance					
In expanding our businesses in and outside of Japan, it is important that JFE 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. It is therefore extremely important to conduct training on corruption prevention and other compliance training, so that all members of the organization can deepen their knowledge and awareness of compliance and perform their jobs accordingly.					
Risks - Legal risks such as violations of antitrust law or competition law	●	●		●	
Key Initiatives ➤ Compliance (P.189) **Related Pages** ➤ Supply Chain Management (P.46) ➤ Governance Data (P.226)					
Information Security					
The JFE Group formulates various rules on information security management to prevent information leakage and system failure due to cyber-attack or improper system use and continually raise the level of its information security management.					
Risks - Cyber security risks	●	●	●	●	●
Key Initiatives ➤ Risk Management (P.193) **Related Pages** ➤ Governance Data (P.226) ➤ DX REPORT (https://www.jfe-holdings.co.jp/en/investor/library/dxreport/index.html)					

Engineering Business



Overview of the Value Chain



Engineering (Creating the Foundations for Daily Life)

The JFE Group has built many high-functioning, high-quality facilities in fields such as energy, the environment, and bridges while satisfying the needs of our customers every step of the way, from design to delivery. We have combined and evolved the technologies for processing and assembling in shipbuilding business and technologies relating to materials and combustion in the steel business to create next-generation energy and to address environmental issues. Many of our technologies support society. In addition, we are assembling our resources to develop new business models and new technologies based on existing technologies. We produce high-quality products at low cost by establishing production sites, including one of the largest steel structure production factories in Japan, overseas bases centered on Asian countries, and global engineering structures.

Business Operation/Operation Support (Bearing the Responsibility of Supporting Daily Life)

The JFE Group engages in many private-public initiatives in the field of public services by applying the operational and maintenance know-how acquired over many years, primarily with regard to the environment and water and sewage plants. Furthermore, we build plants, engage in the recycling business and renewable energy business, and take the initiative to realize a recycling-oriented sustainable society. Going forward, we intend to expand our initiatives even further.

Environment

Challenges in the Value Chain	Planning, Development, and Design	Procurement	Production and Construction	Maintenance and Operations
Climate Change				
The JFE Group strives to reduce CO_2 emissions in society through its eco-friendly products and technologies, including renewable energy technologies and energy-saving products in its engineering business. The Group designates climate change issue as a material issue of corporate management and is tackling the challenge to solve this issue.				
Opportunities - Increased need for renewable energy solutions - Increased demand for CCU/CCS facilities - More sophisticated needs in the energy-environment area - Increased response to climate change related disasters (disaster prevention and mitigation, disaster waste processing) - Increased demand for food waste power generation	●	●	●	●
Risks - Disruptions to the supply chain caused by climate change-related disasters, natural disasters such as earthquakes - Effects of meteorological disasters - Risk of floods associated with rising sea levels - Tighter environmental regulations	●	●	●	●
Key Initiatives ➤ Climate Change (P.55) **Related Pages** ➤ Supply Chain Management (P.46) ➤ Development and Provision of Eco-friendly Processes and Products (P.94) ➤ Scenario Analysis in Line with the TCFD Recommendations (P.77) ➤ Environmental Data (P.198)				
Development and Provision of Eco-friendly Processes and Products				
Under its corporate philosophy of contributing to society with the world's most innovative technology, the JFE Group will contribute to meeting social challenges related to reducing environmental impact through business operations that focus on the environment and recycling fields as growth sectors.				
Opportunities - Need for improving operational efficiency and reducing environmental impact - Need for cost reduction and energy saving	●		●	●
Key Initiatives ➤ Development and Provision of Eco-friendly Processes and Products (P.94)				

Challenges in the Value Chain	Planning, Development, and Design	Procurement	Production and Construction	Maintenance and Operations
Efficient Use of Resources				
Given that issues such as resource depletion and environmental pollution are expected to intensify on a global scale, our resource recycling solutions include operating our own waste recycling and energy supply businesses, in addition to constructing and providing plants for waste incineration and sludge digestion to customers.				
Opportunities - Increased demand for plastic recycling - Increased demand for food waste power generation	●	●	●	●
Risks - Shortage of disposal sites for waste generated - Prevention of resource depletion		●	●	●
Key Initiatives ➤ Efficient Use of Resources (P.113) **Related Pages** ➤ Development and Provision of Eco-friendly Processes and Products (P.94) ➤ Environmental Data (P.198)				
Water Security				
We provide total management of water and sewage systems, including maintenance and operations, to secure vital lifelines and are thereby contributing to reducing the negative impact on the water environment.				
Opportunities - Need for improving operational efficiency and reducing environmental impact				●
Risks - Risk of drought in the water intake area, risk of pollution in the discharge area - Violation of environmental regulations and laws		●	●	●
Key Initiatives ➤ Water Security (P.117) **Related Pages** ➤ Development and Provision of Eco-friendly Processes and Products (P.94) ➤ Environmental Data (P.198)				

Challenges in the Value Chain	Planning, Development, and Design	Procurement	Production and Construction	Maintenance and Operations
Prevention of Pollution				
Controlling air pollutant emissions and aggressively investing in environmental preservation are key for achieving co-existence and mutual prosperity with local communities, the global environment, and society at large, as well as for ensuring business continuity.				
Opportunities - Need for improving operational efficiency and reducing environmental impact				●
Risks - Increased environmental impact - Violation of environmental regulations and laws - Environmental accidents - Pollution of the environment	●	●	●	●

Key Initiatives

➤ Prevention of Pollution (P.120)

Related Pages

➤ Development and Provision of Eco-friendly Processes and Products (P.94) ➤ Environmental Data (P.198)

Social

Challenges in the Value Chain	Planning, Development, and Design	Procurement	Production and Construction	Maintenance and Operations
Responsibility to Customers				
The JFE Group has developed a global engineering system encompassing one of the largest steel structure production factories in Japan, overseas bases centered on Asian countries, and global engineering structures. We intend to maximize customer satisfaction by complying with the Group-wide quality policy, providing high-quality products and services, and reinforcing our after-sales service system.				
Opportunities - Expansion of CSR procurement and development of structure for stable procurement - Implement requested functions - Need for cost reduction and energy saving - Expand the business scale through privatization of public services	●	●	●	●
Risks - Lose credibility with customers due to issues related to production and quality	●			●
Key Initiatives ➤ Responsibility to Customers (Provide Quality Products and Enhance Customer Satisfaction) (P.131) **Related Pages** ➤ Social Data (P.220)				
Occupational 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.				
Opportunities - Maximize human capital through physical and mental health	●	●	●	●
Risks - Occurrence of accidents, including occupational injuries - Disruptions to the supply chain caused by COVID-19	●	●	●	●
Key Initiatives ➤ Occupational Health and Safety (P.138) **Related Pages** ➤ Supply Chain Management (P.46) ➤ Social Data (P.220)				

Challenges in the Value Chain	Planning, Development, and Design	Procurement	Production and Construction	Maintenance and Operations
Labor Standards				
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.				
Opportunities - Saving labor through new technology - Need for remote monitoring and automation due to a lack of human resources			●	●
Risks - Labor shortage - Labor risks - Culture of passing down technical skills is dying out	●	●	●	●
Key Initiatives ➤ Labor Standards (Recruit and Nurture Diverse Human Resources) (P.148) **Related Pages** ➤ Social Data (P.220)				
Human Rights				
The JFE Group views respect for human rights as both a corporate social responsibility and a foundation of its business. Our determination to not engage in discrimination in our business activities is clearly expressed in our Standards of Business Conduct, which we have upheld throughout our actions. And we pursue Group-wide initiatives based on the United Nations Guiding Principles on Business and Human Rights.				
Risks - Potential human rights risks	●	●	●	●
Key Initiatives ➤ Human Rights (P.160) **Related Pages** ➤ Supply Chain Management (P.46) ➤ Social Data (P.220)				

Governance

Challenges in the Value Chain	Planning, Development, and Design	Procurement	Production and Construction	Maintenance and Operations
Compliance				
In expanding our businesses in and outside of Japan, it is important that JFE 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. It is therefore extremely important to conduct training on corruption prevention and other compliance training, so that all members of the organization can deepen their knowledge and awareness of compliance and perform their jobs accordingly.				
Risks - Legal risks such as violations of antitrust law or competition law		●		●
Key Initiatives ➤ Compliance (P.189) **Related Pages** ➤ Supply Chain Management (P.46) ➤ Governance Data (P.226)				
Information Security				
The JFE Group formulates various rules on information security management to prevent information leakage and system failure due to cyber-attack or improper system use and continually raise the level of its information security management.				
Risks - Cyber security risks	●	●	●	●
Key Initiatives ➤ Risk Management (P.193) **Related Pages** ➤ Governance Data (P.226) ➤ DX REPORT (https://www.jfe-holdings.co.jp/en/investor/library/dxreport/index.html)				

Supply Chain Management

Basic Policy

Through the adoption of the Sustainable Development Goals (SDGs) and the Paris Agreement, the international community has called on companies to actively engage in actions to resolve global issues toward realizing a sustainable society. Existing harmoniously with the global environment, respecting human rights, and providing challenging work environments are some of the JFE Group's commitments in the JFE Standards of Business Conduct and the Group promotes initiatives under these standards. In order to realize a sustainable society, we believe it is important to address these challenges within the Group itself as well as across the entire supply chain. We will continue to push forward with our initiatives supported by the understanding of our suppliers and other business partners.

Promoting Green Procurement

The 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.

Procurement Policy and Initiatives by Each Business

JFE Steel

Basic Procurement Policy

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.

JFE Steel's basic purchasing and procurement policies are summarized below.

➤ **Materials & Machinery Purchasing Policy** (https://www.jfe-steel.co.jp/en/company/purchase_policy.html)

As for material procurement, the company has established the Raw Material Purchasing Policy to develop and operate a sustainable procurement system for sourcing raw materials. Through the system, JFE Steel pays due consideration to human rights, including the prohibition of child labor and forced labor, as well as legal compliance and environmental protection. In addition, the company purchases raw materials after confirming that suppliers are not using conflict minerals.

JFE Steel's Raw Material Purchasing Policy is summarized below.

➤ **Raw Material Purchasing Policy** (https://www.jfe-steel.co.jp/en/company/purchase_policy.html#purchase_policy)

Requesting Suppliers to Promote CSR

JFE Steel believes that its social responsibility is to raise stakeholder satisfaction and enhance its corporate value. To that end, the company prioritizes efforts in areas such as environmental protection, safety, disaster prevention, and compliance, which are fundamental to its survival, and requests its suppliers to pursue their own CSR initiatives.

JFE Steel's CSR Procurement Guidelines are summarized below.

➤ **CSR Procurement Guidelines** (https://www.jfe-steel.co.jp/en/company/purchase_policy.html#to-our-business-partners)

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.

JFE Engineering

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 seeks to engage in procurement activities with integrity by complying with guidelines on fair procurement and codes of conduct for building sound and equitable relationships with suppliers and providing training for staff who are responsible for contracts.

The company collaborates with suppliers on CSR initiatives and upholds its Purchasing and Procurement Policies as a standard for fair and transparent procurement activities.

JFE Engineering's Purchasing and Procurement Policies are summarized below.

➤ **JFE Engineering Group Procurement Policy** (https://www.jfe-eng.co.jp/en/information/procurement_policy.html)

JFE Engineering requests that suppliers implement the following measures.

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

JFE Shoji

Ensuring a Safe, Fair Supply Chain

Corporate social responsibility (CSR) is a pivotal element in JFE Shoji'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 will also further consider the global environment, human rights, and occupational safety and health in terms of its procurement.

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 by having the intention to achieve "Accordance with Global Environment" and "Improvement of Global Environment" within the corporate activity.

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.

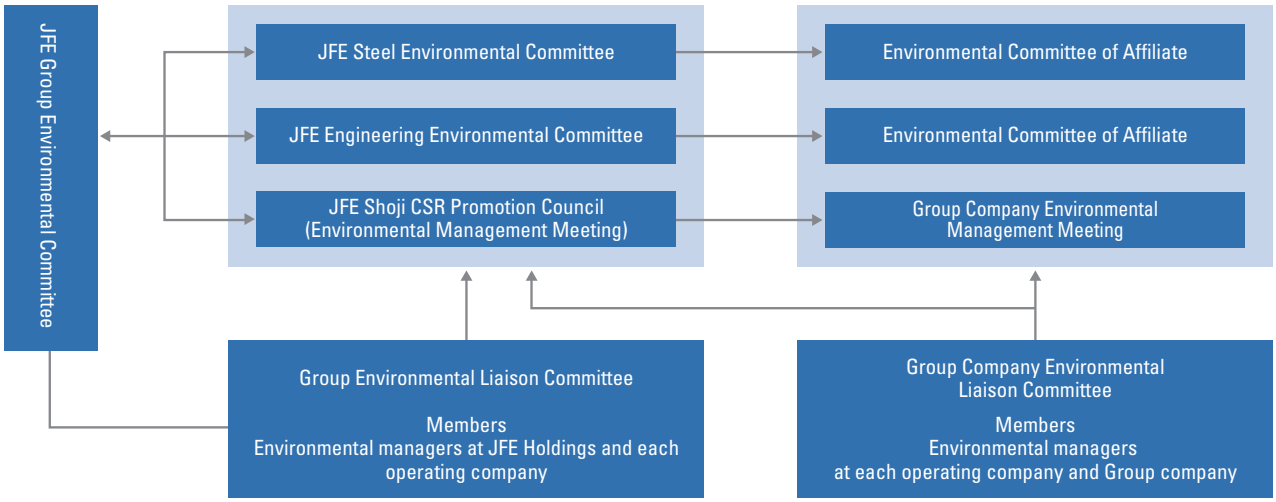
Key issues for corporate management such as climate change are deliberated at the Group Management Strategy Committee as well and reported to the Board of Directors. The board oversees environmental challenges by discussing the reported material. Additionally, specialized committees set up by JFE Group operating companies and affiliates implement specific activities.

In our Seventh Medium-term Business Plan, which has positioned climate change as a top-priority business issue, we formulated the JFE Group Environmental Vision for 2050 and are vigorously pursuing efforts to achieve carbon neutrality by 2050.

For further details, refer to:

➤ JFE Group CSR System (P.26)
➤ Seventh Medium-term Business Plan (P.12)
➤ JFE Group Environmental Vision for 2050 (P.56)

■ **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 have received the certification, encompassing 70% of 42,091 employees at 81 companies covered in this report and 58% covered for total sites. In FY2020, the number of major violations of environmental law or regulation by Group companies that resulted in a fine was 0, and the total amount of fines and penalties was 0 yen.

JFE Steel

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.

JFE Engineering

JFE Engineering maintains an Environment Management Department at each of its major locations, including production sites and branch offices as well as at each of the divisions in charge of products. The Environmental Committee, chaired by the president, oversees environmental management for the entire company. Under its Environmental Management System, JFE Engineering works to minimize environmental impact at production sites, branch offices and construction sites and contribute to environmental protection through all products and services. The major strategies for FY2021 are (1) promote environmental contribution through products for mitigating global warming and climate change, (2) promote effective energy conservation and resource recycling, and (3) prevent violations of the Waste Management and Public Cleansing Law.

JFE Shoji

JFE Shoji obtained ISO 14001 certification for its head office, Osaka branch, and Nagoya branch in 2000 and later expanded the scope of certification to all domestic offices. JFE Shoji also applies the same environmental management system to domestic Group companies, promoting the same environment management activities and striving for the same certification. Overseas coil centers are also planning to acquire ISO 14001 certification.

For quantitative data related to ISO 14001 for each business, please refer to the following information.

➤ Environmental Data (P.198)

Environmental Audit

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.

JFE Steel

Once a year, JFE Steel's Audit Department and the Environment, Disaster Prevention and Recycling Department conduct an environmental audit at each operational site. JFE Steel categorizes Group companies based on the result of risk assessment considering owned equipment and conducts detailed audits every one to five years using checklists.

Environmental audit at a domestic Group company

JFE Engineering

JFE Engineering places a top priority on complying with environmental laws and regulations.

To verify compliance with these regulations, environmental inspections are conducted at all construction sites by the department responsible for construction, and the Tsurumi and Tsu manufacturing sites conduct self-checks on an annual basis to confirm legal compliance. In addition, about 50 locations, selected from among the manufacturing sites, construction sites in Japan, and group company sites, are audited each year by the Safety and Environment Department to confirm compliance with environmental laws and regulations. JFE Engineering also conducts internal audits on its own environment management system to evaluate and enhance the effectiveness of various environment-related initiatives.

JFE Shoji

At JFE Shoji, the ISO Environmental Audit Department annually confirms that processing centers and warehouses of ISO 14001-certified Group companies comply with relevant environmental laws and regulations. For non-certified Group companies, the department conducts an environmental audit every three years.

For quantitative data related to environmental audits, please refer to the following information.

➤ Environmental Data (P.198)

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.

JFE Steel

JFE Steel encourages employees to obtain qualifications as pollution-control managers. A training program for environmental managers at group companies was launched in FY2011. In addition, JFE Steel provides employees with training to ensure compliance with environmental laws, disseminates information about regulatory revisions at its Environmental Liaison Committee meetings for Group companies, and organizes brush-up training in waste management skills for onsite personnel.

JFE Engineering

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 FY2020, JFE Engineering worked on expanding its remote training opportunities.

JFE Shoji

JFE Shoji provides all employees with general environmental training in compliance with ISO 14001 and specialized training for internal audit staff on an annual basis. All employees within the scope of certification receive a pocket-size ISO Employee Card to carry with them so they can check the details of ISO 14001 activities at any time. 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 provides environmental training to new executives and information about revised laws and regulations to environmental management personnel.

For quantitative data related to environmental education, please refer to the following information.

➤ Environmental Data (P.198)

Environmental Accounting

Basic Policy

The JFE Group is saving energy and reducing its environmental impacts by making its production facilities increasingly efficient and introducing more environmentally friendly equipment. Any equipment or facilities related to energy conservation and environmental protection are categorized as environmental investment, while all activities related to environmental protection and impact reduction are categorized as environmental expenses.

Environmental Investment and Expenses

Environmental capital investment totaled 29.7 billion yen and expenses amounted to 104 billion yen in FY2020. Capital investment included 14.4 billion yen for measures to prevent global warming (measures to address climate change), 5.3 billion yen for air pollution countermeasures, and 4.7 billion yen for water pollution prevention. Environmental capital investment as a percentage of overall capital investment was roughly 25%.

Environmental expenses for environmental activities included 32.9 billion yen for air pollution countermeasures, 25.2 billion yen for global warming countermeasures (measures to address climate change) and 16.9 billion yen for industrial water recycling. Environmental R&D expenses came to 8.3 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 546.5 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 742.1 billion yen in environmental protection since 1973.

Results of Environmental Activities

Through these environmental investments and expenses, we are working to lower unit-based CO_2 emission to prevent global warming and to reduce final-disposal waste by maintaining a high recycling rate to effectively use natural resources. We are also striving to reduce emissions of pollutants into the water and air, which contributes to environmental protection and ensures thorough compliance with statutory regulations concerning exhaust gas emissions and discharged water.

The monetary value of energy savings realized through environmental capital investments and expenses in FY2021 is about 0.9 billion yen.

■ Breakdown of Environmental Costs

Main Items		FY2020	
		Investment (billion yen)	Cost (billion yen)
Management	Impact monitoring and measurement, and EMS expenses and education	1.4	2.6
Global warming countermeasures	Saving and efficiently using energy	14.4	25.2
Conservation of natural resources	Recycling industrial water	2.4	16.9
	Recycling and waste management of internally generated materials, etc.	0.6	4.8
Environmental protection	Air pollution countermeasures	5.3	32.9
	Water pollution countermeasures	4.7	10.6
	Prevention of soil contamination, noise, vibration, and subsidence	0	0.6
Other	Charges, etc.	—	1.6
R&D	Technologies for protecting the environment, saving energy, and preventing global warming	0.8	8.3
Societal activities	Support for nature preservation and forestation, information disclosure, exhibitions, and public relations	—	0.6
Total		29.7	104.0

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

For quantitative data related to environmental accounting, please refer to the following information.

➤ Environmental Data (P.198)

Related Links

➤ Material Flow (P.198)
➤ JFE Steel: Environmental Initiatives (Japanese only) (https://www.jfe-steel.co.jp/research/environment.html)
➤ JFE Engineering: 360° JFE Engineering "Protecting Natural Environments" (https://www.jfe-eng.co.jp/en/360_jfe_engineering/#env)
➤ JFE Shoji: Environment Management (https://www.jfe-shoji.co.jp/en/csr/environment/)

Climate Change

Basic Policy

Climate change is an extremely important business concern for the JFE Group from the perspective of business continuity. Our steel business, which emits 99.9% of the Group's total CO_2 emissions, has been developing various technologies for saving energy and reducing these emissions. Applying these technologies to steel manufacturing has successfully reduced CO_2 emission intensity to the lowest level worldwide.

Furthermore, we have developed and maintained a variety of eco-friendly products and technologies, including high-performance steel materials that help save energy when customers use them, as well as renewable energy power generation.

We will continue to develop and promote the widespread use of these processes and products while at the same time seeking to turn this challenge into an opportunity to tackle climate change by deploying the technologies we have fostered across the globe.

JFE announced its endorsement for the TCFD recommendations in May 2019 and has identified climate change-related issues based on the scenario analysis advocated in the TCFD to formulate strategies for sustainable growth. In September 2020, JFE disclosed its target of reducing CO_2 emissions in FY2030 in the steel business, which accounts for most of the Group's CO_2 emissions. It also announced its intention to achieve carbon neutrality by 2050, ahead of the Japanese government's announcement of the same goal.

In February 2022, the target of reducing CO_2 emissions in FY2030 was revised upward to 30% or more compared to FY2013 considering advances in measures for carbon neutrality and improvement of external surroundings in the steel sector.

JFE Group Environmental Vision for 2050

The JFE Group intends to increase sustainability through solutions that address global climate change issues while restructuring its business to respond to the changes in the environment surrounding the steel business. We regard 2020 to be the landmark year to further reinforce our efforts to tackle climate change, and we are actively promoting initiatives for reducing CO_2 emissions.

In 2021, having positioned climate change as a top-priority issue in the Seventh Medium-term Business Plan, we formulated the JFE Group Environmental Vision for 2050 toward achieving carbon neutrality by that year.

We will systematically address climate change by reflecting the TCFD's principles in our business strategies in the JFE Group Environmental Vision for 2050. In the steel business, we will reduce CO_2 emissions by 18% from FY2013 levels by the end of FY2024. In addition, we announced that the target of reducing CO_2 emissions in FY2030 is 30% or more compared to FY2013 in steel business. To explore all possibilities for realizing carbon neutrality in 2050, we will take on the challenge of developing super-innovative technologies such as carbon-recycling blast furnaces developed with our unique techonology while also adopting a multitrack approach for pursuing other technologies. In our engineering business, we will widen our contribution to the reduction of CO_2 in society as a whole by expanding and advancing renewable power generation and carbon recycling technologies, by supplying high-performance steel products, and through other initiatives. Furthermore, we will accelerate commercialization of our offshore wind-power business by applying the strengths of the Group.

JFE Group Environmental Vision for 2050

- **Climate change is an extremely important business concern for JFE, and we are aiming to achieve carbon neutral by 2050.**
- **We will accelerate our research and development of new technologies and pursue super-innovative technologies.**
- **We will seek business opportunities that allow us to enhance our corporate value by contributing to CO_2 emissions reduction across society.**
- **The principles of TCFD will be reflected in our business strategies and deployed in a systematic manner.**

Seventh Medium-term Business Plan Initiatives

▶ **Reduce steel-business CO_2 emissions in FY2024 by 18% compared to FY2013 (JFE Steel).**

The target of reducing CO_2 emissions in FY2030

▶ **Reduce steel-business CO_2 emissions in FY 2030 by 30% or more compared to FY 2013 (JFE Steel).**

Initiatives for Carbon Neutrality by 2050

(1) Reduce CO_2 emissions at JFE Steel

▶ **Pursue super-innovative technology for carbon-recycling blast furnaces and CCU.**

▶ **Develop hydrogen-based ironmaking (direct reduction) technology.**

▶ Leverage top-in-class electric arc furnace technology for high-grade steel manufacturing, high efficiency, etc.

▶ Develop transitional technologies for carbon neutrality, including ferro coke, increased use of steel scrap in converters, energy savings, and low-carbon energy transformations.

(2) Expand contributions to CO_2 emissions reduction in society

▶ JFE Engineering: Expand and develop renewable-energy power generation and carbon-recycling technologies.
Reduce CO_2 emissions by 12 million tonnes in FY2024 and 25 million tonnes in FY2030.

▶ JFE Steel: Develop and market eco-products and eco-solutions.

▶ JFE Shoji: Increase trading in biomass fuels, steel scrap, etc., and strengthen business in supply chain management (SCM) for eco products.

(3) Offshore wind-power generation business

▶ **Accelerate commercialization of the offshore wind-power business by applying the strengths of the Group.**
JFE Engineering: Manufacture and market monopiles and other seabed-fixed structures for offshore wind-power generation.
JFE Steel: Use the new continuous casting machine in Kurashiki to produce large heavy plates.
JFE Shoji: Carry out SCM for steel materials and processed products.
Japan Marine United Corporation: Manufacture offshore wind power-generation floating structures and construct work vessels.
Group-wide: Operation and maintenance (O&M) making maximum use of Group resources.

Notes.
1. Carbon-recycling blast furnace: A technology that converts CO_2 from the blast furnace into methane and repeatedly uses it as reducing material in the blast furnace
2. CCU: Carbon dioxide capture and utilization
3. Transitional technologies: Technologies that advance the transition to low carbon and decarbonization
4. Ferro coke: Innovative blast furnace raw material that improves the reduction efficiency of iron ore and reduces CO_2 generation

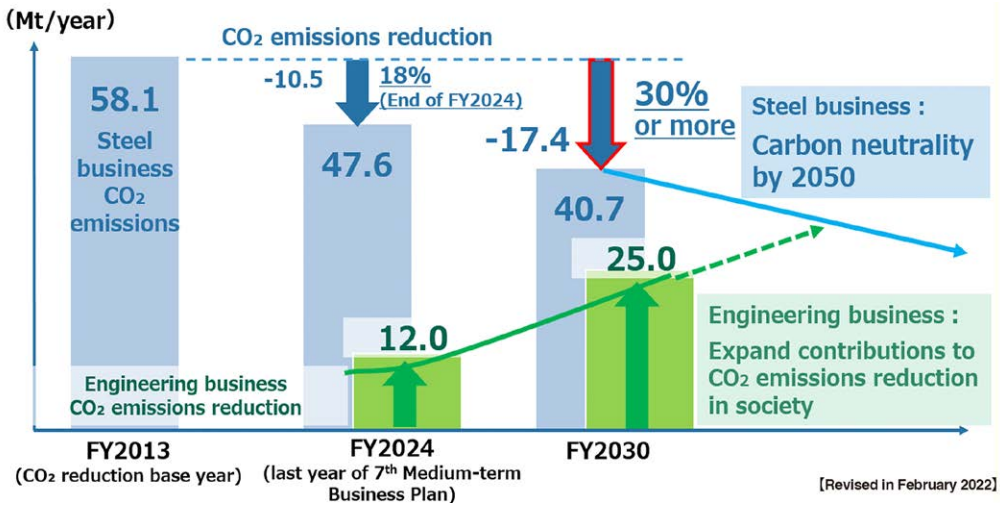
➤ Seventh Medium-term Business Plan (P.12)

➤ JFE Group Environmental Vision for 2050, Presentation Material
(https://www.jfe-holdings.co.jp/en/investor/zaimu/g-data/2020/May2021-210525-release01.pdf)

Developing processes to mass produce high-performance steel with zero CO_2 emissions is essential for a sustainable world. Huge R&D and equipment replacement costs will be inevitable as JFE executes strategies targeting carbon neutrality. Society must decide how these costs should be shouldered, including government support.
Working toward the lofty goal of carbon neutrality by 2050,

JFE aims to establish the necessary decarbonization technologies as soon as possible, ahead of global competitors, assuming that we have the decarbonization infrastructure in place and ability to compete on an equal footing globally.

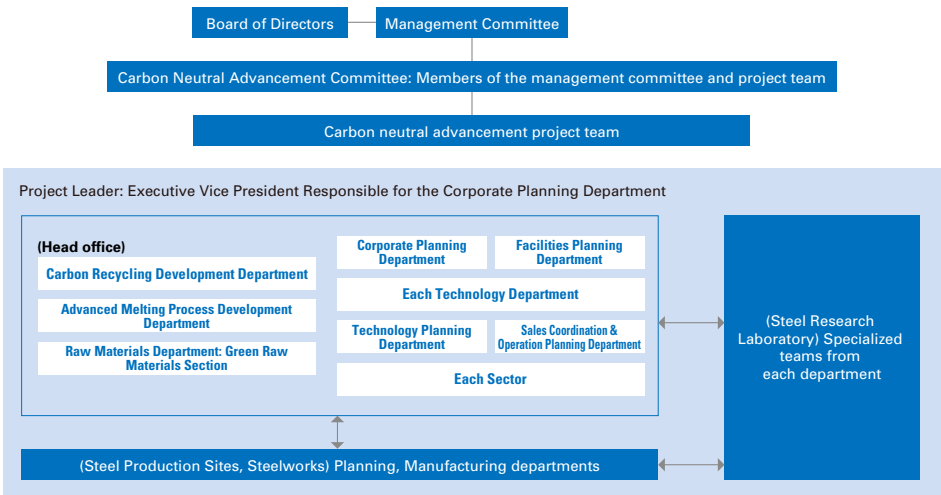
■ JFE Group's Activities for Carbon Neutrality



JFE Steel's Management Structure to Promote Carbon Neutrality

In October 2020, JFE Steel established a company-wide project team that directly reports to the president to promote the development and commercialization of ultra-innovative technologies for achieving carbon neutrality by 2050. In July and October of 2021, the company further enhanced its management structure for promoting carbon neutrality by introducing new specialized departments. This management structure will help the company accelerate its efforts to achieve carbon neutrality.

■ JFE Steel's Management Structure to Promote Carbon Neutrality



Information Disclosure Based on TCFD Recommendations

On May 27, 2019, JFE Holdings announced its endorsement for the final report of the Task Force on Climate-related Financial Disclosures (TCFD)*.

*The TCFD was established by the Financial Stability Board (FSB) at the request of G20 finance ministers and central bank governors.

Climate-related risks and opportunities will significantly impact medium- to long-term corporate finance. To reduce the risk of instability in the financial market, the G20 called on the FSB to establish the TCFD. The TCFD considers disclosure methodologies that can be used to appropriately assess climate-related risks and opportunities and releases its findings as a final recommendations report.

It is important for investors to accurately understand the financial impact of climate-related risks and the opportunities of investee companies when they make financial decisions. In this context, the task force recommends disclosures to be made in four core elements of organizational management: governance, strategy, risk management, and metrics and targets.

For the TCFD content index, click on the following link.

➤ Guideline Content Indices (P.247)

Governance

Under the JFE Group Standards of Business Conduct, the JFE Group actively strives to exist in harmony with the global environment and create a society that is comfortable and convenient. We are aware that efforts to protect the global environment, such as reinforcing our environmental protection activities and addressing climate change issues, are extremely important for creating a sustainable society.

In FY2016, we identified the mitigation of global warming as a material CSR issue to facilitate the PDCA cycle and promote appropriate management of ongoing initiatives, such as reducing CO_2 in the iron and steelmaking processes and developing and providing eco-friendly products. In 2021, we relaunched the initiative as a top priority by adding economic perspectives to the material issues and by selecting other vital matters of importance. As part of this effort, we set our goal for helping to address climate change (initiatives to achieve carbon neutrality by 2050) as an area of focus and identified reducing the JFE Group's CO_2 emissions and contribution to CO_2 emissions reduction in society as two material issues.

The JFE Group Environmental Committee, chaired by the president of JFE Holdings and operating under the JFE Group CSR Council, supervises and guides these initiatives by deliberating goals, monitoring progress, and improving the Group's overall environmental performance.

Key managerial issues such as climate change and other environmental challenges are deliberated at the Group Management Strategy Committee as well and reported to the Board of Directors. The board discusses and makes decisions on the matters reported.

■ Examples of Climate Change-Related Agenda Items Involving Board of Directors Discussions, Decisions, and Reports

- Declaration of endorsement for the final TCFD recommendation report
- Information disclosure consistent with TCFD recommendations (scenario analysis and other information)
- Formulation of the Seventh Medium-term Business Plan, JFE Group Environmental Vision for 2050

➤ **Corporate Governance System** (P.179)
➤ **Framework for Environmental Management** (P.49)

Addressing Climate Change Issues

The JFE Group considers climate change as a top-priority business concern and will vigorously pursue the goal of achieving carbon neutrality by 2050.

The JFE Group recognizes climate change as a vital management issue to overcome in order to achieve sustainable growth and enhance corporate value over the medium to long term. We believe that climate change and its global impact merit urgent consideration, and we have been taking action to reduce our CO_2 footprint.

In the Seventh Medium-term Business Plan (FY2021–FY2024) issued in May 2021, the JFE Group reconfirmed that climate change is a top priority and developed specific measures to address it. In order to achieving carbon neutrality by 2050, we formulated the JFE Group Environmental Vision for 2050, which includes the following three major policies, and entered a new stage of tackling the change.

In accordance with our corporate vision of contributing to society with the world's most innovative technology, we will take on the challenge of developing ultra-innovative technologies to tackle climate change. At present, there is no guaranteed solution for achieving carbon neutrality by 2050, which will require us to develop new ultra-innovative technologies in the steel business. We have presented a roadmap that includes specific measures for achieving carbon neutrality. This roadmap is based on pursuing our unique super-innovative technology, carbon recycling blast furnace with CCU, and also includes the development of other technologies such as hydrogen-based ironmaking and electric arc furnace technology. We will realize these innovative technologies through multiple strategies to ultimately achieve the goal of carbon neutrality.

Next, we will view CO_2 reduction initiatives as both a response to business risks and a new business opportunity for helping to realize a sustainable society. We will also enhance our corporate value by contributing to CO_2 emissions reduction throughout society. By reducing overall CO_2 emissions, we will contribute to the realization of carbon neutrality for society as a whole. In our engineering business, we will expand and develop technologies for renewable energy power generation and carbon recycling. In our steel business, we will work on electrical steel sheets and ultra-high-tensile strength steels to promote the shifts to EVs and lighter weight automobiles. In particular, our offshore wind-power generation business can take full advantage of the capabilities of all our operating companies. We will make a Group-wide effort to accelerate this business.

Lastly, the Group will reflect the principles of the TCFD in its business strategies and systematically address climate change. In May 2019, the Group announced its endorsement for the TCFD recommendations. For the first time, we disclosed information based on the TCFD recommendation in our CSR REPORT 2019 and clarified business risks and opportunities through scenario analysis. This year, we deepened these efforts and formulated the JFE Group Environmental Vision for 2050 as a key strategy in our Seventh Medium-term Business Plan.

A process capable of producing large quantities of high-performance steel without emitting CO_2 is essential for society's sustainable development. We recognize that we must address this issue in order for the JFE Group to survive amid global competition. To achieve the lofty goal of becoming carbon neutral in 2050, we will strive to establish the necessary decarbonization technologies as early as possible, ahead of our global competitors.

Seiya Kitajima
Senior Executive Officer,
JFE Holdings, Inc.

JFE Group's Climate Change Strategy

Various risks and opportunities related to climate change are integrated into the JFE Group's business strategy. The Group formulated the its Seventh Medium-Term Business Plan as the main guide for business operations from fiscal 2021 to fiscal 2024, and we positioned efforts to address climate change as the key to achieving sustainable growth and increased value over the medium to long term. Under the plan, the Group defined ensuring environmental and social stability as a core strategy and formulated the JFE Group Environmental Vision for 2050 for achieving carbon neutrality by 2050. Then we concentrated our efforts on our business strategy and reflected the principles of the TCFD recommendations in our management strategy, enabling us to systematically address climate change. Furthermore, we are disclosing information based on the TCFD recommendations, including the scenario analysis, leveraging them to identify and evaluate risks and opportunities, and reflecting them in our management strategy.

For further details on the Results of Scenario Analysis and the JFE Group Environmental Vision for 2050, refer to the following source material.

➤ **Scenario Analysis recommended by TCFD** (P.77)

➤ **JFE Group Environmental Vision for 2050, Presentation Material**
(https://www.jfe-holdings.co.jp/en/investor/zaimu/g-data/2020/May2021-210525-release01.pdf)

In the JFE Group Environmental Vision for 2050, our efforts to achieve carbon neutrality are based on the following three key strategies: reduce CO_2 emissions at JFE Steel, expand contributions to the reduction for society as a whole, and accelerate Group-wide commercialization of the offshore wind-power business. In the steelmaking process, which has a particularly significant environmental impact, we will focus on reducing CO_2 emissions. In addition, we will emphasize the reuse of water resources and energy as well as the development and provision of environmentally sound products, process technologies, and resource recycling solutions.

Reduce CO_2 Emissions at JFE Steel

Carbon Recycling Blast Furnaces (CR Blast Furnace)

We will work on developing carbon-recycling blast furnaces (CR blast furnaces), hydrogen steelmaking, and electric furnaces, and we will also strive to achieve carbon neutrality by 2050, as announced in the JFE Group Environmental Vision for 2050. We are particularly focused on a technology that combines a CR blast furnace and CCU*, which allows us to efficiently mass produce high-grade steel and reuse the CO_2 in the blast furnace. This technology aims for virtually zero emissions by using the remaining CO_2, which cannot be fully reused to manufacture basic chemicals such as methanol.

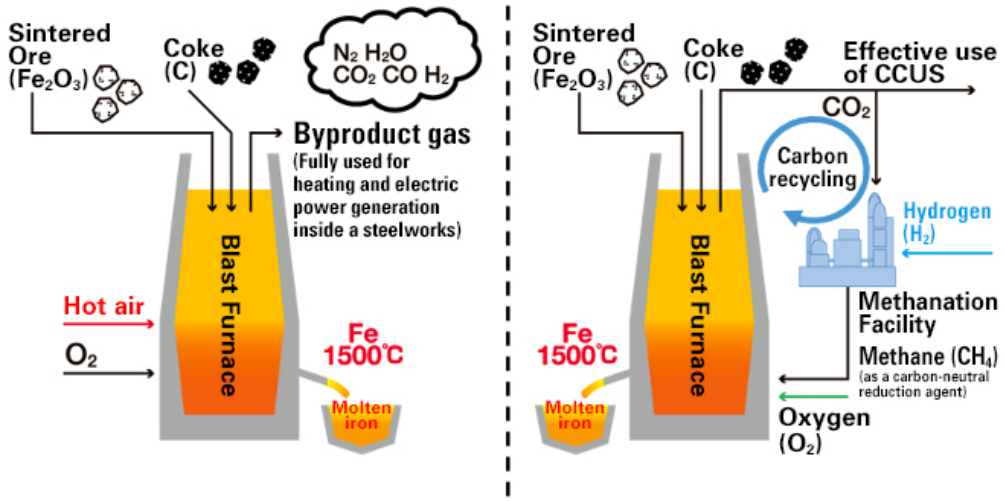
*Carbon dioxide capture and utilization

Technical Features of a CR Blast Furnace

The CR blast furnace is ultra-innovative in terms of its technology that converts CO_2 in the furnace exhaust gas into methane (through methanation), which is then used repeatedly as reducing material in the furnace. The technology is expected to reduce CO_2 by 30% in the blast furnace alone and to ultimately help achieve carbon neutrality by leveraging CCU/CCUS*. The thermal efficiency of the process can be further increased by replacing the air blown into the blast furnace with pure oxygen, as the energy used to heat the nitrogen in the air can instead be used to heat methane. In addition, the lack of nitrogen facilitates the separation of CO_2, so the equipment necessary to separate CO_2 for methanation can be smaller and more efficient while facilitating more effective gas utilization at CCUS.

*CCUS: CO_2 capture, utilization, and storage

■ Conceptual Diagram of a Carbon Recycling Blast Furnace



	Conventional Blast Furnace	Carbon-recycling Blast Furnace
Capacity	4MT/BF-year	4MT/BF-year (on par with conventional BF)
Reducing agent	Coke + pulverized coal	Coke + recycled methane (CH_4)
Raw materials	Low-grade raw materials possible	Low-grade raw materials possible
Raw materials	2t-CO_2/1-tonne of pig iron	Target: Zero (CO_2 reduction in BF + CCUS)

Opening the Way to Innovation

Commercializing CR blast furnaces requires the following technological innovations. The JFE Group will take on the challenge of achieving these and also strive to reach carbon neutrality by 2050.

①Technology to reduce CO_2 by blowing a large volume of carbon-neutral methane along with oxygen into the blast furnace (world first)
②Linking the operations of a large-scale methanation facility and a CR blast furnace (world first)

New Technology to Process Raw Materials for Hydrogen Reduction Ironmaking

Hydrogen reduction ironmaking technology is another steelmaking process that the JFE Group is working on to achieve carbon neutrality. With this technology, the natural gas currently used in direct reduction ironmaking is replaced by 100% hydrogen to eliminate CO_2 emissions when iron ore is reduced.

Technology for Processing Raw Materials

Currently, the only raw material that can be used for direct reduction ironmaking is high-grade iron ore. Its production volume, however, is limited, and we expect it will become even more difficult to obtain in the future if direct reduction ironmaking were to expand worldwide.

To address this, JFE and one of its iron ore suppliers, BHP, are collaborating in the development of a new raw material processing technology for low- and medium-grade ores, which are currently used as raw materials for blast furnaces due to their large production volume. We are hoping that this new technology will allow us to use low- and medium-grade ores as raw materials for direct reduction ironmaking, thus expanding the raw material sourcing for direct reduction ironmaking.

Technology for Pre-Heating Raw Materials, Technology for Heating Hydrogen Gas

One challenge of hydrogen reduction is that the reduction of iron ore by hydrogen is an endothermic reaction, which means that heat must be applied externally for the reaction to proceed. A sufficient reduction reaction may not take place if there is not enough heat. Thus, technologies for heating raw materials and hydrogen gas must be developed.

Development of Electric Arc Furnace Process Technology

One of the JFE Group's development efforts in steelmaking technologies for carbon neutrality is electric arc furnace process technology. With the technology, steel products are manufactured by melting steel scrap and direct-reduced iron in an electric furnace. So far, we have managed to reduce CO_2 emissions from this steelmaking process down to one-quarter of that of the blast furnace-converter method. We are working to eliminate CO_2 emissions generated by the electric furnace process in the future by using the aforementioned hydrogen-reduced iron as the raw material and green electricity.

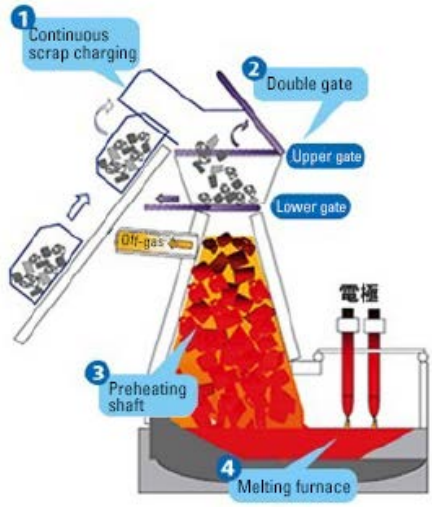
Although the electric furnace process has this advantage of reducing CO_2 emissions, there are two major problems with it compared to the blast furnace-converter method: the productivity of the electric furnace process in general is about 30% lower than that of the blast furnace-converter method, and the use of scrap as the raw material inevitably increases the concentration of impurities, which limits the production of high-grade steel. We are working to address these issues and striving to establish technologies that will enable the production of high-quality, high-grade steel with high productivity in the electric furnace process.

Improve productivity of the electric arc furnace process

To improve productivity of the electric arc furnace process, the JFE Group have developed ECOARC™, our proprietary, eco-friendly, high-efficiency electric arc furnace, and installed it at our operating companies. With this technology, a shaft is attached to the upper part of the electric furnace and is used to continuously feed scrap materials into the furnace. It uses the high-temperature exhaust gas from the furnace to preheat the scrap material, allowing for subsequent high-efficiency and high-speed melting. As well as improving the productivity of the electric arc furnaces, the technology also reduces the energy (electricity) required for the melting process.

The Group already has achieved industry-leading productivity and energy (electricity) efficiency with these technologies, but we are working to raise productivity even further.

■ **Eco-friendly, high-efficiency electric arc furnace ECOARC™**



Manufacturing Higher-Grade Steels Using the Electric Arc Furnace Process

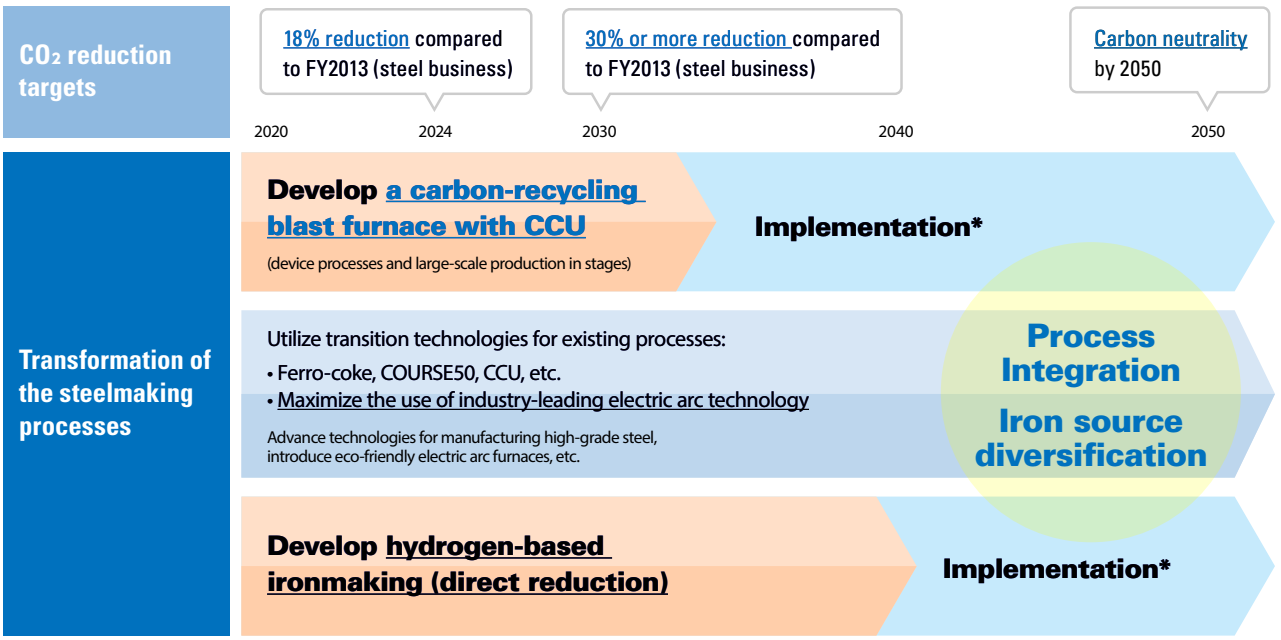
The electric arc furnace process uses scrap and reduced iron as raw materials. The higher concentration of impurities in these materials, such as copper, causes material degradation, including surface defects and reduced workability in steel sheets and deterioration of properties in electrical steel sheets. We are working on two technologies to address the issue, one to remove impurities and another to detoxify impurities, so that we can use the electric arc furnace process to produce high-grade steel products such as steel sheets for automobiles and electrical steel sheets.

■ **Related Products and Technologies**

Reduce CO_2 emissions at JFE Steel		
Carbon Neutral	Management Structure	Management Structure to Promote Carbon Neutrality (Japanese only) (https://www.jfe-steel.co.jp/release/2021/09/210922.html)
Carbon-recycling blast furnace	Carbon-recycling blast furnace technology	JFE Group Environmental Vision for 2050 "Carbon-recycling Blast Furnace Technology Development" (https://www.jfe-holdings.co.jp/en/investor/zaimu/g-data/2020/May2021-210525-release01.pdf)
		Challenge Zero (Challenge for development of super-innovative technologies focusing on "Carbon-recycling Blast Furnace + CCU) (https://www.challenge-zero.jp/en/member/34)
	CCU/CCUS	Challenge Zero (Technology of CO_2 utilization) (https://www.challenge-zero.jp/en/casestudy/391)
New technology to process raw materials for hydrogen reduction ironmaking	Development of technology for direct hydrogen reduction	JFE Group Environmental Vision for 2050 (Development of Technology for 100% Direct Hydrogen Reduction) (https://www.jfe-holdings.co.jp/en/investor/zaimu/g-data/2020/May2021-210525-release01.pdf)
	Collaboration with a material supplier	JFE Steels and BHP to Address Decarbonization in Steelmaking Process (https://www.jfe-steel.co.jp/en/release/2021/210210.html)

■ Roadmap to Carbon Neutrality in 2050

- Accelerate research and development for the early establishment of new technologies
- Adopt a multitrack approach to develop super - innovative technologies, focusing on carbon recycling blast furnace + CCU and hydrogen ironmaking (direct reduction)
- Maximize the use of industry - leading electric arc furnace technology



*As prerequisites for implementation, the necessary social infrastructure is in place, including the supply of hydrogen at low cost and in large quantities, the mechanism for cost sharing across society, etc.

➤ Seventh Medium-term Business Plan (P.12)

➤ JFE Group Environmental Vision for 2050, Presentation Material

(https://www.jfe-holdings.co.jp/en/investor/zaimu/g-data/2020/May2021-210525-release01.pdf)

Expand Contributions to CO_2 Emissions Reduction in Society

Contribution to CO_2 Reduction through our Engineering Business

Demand for power generation plants using renewable energy sources that do not emit carbon is expected to increase. Through JFE Engineering, the JFE Group is handling the design, procurement, construction, and operation of various renewable energy generation plants including biomass, geothermal, solar, and onshore wind power. We are also working to increase the amount of power generated at waste treatment facilities in order to promote recycling and the effective use of resources.

Furthermore, we are actively engaged in the retailing of electricity, which uses these renewable energies as the main power source, as well as in supporting the establishment and operation of new regional electricity companies that focus on local production and local consumption of energy using renewable energies.

As a new initiative toward carbon neutrality, we are developing CCU technology that uses exhaust gas and waste plastic, for which we have already established the necessary technologies to collect, separate, and produce synthesis gas ($CO + H_2$) and use it as a raw material for manufacturing chemicals.

Through these efforts, we will contribute to reducing CO_2 emissions in society by 12 million tonnes by FY2024 and 25 million tonnes by FY2030.

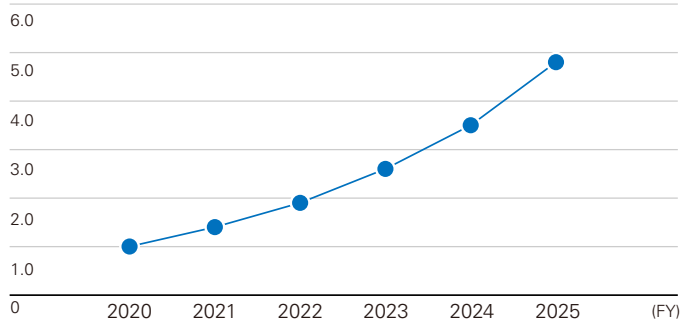
Electrical Steel Sheets

Electrical steel sheets are widely used as core materials for electrical equipment such as motors and transformers and therefore play an important role in determining the performance of such electrical equipment. JFE Steel is contributing to reducing CO_2 emissions on a global scale by supplying high-performance electrical steel sheets.

Non-Oriented Electrical Steel Sheets

Demand for high-grade non-oriented electrical steel sheets, indispensable for electric automobiles, is expected to rapidly increase as global environmental regulations are accelerated/strengthened. In response to this demand, we have decided to invest approximately 49 billion yen to double the production capacity of high-grade non-oriented electrical steel sheets at the West Japan Works (Kurashiki district) in the first half of FY2024.

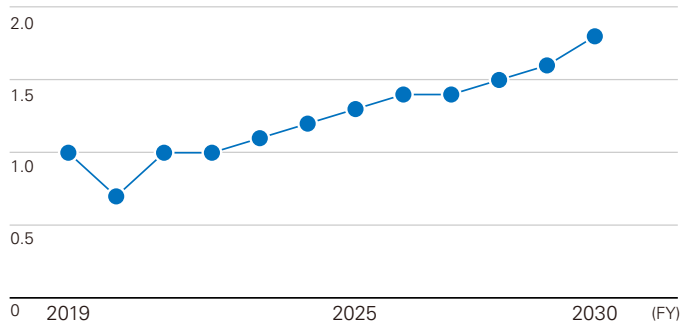
■ Demand for Non-Oriented Electrical Steel Sheets (Calculated by JFE; 2019 results = 1.0)



Grain-Oriented Electrical Steel Sheets

The global demand for grain-oriented electrical steel sheets in transformers is expected to increase due to continuous growing demand for electric power and the expanding adoption of renewable energy. Demand in India for grain-oriented electrical steel sheets is expected to increase by 1.7 times in 2030 compared to 2019. Moreover, we have agreed with our strategic-alliance-partner JSW to study the feasibility of establishing a joint, grain-oriented steel (G/O) manufacturing and sales company in India.

■ Demand for Grain-Oriented Electrical Steel Sheets in India (Calculated by JFE; 2019 results = 1.0)



Super Core

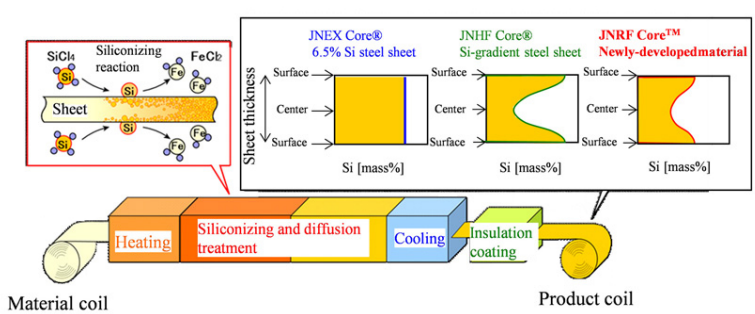
In recent years, motors are becoming increasingly smaller and faster (for driving electric vehicles, home appliances, drones, etc.), and they are requiring higher output and efficiency. For electrical steel sheets, used as iron core materials for these products, there is growing demand to reduce high-frequency iron loss*1 and increase magnetic flux density*2. Silicon boosts the electrical resistance of steel, so increasing the amount silicon helps to achieve this is necessary. Using the proprietary technology for CVD continuous siliconizing*3, we worked to control silicon concentration distribution by optimizing the siliconizing amount and diffusion conditions and to control crystal orientation. These efforts have resulted in the development of a JNRF™ silicon-gradient steel sheet for high-speed motors. JNRF™ helps to significantly increase motor efficiency for energy conservation while maintaining magnetic flux density (torque) equivalent to that of conventional non-oriented electrical steel sheets (3% silicon steel sheets).

*1 Iron loss refers to energy, mainly heat, lost when an iron core is excited by an alternating current. The energy loss that occurs when the iron core is excited at high frequency is called a high-frequency iron loss. The efficiency of high-speed motors increases as high-frequency iron loss is reduced.

*2 Magnetic flux density, which indicates a material's ease of magnetization, raises electromagnetic strength as density increases. In motors, larger torque (power) can be achieved with materials that offer high magnetic flux density.

*3 The chemical vapor deposition (CVD) process technology increases silicon concentration in steel. CVD, performed in a steel strip annealing line, causes a reaction between steel strips and silicon tetrachloride ($SiCl_4$) gas in a furnace while continuously passing the steel strips through the furnace.

■ Super Core Manufacturing Process



■ Related Products and Technologies

Expand contributions to CO_2 emissions reduction in society		
Contribution to CO_2 Reduction through the Engineering Business	New regional electricity	Regional Electricity Retail Businesses in Partnership with the Local Municipal Governments Establishing New Regional Electricity Businesses (P.107)
	Food waste recycling	Food Waste Recycling Business (P.106)
	Carbon recycling	Carbon recycling initiatives (CO_2 separation and collection, waste to chemical) (P.108)
Electrical Steel Sheets	JNRF™	JFE Steel develops JNRF™ silicon-gradient steel sheet for high-speed motors—minimizes high-frequency iron loss and improves high magnetic flux density (https://www.jfe-steel.co.jp/en/release/2020/201203.html)
	Facility expansion	JFE Steel to expand electrical steel sheet production capacity at Kurashiki facility (https://www.jfe-steel.co.jp/en/release/2021/210401.html)
	Supply chain for electrical steel sheets	JFE Steel & JSW Steel proposes Grain Oriented Steel Sheet Manufacturing JV in India (https://www.jfe-steel.co.jp/en/release/2021/210507.html)
		Establish a global supply chain in electrical steel sheets business (P.111)

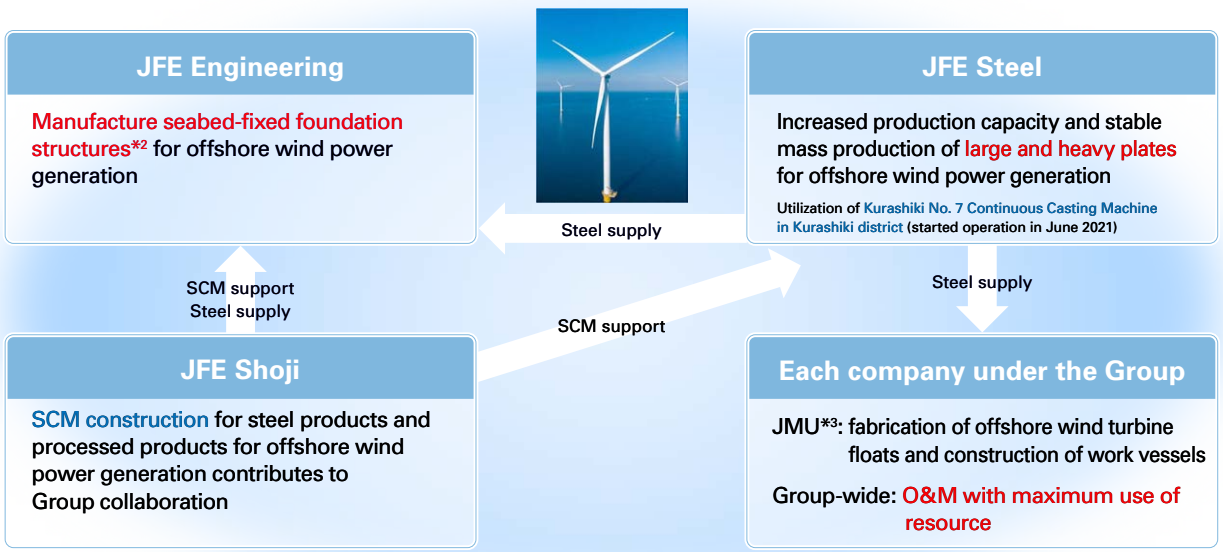
Accelerate Group-wide Commercialization of the Offshore Wind-Power Business

Offshore wind power generation is a key initiative of the Japanese government's Green Growth Strategy to achieve carbon neutrality by 2050. We will work in this area by leveraging the Group's collective strength and our engineering business acting as the main driver. Specifically, we will become the forerunner in the business of offshore wind-power generation by manufacturing and commercializing the foundation structures (monopiles) and establish a supply chain across the Group, including manufacturing foundations and O&M.*

*Operation and maintenance

■ Commercialization of Offshore Wind-Power Business

- By commercializing our manufacturing of foundation structures (monopiles), we will become the forerunner in the business of offshore wind-power generation and establish a supply chain across the entire Group, including foundation manufacturing and O&M.*1
- We will aim to expand business in the field of renewable energy by leveraging the JFE Group's collective strengths (synergies), with JFE Engineering as the main player.



*1 Operation and maintenance. Apply expertise of maintenance and analysis technologies.
*2 Seabed-fixed foundation structures: monopiles, jackets, etc.
*3 Japan Marin United Corporation (equity method affiliate)

■ Related Products and Technologies

Accelerate commercialization of our offshore wind-power business by applying the strengths of the Group.		
Offshore wind-power generation business	New offshore wind-power PJ team	Establishment of new organization for offshore wind business (Japanese only) (JFE Engineering) (https://www.jfe-eng.co.jp/news/2021/20210831.html)
	Equipment for offshore wind power generation	Capital investment for the construction of the new factory for monopile foundations decided - Japan's first manufacturing base for the bottom—mounted foundations of offshore wind turbines (JFE Engineering) (https://www.jfe-eng.co.jp/en/news/2021/20210720.html) No. 7 continuous casting machine at JFE Steel West Japan Works (Kurashiki district) began its operation (Japanese only) (JFE Steel) (https://www.jfe-steel.co.jp/release/2021/06/210616.html) SCM for Steel Materials and Processed Products for Offshore Wind Power Generation (JFE Shoji) (P.111)

Risk Management (Climate Change)

JFE Holdings is responsible for comprehensive risk management in accordance with its Basic Policy for Building Internal Control Systems. The JFE Group CSR Council chaired by the president of JFE Holdings, consolidates information and strengthen management across the Group to reduce the frequency and impact of risks.

The executive officer responsible for risk works to identify potential ESG risks such as those associated with climate change. As necessary, the JFE Group CSR Council confirms and evaluates risks and discusses and makes decisions on countermeasures. Key managerial issue are deliberated by the Group Management Strategy Committee.

The Board of Directors supervises initiatives on ESG risks such as those related to climate change and CSR by discussing and making decisions on, and by receiving reports on, these matters.

Climate-related risks are identified and evaluated based on a scenario analysis conducted under the framework recommended by the TCFD in 2017. Important factors that may affect management are selected for further analysis and used in formulating business strategies, such as the Seventh Medium-term Business Plan.

Monitoring Method for Core Issues Related to Climate Change

Issues that may affect management are being monitored by the JFE Group CSR Council, Group Management Strategy Committee and the Management Committee. As for the method, measures are implemented based on a quarterly report on climate change-related issues deliberated by the specialized committees of each Group company (e.g., the Environmental Committee). The JFE Group Environmental Committee consolidates information and strengthens management to reduce the frequency and impact of risks and to maximize opportunities.

Countermeasures Based on Monitoring

1. Group-wide deliberations
2. Monitoring penetration of policies within the Group
3. Monitoring deployment of policies throughout the Group

For further details, refer to the following links.

➤ CSR Structure (P.26)
➤ Risk Management (P.193)
➤ Environmental Management (P.49)

Metrics and Targets (Medium- and Long-term Targets and Results in FY2020)

The JFE Group's steel business is led by its operating company, JFE Steel, which is a member of the Japan Iron and Steel Federation (JISF). The JFE Group is promoting the JISF's Commitment to a Low Carbon Society, which focuses on the Three Ecos initiatives and the development of innovative new iron and steelmaking processes. Under the initiative, the JISF plans to reduce emissions by 3 million t-CO_2 compared to the BAU (Business As Usual emissions: Estimated level of emissions in the absence of any special measure) by FY2020 and by 9 million t-CO_2 by FY2030. JFE Steel is aggressively pursuing activities toward these goals.

In addition, JISF has formulated and announced its long-term vision for climate change mitigation in 2030 and beyond, which is intended to realize zero-carbon steel. JFE Steel played an important role in formulating this vision. Furthermore, in 2021, the JISF announced the "Basic Policy of the Japan steel industry on 2050 Carbon Neutrality aimed by the Japanese government," declaring that the Japanese iron and steel industry will boldly take on the challenge of realizing zero-carbon steel.

The JFE Group intends to increase sustainability through solutions that address global climate change issues while restructuring its business to respond to developments in the environment facing the steel business. We regard the 2020 to be the landmark year to further reinforce our efforts to tackle the climate change issues, and we declared our target to reduce the CO_2 emissions in FY2030 by 20% or more compared to FY2013 and to achieve carbon neutrality by 2050.

In 2021, the JFE Group has positioned its initiatives on climate change as a top priority issue and, as part of its Seventh Medium-Term Business Plan, has formulated the JFE Group Environmental Vision for 2050, under which we will aim to achieve carbon neutrality by 2050. The Group also disclosed a new CO_2 reduction target. Major Group companies of JFE Steel have formulated CO_2 reduction targets on the same level as JFE Steel's. The Group companies in Japan and overseas work together to incorporate efforts to address climate change issues into the business strategy. By reflecting the TCFD's principles in their management strategies, the Group will systematically promote to reduce CO_2 emissions.

JFE Group's Initiatives to Reduce CO_2 (the JFE Group Environmental Vision for 2050)

Seventh Medium-term Business Plan Initiatives

- Reduce steel-business CO_2 emissions in FY2024 by 18% compared to FY2013 (JFE Steel).
  Furthermore, JFE Steel's major group companies have also set their own CO_2 reduction targets for FY2024 to ensure that these targets are achieved. With this, more than 99% of the total CO_2 emissions of the entire JFE Steel Group is accounted for.
- The target of reducing CO_2 in FY 2030 : 30% or more compared to FY2013 (JFE Steel)

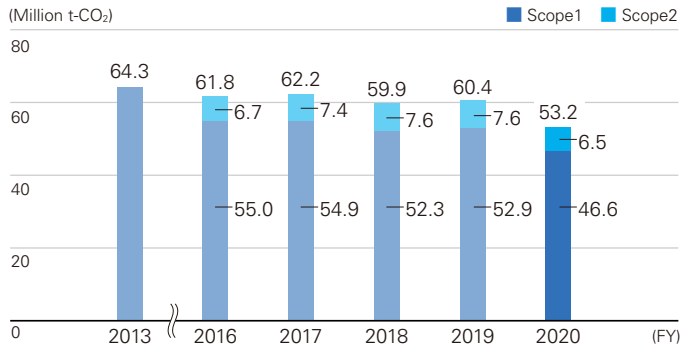
Initiatives for Carbon Neutrality by 2050

- Reduce CO_2 emissions at JFE Steel
  -Pursue super-innovative technologies mainly for carbon-recycling blast furnaces and CCU
  -Develop hydrogen-based ironmaking (direct-reduction) technology
- Expand engineering business contributions to CO_2 emissions reduction in society
  -Reduce CO_2 emissions by 12 million tonnes in FY2024 and 25 million tonnes in FY2030.
- Offshore wind-power generation business
  -Accelerate commercialization of our offshore wind-power business by applying the strengths of the Group.

➤ **JFE Group Environmental Vision for 2050, Presentation Material**
(https://www.jfe-holdings.co.jp/en/investor/zaimu/g-data/2020/May2021-210525-release01.pdf)

CO_2 Emissions of the JFE Group

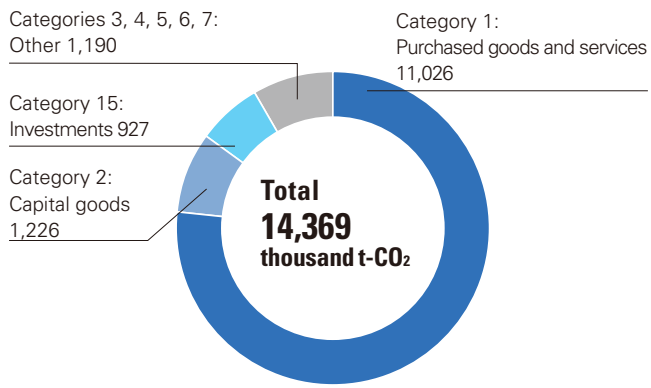
■ CO_2 Emissions of the JFE Group



Data cover 76 companies
JFE Steel and 30 major domestic and overseas subsidiaries
JFE Engineering and 10 major domestic subsidiaries
JFE Shoji and 33 major domestic and overseas subsidiaries

Notes:
-Data for JFE Steel include CO_2 emissions from non-energy sources.
-Starting with FY2018, data for JFE Steel's subsidiaries and JFE Engineering's subsidiary include CO_2 emissions from non-energy sources.
-Data from FY2013 to FY2016 includes the Sendai Works of JFE Bars & Shapes Corporation.

■ Scope 3 Emissions of the JFE Group (FY2020)



Coverage:
(Categories 1, 2, 3, 4, 5) JFE Steel, 25 JFE Steel domestic subsidiaries, JFE Engineering, and JFE Shoji
(Category 6, 7) JFE Steel, 25 JFE Steel domestic subsidiaries, JFE Engineering, 10 JFE Engineering domestic subsidiaries, and JFE Shoji
(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

For more on quantitative data related to CO_2 emissions, refer to the following information.

➤ Environmental Data (P.198)

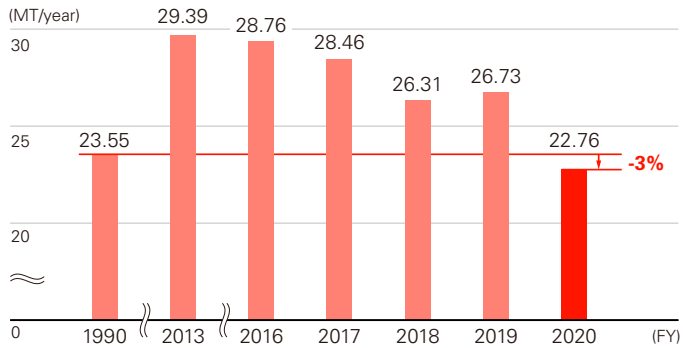
JFE Steel

Initiatives to Save Energy and Reduce CO_2

JFE Steel has always aggressively pursued CO_2 reduction and energy savings, including the introduction of energy-saving equipment.

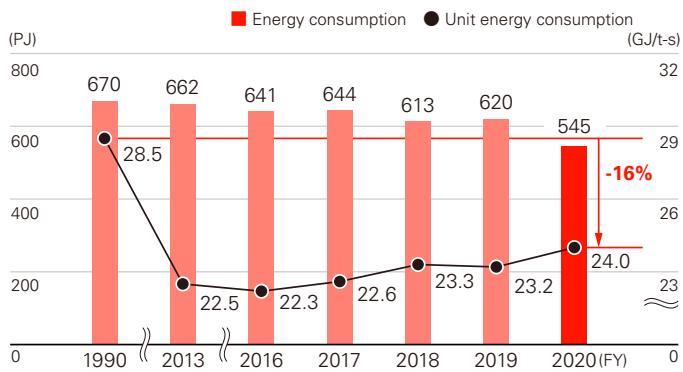
Energy Consumption and CO_2 Emissions in FY2020

■ Production of Crude Steel of JFE Steel



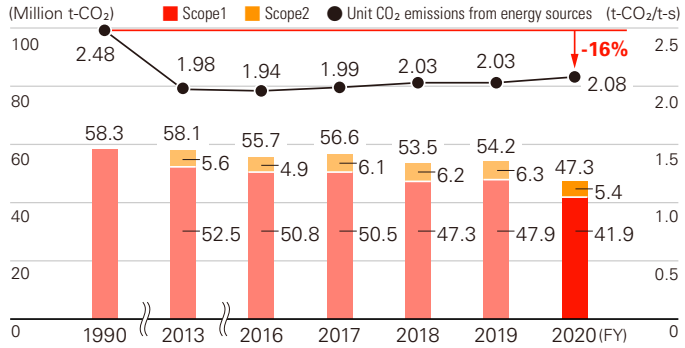
Note: Figures for FY2013 to FY2016 included data for JFE Bars & Shapes Corporation's Sendai Works.

■ Energy Consumption and Unit Energy Consumption of JFE Steel



Note: Figures for FY2013 to FY2016 included data for JFE Bars & Shapes Corporation's Sendai Works.

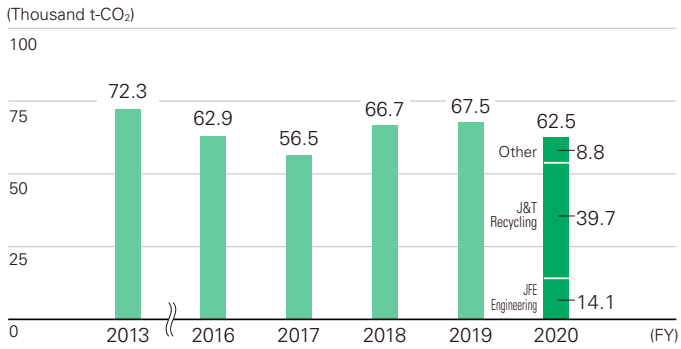
■ CO_2 Emissions from Energy Sources and Unit CO_2 Emissions of JFE Steel



Notes:
-The CO_2 emissions and emission intensity in FY2020 are calculated using the CO_2 emission factor for electricity purchased in FY2019, adopted by the Japan Iron and Steel Federation's Commitment to a Low Carbon Society.
-FY2019 data was revised by applying the CO_2 emission factor for electricity purchased in FY2019, adopted by the Japan Iron and Steel Federation's Commitment to a Low Carbon Society.
-Figures for FY2013 to FY2016 included data for JFE Bars & Shapes Corporation's Sendai Works.

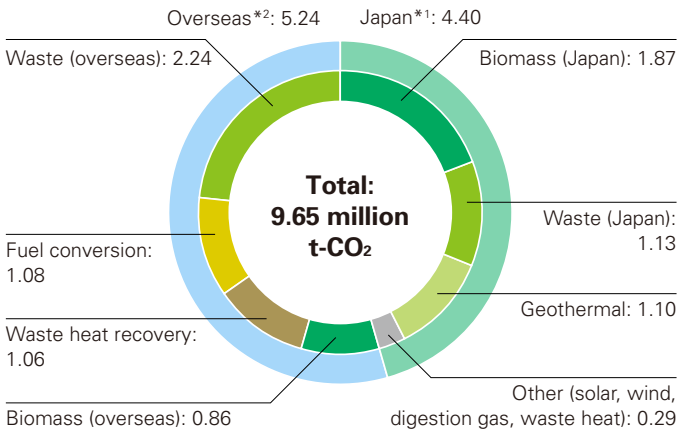
JFE Engineering

■ JFE Engineering Group's CO_2 Emissions from Energy Sources



Note: Data cover JFE Engineering and 10 consolidated subsidiaries in Japan.

■ JFE Engineering's Contribution to CO_2 Emission Reductions (FY2020)



*1 Data covers JFE Engineering
*2 Data covers Standardkessel Baumgarte GmbH (SBG), a German subsidiary of JFE Engineering Corporation

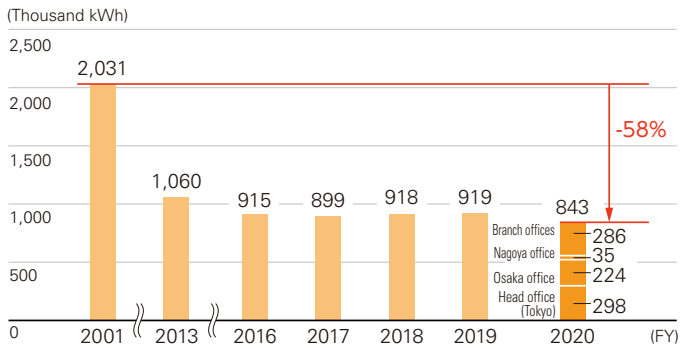
JFE Shoji

Under the environmental strategies formulated in 2001, JFE Shoji offices in Japan have consistently worked to reduce its use of energy and paper as well as strictly manage waste separation.

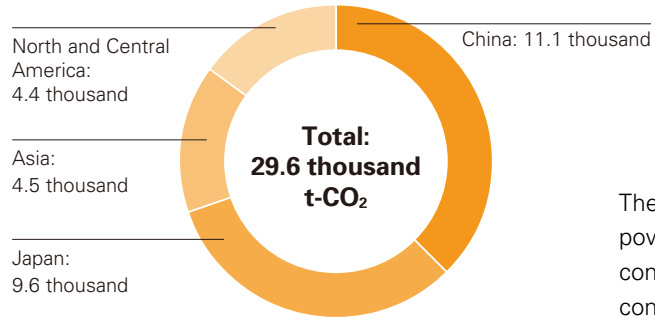
Efforts to cut energy consumption such as leave-on-time days, prohibition of night work, and pinpoint lighting have become firmly rooted. Continuous efforts are also made to improve the working environment through 5S activities and to raise operational efficiencies through robotic process automation (RPA). These efforts are contributing to reducing JFE Shoji's environmental impact. In FY2020, because employees worked from home due to the coronavirus pandemic (COVID-19), the electricity consumption at its offices decreased.

For some time now, the company has also been distributing pocket-sized cards to all employees, which describe its environmental policy, fiscal year targets, and environmental initiatives related to office and trading activities, in order to raise employee awareness of environmental activities.

■ Electric Power Consumption by JFE Shoji



■ **CO_2 Emissions of the JFE Shoji Group (FY2020)**



The graph shows CO_2 emissions from electric power consumption by JFE Shoji and 33 consolidated subsidiaries (steel-processing companies) in Japan and overseas.

Endorsing and Participating in External Initiatives

The JFE Group expresses its views and opinions on various public policies and external initiatives related to climate change and environmental conservation through Keidanren (Japan Business Federation) and the Japan Iron and Steel Federation (JISF), and it proactively participates in these activities. The Group also endorses the Challenge Zero declaration and will rise to the challenge in pursuit of innovation. Challenge Zero (Innovation Challenges Towards a Net Zero Carbon Society) is a new joint initiative by Keidanren and the Japanese government for proactively publicizing and supporting companies and organizations that pursue innovative actions toward realizing a decarbonized society, which is the long-term goal of the Paris Agreement.

The Japan Iron and Steel Federation (JISF) is committed to the achievement of a low carbon society with the target year of FY2030. In November 2018, the JISF also formulated and published the Long-term Vision for Climate Change Mitigation for 2030 and beyond, which represents the industry's challenge toward realizing zero-carbon steel. Furthermore, in February 2021, the JISF announced the "Basic Policy of the Japan steel industry on 2050 Carbon Neutrality aimed by the Japanese government," declaring that the Japanese iron and steel industry will boldly take on the challenge of realizing zero-carbon steel. As a member of the JISF, JFE Steel will be actively involved in these medium- and long-term climate change initiatives. JFE Steel is also participating in international activities, such as the Japan India Public and Private Collaborative Meeting, Japan-ASEAN Steel Initiative, and Japan-China Steel Industries Exchange. Furthermore, it is a member of the World Steel Association (WSA)'s Climate Action Program, which uses ISO 14404 as the standard for measurement and calculation.

JFE Engineering is a member of the Japan Climate Leaders' Partnership (JCLP). The JCLP, established in 2009, is a coalition of Japanese corporations that urge the industrial community to develop a sound sense of urgency on the issue of climate change and to initiate more proactive actions toward the goal of creating a sustainable, decarbonized society. By leading the transition to a decarbonized society, companies aim to fulfill their social responsibilities. JFE Engineering, together with the JCLP, will actively engage in a variety of activities that go beyond the boundaries of the company, to realize a sustainable, decarbonized society.

For more details, refer to the following.

➤ **Steel Industry Initiatives** (P.90)

Initiatives by industry groups

➤ **The Japan Iron and Steel Federation: Climate Change Policy** (https://www.jisf.or.jp/en/activity/climate/index.html)

➤ **The Japan Iron and Steel Federation: Challenge Toward Zero-Carbon Steel (Japanese only)** (https://www.jisf.or.jp/business/ondanka/zerocarbonsteel/index.html)

➤ **Keidanren (Japan Business Federation): Challenge Zero** (https://www.challenge-zero.jp/en/)

➤ **Japan Climate Leaders' Partnership (JCLP)** (https://japan-clp.jp/en)

Scenario Analysis in Line with the TCFD Recommendations

The JFE Group intends to achieve carbon neutrality by 2050. The Group leverages the scenario analysis in line with the TCFD recommendations to identify and assess climate change-related risks and opportunities and to strengthen the resilience of its organizational strategy. Please refer to the "Climate Change" page for governance, strategy, risk management, metrics and targets for climate change-related issues in line with the TCFD recommendations.

➤ **Climate Change** (P.55)

Milestones Related to Climate Change around JFE's Business and JFE's Initiatives

1997 Kyoto Protocol adopted at COP3 in Kyoto
2008 JISF's Voluntary Action Plan launched
2013 JISF's Commitment to a Low Carbon Society launched
2015 Paris Agreement adopted at COP21
2017 TCFD published the final report of its recommendations
2018 JISF announced the Long-term Vision for Climate Change Mitigation, Zero Carbon Steel
2019 **JFE Group announced its endorsement for the final report of the TCFD recommendations**
JFE Group published a scenario analysis in line with the TCFD recommendations
2020 Keidanren launched the Challenge Zero initiative
Ministry of Economy, Trade and Industry published a list entitled Companies Taking on the Zero-Emission Challenge
JFE Group published its targets in its medium- to long-term vision (target for 2030 and achieving carbon neutrality by 2050)
Prime Minister Suga declared Japan will achieve carbon neutrality by 2050
2021 JISF announced the Basic Policy of the Japan steel industry on 2050 Carbon Neutrality aimed by the Japanese government
JFE Group published its roadmap for achieving carbon neutrality in 2050 in the JFE Group Environmental Vision for 2050
Japanese government formulated the Green Growth Strategy Through Achieving Carbon Neutrality in 2050

The Challenge Zero (Innovation Challenges Toward a Net Zero Carbon Society) is a new joint initiative by Keidanren (Japan Business Federation) and the Japanese government for proactively publicizing and supporting companies and organizations that pursue innovative actions toward realizing a decarbonized society, which is the long-term goal of the Paris Agreement.

The JFE Group endorses the Challenge Zero declaration and will rise to the challenge in pursuit of innovation.

The Ministry of Economy, Trade and Industry (METI), in collaboration with Keidanren and the New Energy and Industrial Technology Development Organization (NEDO), has been tackling a project called the Zero-Emission Challenge. This is to prepare a list of companies generating innovation toward realizing a decarbonized society and to provide investors and other stakeholders with useful information on these companies. On October 9, 2020, on the occasion of TCFD Summit 2020, Mr. Kajiyama Hiroshi, Minister of Economy, Trade and Industry, published a list entitled Companies Taking on the Zero-Emission Challenge, which includes a total of about 300 named and unnamed companies. The JFE Group was selected for the category "Companies Taking on the Zero-Emission Challenge." These are organization who are boldly accepting the challenge of innovation to realize a decarbonized society.

The JFE Group publishes information on specific initiatives through the following website.

➤ **Challenge Zero** (https://www.challenge-zero.jp/en/member/34)

➤ **Zero-Emission Challenge** (https://www.meti.go.jp/english/press/2021/1005_002.html)

Scenario Analysis

Tools and Methods

Scenario analysis is performed to provide an accurate understanding of climate-related risks and opportunities and assess implications to the current business strategy, thereby enabling the organization to establish business strategies that reflect this assessment. We selected the following two scenarios by considering the fact that our business has potentially high exposure to the impacts of climate change.

Both scenarios are based on those developed by the International Energy Agency (IEA). Analysis is conducted under the assumption that a uniform carbon price is implemented in major emitting countries toward the realization of the 2°C target.

For the long-term scenario analysis, we set our goal as achieving carbon neutrality by 2050. We conducted risk assessments that take into account the prospect of achieving the 2°C scenario and the necessity of super-innovative technology for the 1.5°C scenario (IPCC 1.5°C Special Report) in steelmaking for carbon neutrality by 2050.

<table>
<tr><th colspan="2">Selected Scenario</th><th>2°C Scenario</th><th>4°C Scenario</th></tr>
<tr><td rowspan="2">Reference Scenario</td><td>Transition Risks</td><td>Transition scenarios developed by the IEA
· Sustainable Development Scenario (SDS)*1
· 2°C Scenario (2DS)*2</td><td>Transition scenarios developed by the IEA
· New Policies Scenario (NPS)*1
· Reference Technology Scenario (RTS)*2</td></tr>
<tr><td>Physical Risk</td><td colspan="2">Climate change projection scenario developed by the Intergovernmental Panel on Climate Change (IPCC)
· Representative Concentration Pathways (RCP) Scenario*3</td></tr>
<tr><td colspan="2">How Society will Look</td><td>Dynamic policies will be adopted and technical innovations will progress to limit the average temperature rise by the end of this century to 2°C and realize sustainable development.
Assume a society in which our business is affected by social changes accompanying transition to a decarbonized society.
· World-wide/industry-wide uniform carbon pricing*4
· Increase in the ratio of sales of electric vehicles to overall vehicle sales</td><td>Despite new policies implemented in each country based on approaches under the Paris Agreement, average temperature rises about 4°C by the end of this century.
Assume a society in which our business is affected by temperature rise and other climate change.
· Increase in the occurrence of flooding
· Sea level rise</td></tr>
</table>

*1 Source: IEA "World Energy Outlook 2018"

*2 Source: IEA "Energy Technology Perspectives 2017"

*3 Source: IPCC Fifth Assessment Report

*4 If prices of carbon differ from country to country, there will be a gap in international competitiveness between countries that impose strict CO_2 emissions regulations and less strict regulations. This will result in carbon leakage where CO_2 emissions of a strict climate policy country are reduced due to decreased production and investment, while production at and investment to other countries with laxer emission constraints increase, in turn increasing the CO_2 emissions in those countries. One reference scenario, SDS, assumes that carbon pricing is implemented in developed countries and some developing countries. By taking this into account, we formulated the 2°C scenario based on the assumption that a uniform carbon pricing is introduced to major emitting countries to push toward achieving the target of two degrees.

Scope of Business and Period for Analysis

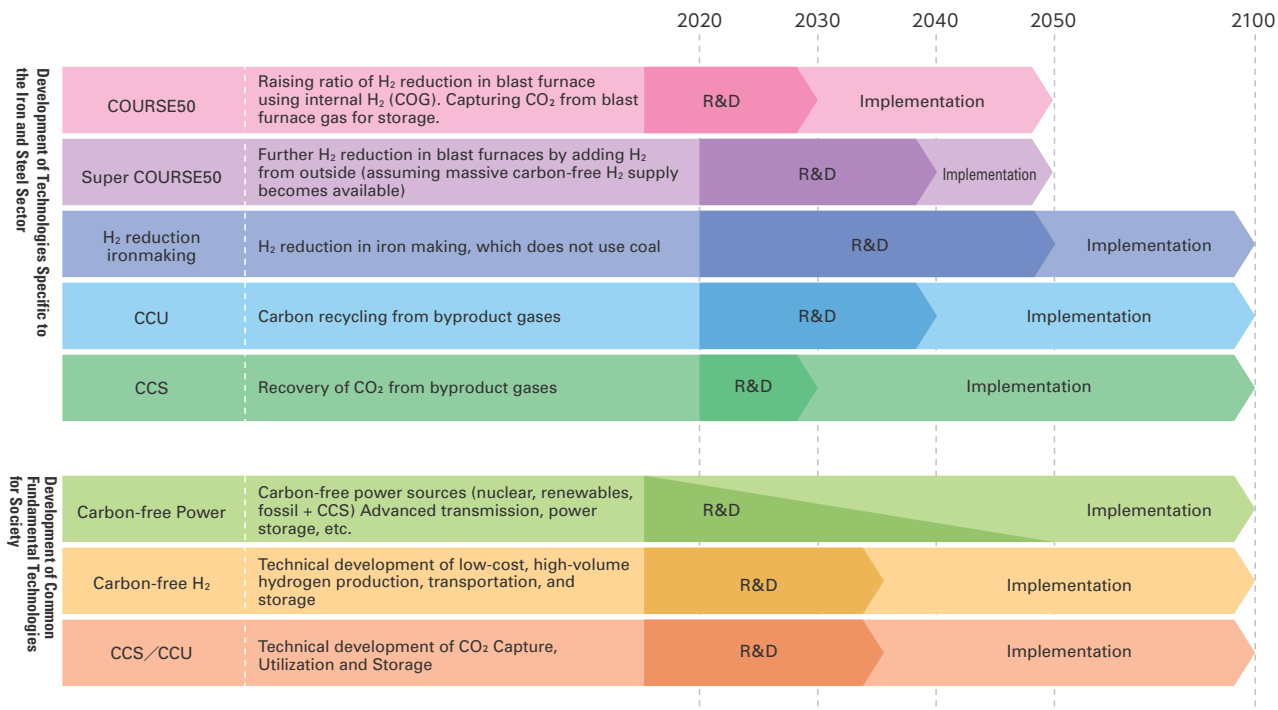
This analysis covers the following businesses: the steel business by JFE Steel, the engineering business by JFE Engineering, the trading business by JFE Shoji, and businesses carried out by some of the other Group companies. The period covered is up to 2050.

Relevance with JISF's Long-term Vision for Climate Change Mitigation

The JFE Group's steel business is led by its operating company, JFE Steel. JFE Steel is a member of the Japan Iron and Steel Federation (JISF), which has committed to the achievement of a low carbon society with the target year of 2030. In November 2018, the JISF also formulated and published the Long-term Vision for Climate Change Mitigation for 2030 and beyond. JFE Steel played a central role in the formulation of this long-term vision. The vision represents the industry's challenge toward realizing zero-carbon steel and lays out the prospect of achieving the 2°C scenario for steelmaking and necessity of super-innovative technologies to achieve the 1.5°C scenario. Furthermore, on February 15, 2021, the JISF announced the "Basic Policy of the Japan steel industry on 2050 Carbon Neutrality aimed by the Japanese government," which declares that the Japanese iron and steel industry will boldly accept the challenge of realizing zero-carbon steel.

The JFE Group's scenario analysis is intended to ensure resiliency in our Group's business strategy during the intermediate stages of these long-term challenges.

■ Efforts to Achieve Zero Carbon Steel



➤ JISF's Zero-Carbon Steel (https://www.zero-carbon-steel.com/en/)

Process to Identify Key Factors that Impact the Business

STEP 1: Examine the entire value chain from a holistic perspective and sort out factors that impact the businesses under analysis (for more information on risks and opportunities in the value chain, refer to:
➤ JFE Group Value Chain (P.32))

STEP 2: Examine all factors at an overview level and identify key factors by taking into account the level of impact and stakeholder expectations and concerns

	2°C Scenario	4°C Scenario
Impact on Procurement		5. Unstable raw materials procurement due to increased occurrence of climatic hazards
Impact on Direct Operation	1. Decarbonization of iron and steelmaking process 2. Increased needs for effective utilization of steel scrap	6. Damage to production bases and offices caused by climatic hazards
Impact on Product and Service Demand	3. Change in demand for automotive steel, etc. 4. Increase in demand for solutions to enhance decarbonization	7. National resilience

Level of Impact × **Expectations and concerns of stakeholders** → **Axis for identifying key factors**

Axis for identifying key factors:
- Level of impact (possibility of risks and opportunities arising × Level of impact if it manifests)
- Expectations and concerns of stakeholders

Results of Scenario Analysis

For the JFE Group, the issue of climate change is a critical managerial concern from the perspective of business continuity. Our steel business, which emits 99.9% of the Group's total CO_2 emissions, has been developing various technologies for saving energy and reducing CO_2 emissions. We have actively addressed the risks by applying these technologies to steel manufacturing and have also successfully reduced CO_2 emission intensity to the lowest level worldwide. We will continue to develop processes to reduce environmental impact further while at the same time seeking to turn this challenge into an opportunity for addressing climate change issues by deploying the technologies we have fostered across the globe.

The JFE Group has developed and maintained a variety of eco-friendly products and technologies, including high-performance steel materials that help save energy when customers use them, as well as renewable energy power generation. We view the current challenges as an opportunity and are contributing to solving the climate change problem. Automobiles are expected to become lighter in weight while the number of electric cars increases. We will support this by improving the functions of the JFE Group's high tensile strength steel sheets and electrical steel sheets. In addition, we will help reduce our carbon footprint by further disseminating renewable energies and implementing recycling initiatives as well as energy conservation.

To achieve the long-term goal of the Paris Agreement, to keep the global average temperature increase well below 2°C compared to pre-industrial levels and to strive to limit it to 1.5°C, the Group will continue to develop and disseminate new technologies and contribute to the prevention of global warming. We will also support national resilience by providing steel for social infrastructure and construction to address the emerging risks associated with the growing severity of meteorological disasters.

Analysis Results

	Changes in Society and Response	Stakeholder Expectations and Concerns for the JFE Group	Results of Assessment
2°C Scenario **Key Factor 1** Decarbonization of Iron and Steelmaking Process	Increasing social demand for decarbonized iron and steelmaking process → Implement innovative technology to realize decarbonation at a large scale → Introduce carbon price	• Significantly contribute through innovative technologies • Increase in investment to implement innovative technologies • Increase in operating costs due to introduction of carbon pricing	Opportunity ↗ Develop and put into practical use innovative technologies in addition to existing ones Risk ↘ Investment on implementing innovative technologies is feasible → The Group's cost competitiveness will be maintained through implementation of a uniform carbon price across all countries ↗ Operating cost increases (if carbon pricing is not properly introduced)
2°C Scenario **Key Factor 2** Increased Needs for Effective Utilization of Steel Scrap	Increasing interest for electric furnace method for its lower CO_2 emissions → Increasing expectations for electric furnace steel → Increasing volume of scraps generated	• Electric furnace as an alternative to converter furnace • Expanding electric furnace steelmaking within the JFE Group	Opportunity ↗ Converter furnace steelmaking is increasing due to constraint on the supply of scrap ↗ Expansion in electric furnace steelmaking and electric furnace engineering ↗ Expansion in scrap logistics business
2°C Scenario **Key Factor 3** Change in Demand for Automotive Steel	Shift in demand for automobiles → Increasing demand for EV motors → Decreasing demand for internal-combustion engines → Cars are lighter in weight and use multi-materials Increasing demand for eco-friendly materials → Demand for decarbonization and high recyclability	• Increase in demand for electrical steel sheets for EV motors • Decrease in demand for special steel due to decreased demand for internal-combustion engines • Alternative steel material for automobiles to meet the trend of using multi-materials • Demand to improve decarbonization and recyclability of steel	Opportunity ↗ Increase in demand for electrical steel sheets due to increase in electric vehicles ↗ Increase in demand for special steel due to increased car sales ↗ Increase in demand for high tensile strength automotive steel sheets ↗ Recyclability of steel is gaining attention again Risk → Effect of trend to use multi-materials is limited
2°C Scenario **Key Factor 4** Increase in Demand for Solutions to Enhance Decarbonization	Transition to decarbonized society → Increasing demand for solutions to promote the transition → Overseas expansion of energy-saving technologies	• Renewable energy power generation plant • Promote low-carbon business, or eco solutions, in developing countries using best available technologies (BAT) developed and put into practical use in Japan	Opportunity ↗ Entire construction and operation of renewable energy plants (biomass, geothermal, and solar power generation) ↗ Entire construction and operation of incinerators and plastic recycling plants ↗ Entire construction of CCU/CCS facilities ↗ Overseas expansion of low-carbon business
4°C Scenario **Key Factor 5** Unstable Raw Materials Procurement due to Increased Occurrence of Climatic Hazards	Increasingly devastating climate hazards caused by temperature rise → Raw materials procurement becomes unstable	• Raw material procurement becomes unstable	Risk → Ongoing specific measures: Diversify supply sources, strengthen capabilities of facilities
4°C Scenario **Key Factor 6** Damage to Production Bases and Offices Caused by Climatic Hazards	Increasingly devastating climate hazards caused by temperature rise	• Increase in damage caused by typhoons and heavy rain • Increase in damage caused by drought • Flooding caused by sea level rise	Risk → Measures against flood and drought are already in progress → Impact of flooding caused by sea level rise can be addressed with current countermeasures
4°C Scenario **Key Factor 7** National Resilience	Increasingly devastating climate hazards caused by temperature rise → Increasing the importance of enhancing infrastructure → Increasing demand for disaster mitigation products	• Contribute to reinforcing infrastructure with steel and other relevant products	Opportunity ↗ Reinforce infrastructure with steel and other relevant products

Overview of a Scenario Analysis Assessment

Timeframe: Mid-term ⇒until 2024, 2030 ⇒until 2030, 2050 ⇒until 2050 (final)

FOCUS Key Factor (1) Decarbonization of Iron and Steelmaking Process

We are developing innovative technologies to emerge as the pioneer in realizing a decarbonized society. With a strong financial base to meet investments for implementing innovative technologies, we are significantly contributing to the transition to a decarbonized society.

Mid-term, 2030

JFE Steel has been committed to developing energy-saving technologies toward increasing the efficiency of the iron and steelmaking process and decarbonization. These initiatives have helped JFE Steel acquire technologies that realize the world's top energy efficiency in iron and steelmaking. To further push ahead with decarbonization, the Company will enhance the development of innovative ironmaking processes such as COURSE50 and ferro coke, which are expected to reduce the carbon footprint through hydrogen reduction and CCS.

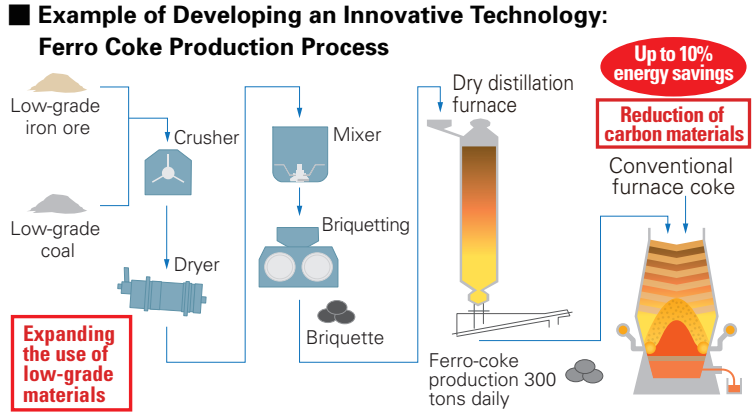
Mid-term, 2030, 2050

COURSE50 applies hydrogen reduction technology and CCS to reduce CO_2 emissions by about 10% and 20%, respectively, through each technology, for a total reduction of about 30%. The first facility is expected to come online by 2030, followed by the implementation of other plants by 2050, corresponding with the timing for upgrading blast furnace facilities. Ferro coke is a technology for significantly reducing CO_2 emissions by improving the reduction rate of iron ore put into blast furnaces. In addition to these technologies, we will push forward to establish a hydrogen reduction ironmaking technology which we will aim to put it into practice after 2030 in order to realize the ultimate goal of creating zero-carbon steel.

We consider implementing innovative technologies as critical and will advance with this strategy together with the government. Furthermore, we have a sufficient financial base to meet necessary investments.

A medium-scale pilot plant with the capacity to produce 300 tonnes of ferro coke per day was constructed in the Fukuyama district of the JFE Steel West Japan Works, and experimental runs began in October 2020.

■ Example of Developing an Innovative Technology: Ferro Coke Production Process



2050

In the long term, we will develop carbon recycling blast furnaces (CR blast furnaces), hydrogen steelmaking, and electric furnaces while striving to achieve carbon neutrality by 2050, as stated in the JFE Group Environmental Vision for 2050. In particular, we have been focusing on a technology that combines a CR blast furnace with CCU. This is a super-innovative technology that targets net zero CO_2 emissions by drastically reducing CO_2 emissions from the blast furnace process, maximizing its ability to efficiently produce high-grade steel in mass volume, and enabling CO_2 reuse in the blast furnace. The remaining CO_2 that cannot be fully reused in the furnace will be further reduced by manufacturing basic chemicals such as methanol.

Cost competitiveness will be maintained in case uniform carbon pricing is introduced across all countries.

Mid-term, 2030

Various approaches to carbon pricing have been introduced around the world, and in Japan as well the analysis for carbon pricing such as carbon taxes and emissions trading has started toward achieving carbon neutrality by 2050. In Europe, a border adjustment tax is also being discussed.

If uniform carbon pricing is introduced to major emitting countries, the increase in operating cost will be reflected reasonably on the price of steel products both in Japan and overseas, thus maintaining the Company's cost competitiveness. In addition, since CO_2 emissions per unit of steel production is the lowest of all competing materials, steel retains its superior position in cost competitiveness.

On the other hand, the introduction of carbon pricing in a manner that is biased toward certain regions, industries, or countries such as Japan would have a major impact on the JFE Group and particularly on its steel business as this would further increase the current price of electricity, which is already high in Japan compared to other countries. It may cause the Company to lose its cost competitiveness and may even inhibit innovation and hinder the realization of carbon neutrality. As carbon pricing is introduced, we will need to monitor emerging trends closely in order to see whether it will truly contribute to growth.

FOCUS Key Factor (2) Increased Need for Effective Utilization of Steel Scrap

To achieve carbon neutrality, we are focusing on high-grade steel manufacturing and raising efficiency by applying our industry-leading electric furnace technology. Furthermore, we will open up opportunities for the entire JFE Group by expanding the use of our electric furnaces, increasing the use of our electric furnace construction technology, and expanding scrap logistics.

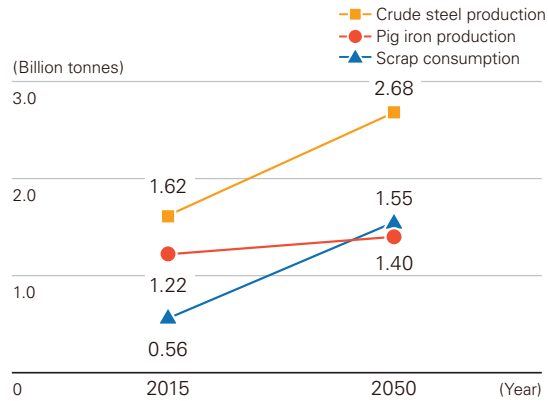
Mid-term, 2030, 2050

The JISF predicts that the demand for crude steel will continue to grow as the world's population increases and the economy develops and that both the blast furnace and electric furnace methods will be indispensable as major steelmaking processes (JISF's Long-term Vision for Climate Change Mitigation). To achieve carbon neutrality, we need to expand the production of steel products using the electric furnace method, which emits less CO_2. For this to happen, we need to work on technologies that improve the productivity of electric furnaces and address the constraints in producing high-grade steel products. We must also work on technologies that increase the amount of scraps used in converter furnaces.

The JFE Group is viewing the increase in demand for electric furnace steel as well as the world-wide increase in the amount of scrap generated as an opportunity, and it will enhance its electric furnace steel production while applying its engineering technology for constructing an entirely cutting-edge, energy-saving electric furnace facility with the ultimate goal of opening up other business opportunities. Moreover, the Group will advance the development of technologies to utilize scrap and increase the industry-wide use of this material.

Meanwhile, expanding the use of scrap will bring about an increase in logistics for distributing it, and this will provide an opportunity for JFE Shoji to expand its logistics business.

■ Estimated Supply and Demand for Steel Production and Scrap Use



FOCUS Key Factor (3) Change in Demand for Automotive Steel

The shift to EVs is accelerating as new and stricter environmental regulations are being introduced globally at a faster pace. Demand for electrical steel sheets for EV motors as well as special steel is increasing as global car sales rise. The increase in the intensity of high tensile strength automotive steel sheets contributes to further weight reductions.

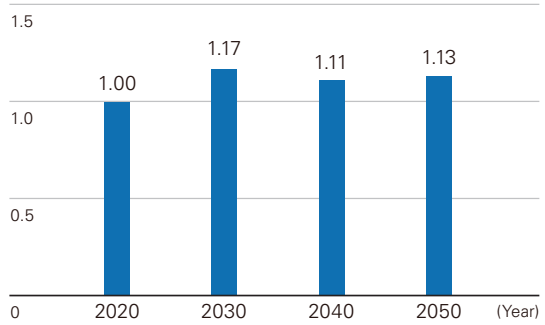
Mid-term, 2030, 2050

The trend of increasing electric vehicles has given rise to rapidly expanding demand for electrical steel sheets used in EV motors. JFE Steel has already marketed the JNE series of non-oriented electrical steel sheets, used in building motors, as part of its eco-product lineup. It also commands a strong share of the market.

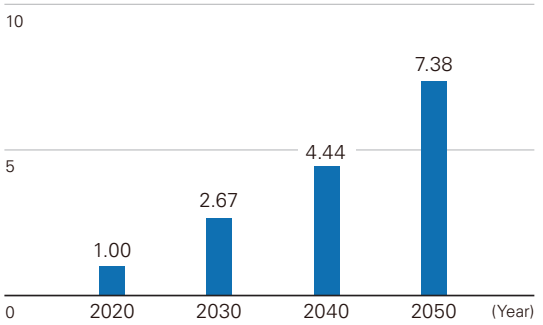
On the other hand, it has been pointed out that an increase in EVs may lead to a decline in the amount of special steel used in engine components. The amount of this type of steel, used in hybrid vehicles and electric vehicles, is 80% and 60% of gasoline cars, respectively. We believe that the risk level for this matter, however, is low since car sales are expected to increase even under the 2°C scenario and total demand for special steel for cars is increasing.

Nonetheless, the situation for EV remains the same in terms of strong demand for weight reduction of body structure. JFE Steel has developed a cold-rolled steel sheet boasting 1.5 GPa-grade tensile strength as an eco-product and has put it into practical use as an automotive steel sheet. With its high strength, the product can significantly reduce the weight of a car frame. In response to customer needs for more environmentally sound options, we intend to expand its application and further increase its strength, thus dramatically reducing CO_2 emissions from cars in motion.

■ Estimated World Demand for Automotive Special Steel



■ Estimated World Demand for Automotive Electrical Steel Sheets



Vertical axis: Steel demand (comparison by year with the year 2020 as 1.00)
Source: Estimated by JFE Holdings based on reports by Strategic Commission for the New Era of Automobiles (METI)

Steel demand will increase due to renewed interest in its highly recyclable quality, essential for decarbonization.

Mid-term, 2030, 2050

Steel is a highly recyclable material that can be reborn as many different products over and over again with no loss in its intrinsic quality. In the future, public resource recycling is expected to increase toward establishing a decarbonized society. We believe that the high recyclability of steel will gain attention once again in light of this transition.

Effect of trend to use multi-materials is limited.

Mid-term, 2030, 2050

Aluminum and carbon fiber reinforced plastic are potential alternative materials for reducing the weight of cars. It has been pointed out, however, that the production cost of these materials and the amount of CO_2 emitted throughout their life cycles is higher than those of steel. Therefore, under the 2°C scenario, which assumes the introduction of a carbon price, the price differential between steel and alternative materials will be larger. Under this scenario, while the trend of using multi-materials may show some progress for luxury cars, their use would be limited for economy cars. Moreover, considering a situation in which all panels used for doors and other parts of a luxury car were changed to aluminum, the effect on weight reduction could be expected to be 5% of all materials used in luxury and economy cars together. Multiplied by the number of cars produced, the impact over the total demand for automotive steel can be assumed to be limited.

In the meantime, JFE Steel has developed a multi-material structure that uses a small amount of fiber resin to maximize steel quality. In this new structure, a highly ductile, strong adhesive resin is sandwiched between a body part made of an ultra-high strength steel plate and a part made of a thin steel plate. This structure is capable of further reducing the weight of automobile frame parts and also improving collision safety performance.

We will continue developing and proposing various products and technologies that meet customer needs.

➤ An energy-absorbing structure made of ultra-high strength steel and a small amount of resin (P.99)

FOCUS Key Factor (4) Increase in Demand for Solutions to Enhance Decarbonization

Contribution through the provision of solutions (renewable energy power generation, Multisite Energy Total Service, recycling business, carbon-recycling technologies and energy-saving steel technologies)

Renewable Energy Power Generation **Mid-term, 2030, 2050**

Demand for power generation plants using non-carbon emitting renewable energies is expected to increase. The JFE Group engages in designing, procuring, constructing, and operating biomass*1, geothermal*2, solar*3, 4, and onshore wind power generation plants in its engineering domain.

We will also work on offshore wind power generation, which the Japanese government has positioned as one of the pillars of its Green Growth Strategy to achieve carbon neutrality by 2050. JFE Engineering will drive this by entering into the business of manufacturing seabed-fixed structures (monopiles, etc.). JFE Steel will contribute by increasing the supply of large and heavy steel plates, and JFE Shoji will assist by establishing SCM, which includes information sharing between Taiwan, who is leading the offshore wind power generation market, and East and Southeast Asian countries, which are future regions of demand. We will also work on the O&M*5 that makes maximum use of Group resources.

Furthermore, from the perspectives of resource recycling and effective use of resources, we are making efforts to increase power output at waste processing facilities. JFE Engineering is striving to develop a fully automated operation*6 to facilitate higher power output at incinerators.

(2020: six facilities → 2021: additional four facilities are scheduled. More to follow.)

Moreover, we are utilizing renewable energy as the main power source for our retail electricity business*7 and in helping to establish and operate regional electricity retail companies*8, 9 focused on local production and consumption of electricity based on renewable energy.

(2020: 8 locations → FY2024: targeting around 10 locations → 2030: targeting around 20 locations)

(Amount of contribution to CO_2 reduction resulting from renewable energy power generation: FY2020: 9.65 million tonnes per year → FY2024: 12 million tonnes per year → FY2030: 20 million tonnes per year)

Biomass power generation plant

Waste-to-energy power generation plant

➤ *1 The JFE Engineering Corporation's Biomass (https://www.jfe-eng.co.jp/en/products/power/s02.html)
➤ *2 The JFE Engineering Corporation's Power generation plant (https://www.jfe-eng.co.jp/en/products/power/gene01.html)
➤ *3 The JFE Engineering's Solar power generation (Japanese only) (https://www.jfe-eng.co.jp/products/power/ele05.html)
➤ *4 The JFE Technos Corporation's Solar power generation (Japanese only) (https://www.jfe-technos.co.jp/products/solar/)

*5 Operation and maintenance

➤ *6 The JFE Engineering's BRA-ING Pre-release (Japanese only) (https://www.jfe-eng.co.jp/news/2020/20200727.html)
➤ *7 Urban Energy Corporation's Electricity retail business (Japanese only) (https://u-energy.jp/service/retail.html)
➤ *8 Urban Energy Corporation's Regional electric power support business (targeting local governments) (Japanese only)(https://u-energy.jp/service/municipality.html)
➤ *9 Establishing regional electricity retail companies in partnership with local municipal governments (P.107)

Multisite Energy Total Service Mid-term, 2030, 2050

In addition to the conventional service of optimizing energy use for single sites, JFE Engineering offers the Multisite Energy Total Service (JFE-METS)*1, which optimizes energy use for multiple sites through centralized management. We realize overall energy savings and CO_2 reduction by analyzing energy consumption at multiple sites and achieving total optimization by installing and operating energy-related equipment at each site to circulate energy throughout the network, including remote locations.

➤ *1 The JFE Engineering Corporation's JFE-METS (Japanese only) (https://www.jfe-eng.co.jp/news/2019/PDF/20200130.pdf)

Recycling Business Mid-term, 2030, 2050

We are working to reduce the use of new fossil fuel-derived materials by recycling waste plastics and food wastes. In waste plastic recycling, in addition to the conventional recycling of plastic containers and packaging, we are actively engaged in the so-called bottle-to-bottle business, in which we recycle finished PET bottles into new PET bottles, demonstrating a complete resource recycling model for reducing CO_2 emissions. In food recycling, we generate methane gas from disposed food wastes to create renewable energy (fuel gas and electricity). JFE Engineering undertakes the construction of recycling plants*1 from design to procurement and construction as well as operation, and J&T Recycling Corporation operates a plastic recycling business*2.

Industry-wide decarbonization cannot be achieved only through technical developments in the manufacturing process alone. Therefore, we believe that demand for CCU and CCS facilities will increase as they facilitate the efficient use and storage of CO_2. JFE Engineering is able to undertake the entire process of building CCU and CCS facilities from design and procurement to construction.

➤ *1 The JFE Engineering Corporation's Recycling (https://www.jfe-eng.co.jp/en/products/recycle/rec01.html)
➤ *2 The J&T Recycling Corporation's Recycling (https://www.jt-kankyo.co.jp/en/business/products/)

Carbon-recycling Technologies **Mid-term, 2030, 2050**

JFE Engineering is working on a technology that uses CO_2 from exhaust gas and waste plastics, collected and separated using its own technology, to produce synthesis gas (CO + H_2) that can be used as raw materials for chemical products. Since waste plastic is used as a source of hydrogen and energy, the company is able to achieve the carbon recycling of CO_2 and chemical recycling of waste plastic at the same time. We intend to commercialize this technology in 2024 as an EPC (Engineering, Procurement, Construction) product, and we also anticipate using it in our own businesses.

(Amount of contribution to CO_2 reduction made by the carbon recycling technologies: FY2024: 0 million tonnes per year → FY2030: 1 million tonnes per year)

Energy-saving Steel Technologies **Mid-term, 2030**

From the perspective of the steel industry, there is space for disseminating eco solutions (energy-saving steel technologies) in nations such as China, where close to 50% of the world's crude steel is produced, and India and ASEAN countries, where further growth in production is expected. The potential CO_2 reduction achieved by internationally transferring and disseminating advanced energy-saving technologies widely used in Japan will exceed 400 million t-CO_2 world-wide. Japan is estimated to contribute to the reduction of approximately 80 million t-CO_2 in FY2030 through these technologies.

FOCUS Key Factor (5) Unstable Raw Material Procurement due to Increased Occurrence of Climatic Hazards

Ongoing initiatives to address the issue, such as alternative procurement and dispersed supplier bases, and increasing plant capacity.

Mid-term, 2030

In Australia, our major source country for raw materials, the occurrence of typhoons is predicted to double. We may be vulnerable in terms of continuous production and suffer a loss if production and shipping are interrupted for too long.

To address this issue, we are promoting alternative procurement and dispersed supplier bases.

Alternative procurement and dispersed supplier bases:
Respond to disaster by carrying out spot procurement from China's port stocks, increasing procurement from closer source countries such as Russia and Indonesia and front-loading the purchase and/or increasing the purchase contract of different brands from outposts in unaffected regions of Australia. Also, use the stock and external yard of the Group company Philippine Sinter Corporation.

The decarbonization in the steelmaking process is expected to lead to a diversification of the required raw materials. We will take into account the risk of climate change for these materials also and work to establish diversified procurement sources.

FOCUS Key Factor (6) Damage to Production Bases and Offices Caused by Climatic Hazards

Measures against flood and drought in progress; impact of flooding caused by rising sea levels can be addressed with current countermeasures.

Mid-term, 2030

We are taking action to minimize damage under the assumption that typhoons and heavy rains will become stronger and that the occurrence of disasters comparable to the torrential rain in western Japan in 2018 will rise. We have currently invested approximately 6.5 billion yen for disaster prevention at steelworks and strengthened drainage facilities and other assets. About 3.5 billion yen of separate investment has already been made to prepare for water shortages at steelworks by installing desalination facilities at some of the steelworks. Although no severe drought disaster has struck since the 1994 disaster, we are preparing to minimize any damage even if the frequency of occurrence should increase.

All steelworks are exposed to the risk of floods associated with rising sea levels because of their location in coastal areas. The estimated sea level rise by 2050 is 20 to 30 cm (70 cm by 2100 if the impact of climate change manifests itself at the highest level.) We believe that current measures against storm surge, which generates more sea level rise, are sufficient to address the risk. However, we will continue analyzing climatic hazards going forward so as to prepare for the changing circumstances.

FOCUS Key Factor (7) National Resilience

Contribute to infrastructure enhancement with products such as high-strength H-shaped steel and steel pipe piles, hybrid tide embankments, and permeable steel slit dams.

Mid-term, 2030

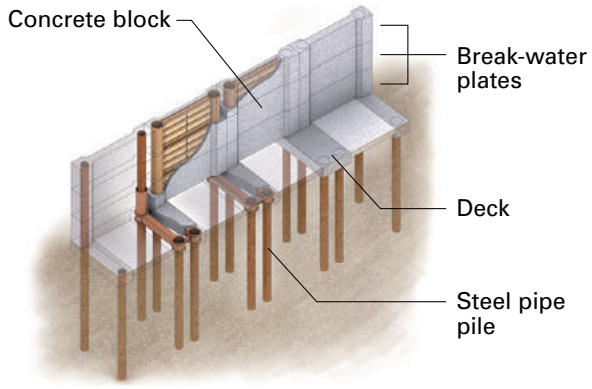
The JFE Group takes seriously the increased frequency and severity of recent climatic hazards in Japan. Also, the daily life of the Japanese citizenry is being exposed to a heightened risk of danger. The JFE Group defines its mission as promoting disaster prevention and mitigation as well as national resilience to maintain vital infrastructure that are essential to daily life and economic activities.

The JFE Group will gather its collective energy to protect key structures from earthquakes using structural steel such as high-strength H-shaped steel and steel pipe piles as well as steel sheet piles. It will also help to reinforce embankments that are prone to bursting and provide disaster prevention products such as hybrid tide embankments*1 and permeable steel slit dams, in addition to reconstructing infrastructure.

Hybrid Tide Embankments

Hybrid tide embankments are made of steel and concrete. Because of their hybrid structure, they require shorter construction time and less space.

Concrete blocks for hybrid tide embankments are precast at a JFE Group factory, while steel pipe piles for foundations are installed at the construction site, thereby reducing the time required for on-site construction by about 60%. This arrangement does not require large amounts of materials, equipment, or workers on site, so it does not interfere with other construction work. Furthermore, compared to a conventional embankment structure, the land area occupied by the embankment can be reduced by about 80%, saving considerable space. We will continue to apply and advance our technology to further contribute to disaster prevention in the region.



Hybrid tide embankments

➤ ***1 The JFE Engineering Corporation's Steel infrastructure (Japanese only)**
(https://www.jfe-eng.co.jp/products/bridge/co01.html)

Permeable Steel Slit Dams

A permeable steel slit dam is a steel pipe structure installed in a river to trap debris flows.

Made of strong steel pipes to withstand the impact of driftwood and huge debris, it has large openings to let water and sediment to pass through, which prevents the water level from rising upstream during floods and also ensuring that debris does not flow downstream. Since it does not block the flow of water, unlike a dam, it can be shaped to the slope of a riverbed to protect the ecosystem. The JFE Group is working to expand the use of permeable steel slit dams by reducing installation costs and shortening the construction period through structural innovations.

Permeable steel slit dam

Links to information about the JFE Group Environmental Vision for 2050 and Climate Change Scenario Analysis
Commitment to a Low Carbon Society: ➤ **Steel Industry Initiatives** (P.90)
Targets and Results Related to Climate Change: ➤ **KPIs for material issues** (P.19)
Initiatives on Climate Change: ➤ **Climate Change** (P.55)
Technologies and Products Related to CO_2 Emissions:
➤ **Development and Provision of Eco-friendly Processes and Products** (P.94)

Steel Industry Initiatives

The Japan Iron and Steel Federation (JISF) Initiatives

Long-term Vision for Climate Change Mitigation

In addition to JISF's commitment to a low carbon society with the target year of 2030, JISF formulated and published in November 2018 its Long-term Vision for Climate Change Mitigation for 2030 and beyond. JFE Steel played a central role in formulating the vision. It represents the industry's challenge for realizing zero-carbon steel and shows the prospect of achieving the 2°C scenario for steelmaking and the necessity of super-innovative technologies to achieve the 1.5°C scenario. Furthermore, on February 15, 2021, the JISF announced the Basic Policy of the Japan steel industry on 2050 Carbon Neutrality aimed by the Japanese government, declaring that the Japanese iron and steel industry will boldly accept the challenge of realizing zero-carbon steel.

➤ Relevance with JISF's Long-term Vision for Climate Change Mitigation (P.79)

The Commitment to a Low Carbon Society

JISF is promoting its Commitment to a Low Carbon Society, which focuses on the Three Ecos initiatives and the development of innovative new iron and steelmaking processes. JFE Steel is actively implementing initiatives to help achieve the plan's targets.

■ **CO_2 Reduction Medium- to Long-term Targets (The 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 t-CO_2 compared to the BAU benchmark • Energy-saving: 3 million t-CO_2 • Efficient use of waste plastics, etc.: 2 million t-CO_2	The use of major high-performance steel materials to contribute to a CO_2 reduction of approximately 34.0 million t-CO_2	Estimated CO_2 reduction impact of 70 million t-CO_2
	FY2030 (phase-II)	Reduce CO_2 emissions by 9 million t-CO_2 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 t-CO_2	Estimated CO_2 reduction impact of 80 million t-CO_2
Status as of FY2019 year-end		Reduced 3.3 million t-CO_2 emissions (energy conservation etc.), compared to the BAU benchmark	Domestic and international use contributed to a CO_2 reduction of 31.94 million t-CO_2	CO_2 reduction impact of 68.57 million t-CO_2

Assessment of Commitment to a Low Carbon Society Results (JISF)

In FY2019, emissions by the Japanese steel industry decreased by 3.3 million t-CO_2 compared to the BAU emissions* benchmark. Various self-improvement efforts, such as raising the efficiency of coke ovens and generation facilities, are steadily contributing to this reduction. JFE Steel is actively working on these self-improvement efforts as well as investing in research and development for new energy-saving technologies.

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

Revolutionary Iron and Steelmaking Process Development

COURSE50

About 30% of CO_2 emissions can be reduced through hydrogen reduction along with separation and capture of CO_2 from blast furnace gases. The first facility is expected to come online by 2030, followed by other plants by 2050.

Ferro Coke

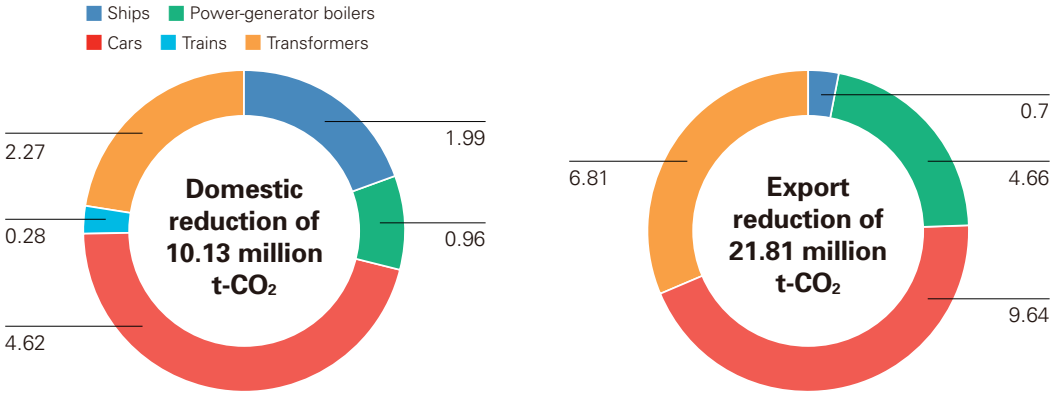
The Japanese steel industry intends to develop ferro coke that accelerates and lowers the temperatures of the reduction reaction in a blast furnace as well as its operational processes to conserve energy further and expand the use of low-rank materials. A medium-scale plant capable of producing 300 tonnes of ferro coke per day has been constructed in JFE Steel's West Japan Works (Fukuyama district) and experimental testing for practice use started in FY2020.

Reduced CO_2 Emissions through High-performance Steel Materials (Effects of Eco Products)

The Japan Iron and Steel Federation (JISF) expects the use of high-performance steel materials to reduce CO_2 emissions. It is estimated that the use of 5 major high-performance steel materials for cars, transformers, ships, power generator boilers, and trains in Japan and overseas (FY2019 production: 7.06 million tonnes, 7.2% of crude steel production) helped to reduce CO_2 emissions by 31.94 million tonnes (10.13 million tonnes in Japan, 21.81 million tonnes overseas) in FY2019.

*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.

■ **CO_2 Reduction Resulting from the Use of Five High-performance Steel Materials in Japan and Abroad (FY2019)**



Global Scale Initiatives

Addressing Global Warming

ISO 14404 is an international standard proposed by the Japan Iron and Steel Federation (JISF) to the International Organization for Standardization (ISO) as a methodology for the globally unified calculation of CO_2 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 India and ASEAN countries. It is continuing this effort together with the Ministry of Economy, Trade and Industry (METI) in order to enhance ISO 14404 so it can be applied to steel manufacturing facilities with more complex structures.

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 as a member of World Steel Association (WSA)'s Climate Action Program, which uses ISO 14404 as the standard for measurement and calculation.

■ **Climate Action Member Certification**

JFE Steel

Contribution to the Development of Calculation in LCA

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.

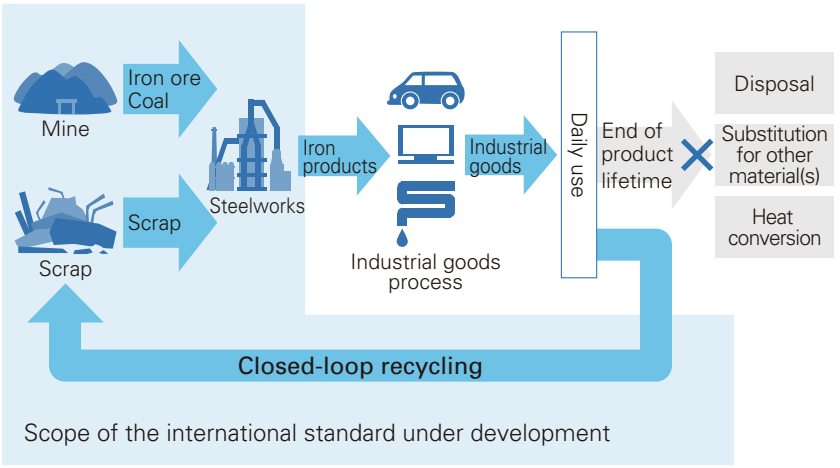
After final products such as automobiles and buildings finish their mission in society, all of their steel components can be recycled and reused. This closed loop recycling ability is an excellent characteristic of steel materials. If LCA is conducted and this characteristic is taken into account, steel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

JFE Steel played a major role in the development of ISO 20915 (Life Cycle Inventory Calculation Methodology for Steel Products) and JIS Q 20915 (Life Cycle Inventory Calculation Methodology for Steel Products), initiatives led by the Japan Iron and Steel Federation (JISF), which takes into account the impact of recycling and provides life cycle inventory (LCI) calculation methods specific to steel products.

In addition, 15 Japanese manufactures of blast furnace and electric furnace joined forces to calculate the Japanese average for LCI of different steel products. The calculation result based on their FY2018 operational data was also published.

➤ Value of Steel (P.6)

■ **Life Cycle of Steel Materials**



Related Links

➤ The Japan Iron and Steel Federation (JISF): Climate Change Policy page (https://www.jisf.or.jp/en/activity/climate/index.html)
➤ The Japan Iron and Steel Federation (JISF): LCA of Steel Products page (https://www.jisf.or.jp/en/activity/lca/index.html)
➤ The Japan Iron and Steel Federation (JISF): Publication of ISO 20915 (https://www.jisf.or.jp/en/activity/lca/iso/index.html)
➤ The Japan Iron and Steel Federation (JISF): Publication of JIS Q 20915 (https://www.jisf.or.jp/en/activity/lca/iso/index.html)

Development and Provision of Eco-friendly Processes and Products

Basic Policy

Based on its corporate philosophy of "contributing to society with the world's most innovative technology," the JFE Group develops and provides processes and products for contributing to climate change solutions and reducing its environmental impact. Through the initiatives described in the JFE Group Environmental Vision for 2050, intended to expand our contributions to reducing CO_2 emissions generated by the JFE Group and society as well as other efforts to develop and provide processes and products related to preserving the global environment, the Group is striving to enhance its corporate value and play its part in realizing a sustainable society.

Primary Eco-friendly Products and Technologies by Business Segments

Each operating company of the JFE Group leverages its respective strengths to develop and provide a variety of eco-friendly products and technologies.

■ Primary Eco-friendly Products and Technologies

Product/Technology	Environmental Benefit	Operating Company	Status
Ferro-coke (P.96)	Save energy and reduce CO_2 emissions	JFE Steel	Experimental operation
Burner lance (P.97)	Save energy and reduce CO_2 emissions		In operation
Guidance system for fuels/steam/power management (P.98)	Save energy		Partially in operation
Zero-emission ship fuels through CCU/CCS (P.98)	Reduce CO_2 emissions		Under development
Multi-material structure of Ultra-high strength steel with resin (P.99)	Improve fuel efficiency and reduce CO_2 emissions		Under development
1.5 GPa-grade high-tensile strength cold-rolled steel sheets (P.101)	Improve fuel efficiency and reduce CO_2 emissions		Commercialized
Type 1 and Type 2 accumulators for hydrogen stations (P.101)	Supply hydrogen		Commercialized
Calcia improvement material (P.103)	Recycle resources and preserve biodiversity		Commercialized
Steel slag hydrated matrix (P.103)	Recycle resources and reduce CO_2 emissions		Commercialized

Product/Technology	Environmental Benefit	Operating Company	Status
Precast concrete products mixed with finely ground blast furnace slag **(P.104)**	Recycle resources and reduce CO_2 emissions	JFE Steel	Commercialized
Granulated blast furnace slag **(P.104)**	Recycle resources and preserve biodiversity and reduce CO_2 emissions		Commercialized
Marine Stone® **(P.105)**	Recycle resources and preserve biodiversity		Commercialized
Frontier Rock® **(P.105)**	Recycle resources and preserve biodiversity and reduce CO_2 emissions		Commercialized
Marine Block® **(P.105)**	Recycle resources and preserve biodiversity and reduce CO_2 emissions		Commercialized
Food waste recycling business **(P.106)**	Recycle resources and expand renewable energy	J&T Kankyo	Business expansion
Establishing new regional electricity businesses **(P.107)**	Expand renewable energy	JFE Engineering	Business expansion
Integrated plant management system J-Answer **(P.108)**	Save energy and gain efficiency		Started operation
Carbon recycling initiatives (CO_2 separation and capture, waste to chemical) **(P.108)**	Reduce CO_2 emissions		Under development, experimental operation
Aerobic granular sledge technology **(P.109)**	Improve water quality		Under development
Contribution to the realization of a circular economy **(P.110)**	Recycle resources and save energy		Business expansion
Further expansion of global supply chain for the Steel Sheets Business **(P.111)**	Save energy and reduce CO_2 emissions	JFE Shoji	Sales expansion
Building a supply chain for steel materials and processed products for offshore wind power generation **(P.111)**	Expand renewable energy		Business expansion
Expansion of biomass fuel trading **(P.112)**	Expand renewable energy and reduce CO_2 emissions		Sales expansion
Expansion of scrap trading helps in the development of a recycling-oriented society **(P.112)**	Recycle resources and reduce CO_2 emissions		Sales expansion

For further details on the JFE Group Environmental Vision for 2050, refer to the following resources.

➤ **The JFE Group Environmental Vision for 2050** (P.56)

➤ **The JFE Group Environmental Vision for 2050, presentation material on May 25, 2021**
(https://www.jfe-holdings.co.jp/en/investor/management/plan/index.html)

JFE Steel

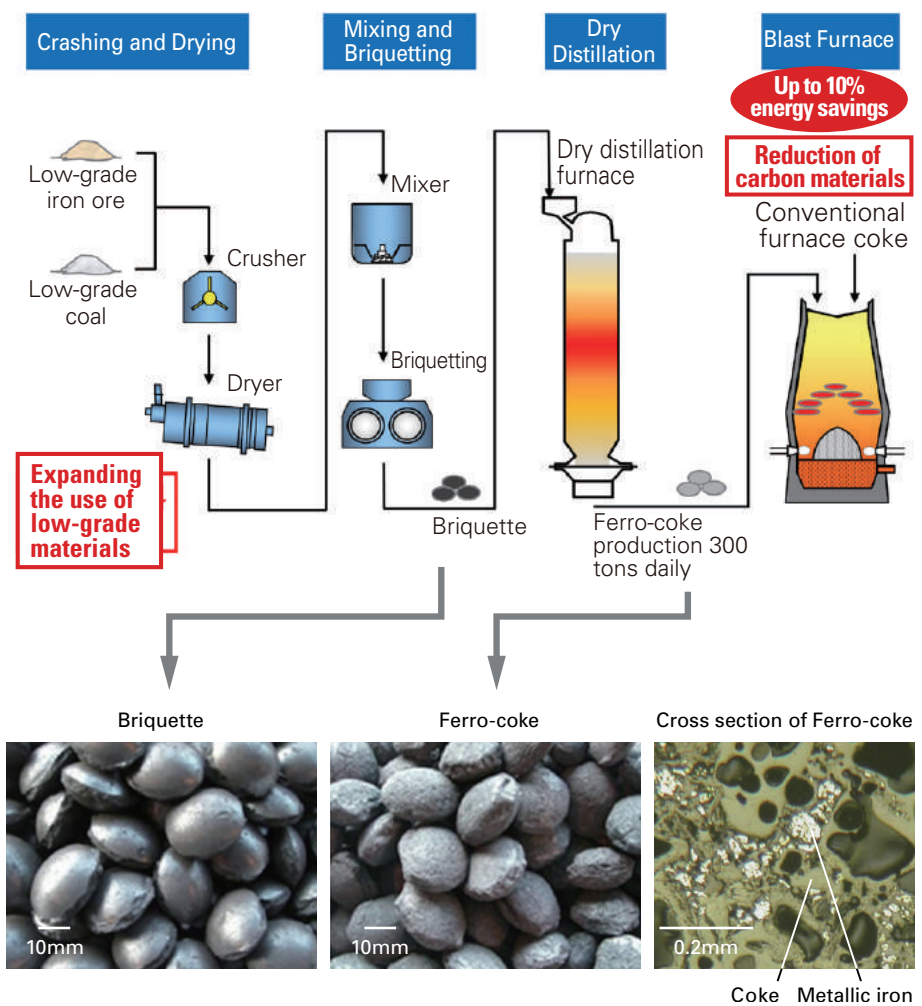
Ferro-Coke

Ferro-coke, an innovative raw material for blast furnaces, is made by mixing low-grade coke and iron ore. The ultra-fine metallic iron inside acts as a catalyst and accelerates the reduction reaction rate in the blast furnace, reducing the amount of coke required and thus significantly reducing the amount of CO_2 generated.

Since FY2017, JFE Steel has been promoting the New Energy and Industrial Technology Development Organization (NEDO) project, the development of environmental technology for the steelmaking process, and technological development of the iron making process using Ferro-coke. As part of the project, a medium-scale facility with the capacity to produce 300 tonnes of Ferro-coke per day was constructed in the Fukuyama district of the JFE Steel West Japan Works, covering 12,600 square meters of ground. Its experimental operation started in October 2020. This facility is designed to handle all steps involved in the production of Ferro-coke, from crushing and drying to molding and dry distillation and is capable of producing one-fifth of the production capacity expected for full commercialization (1,500 tonnes per day). It is also capable of recycling Ferro-tar, a byproduct of Ferro-coke production, as a binding agent for briquetting.

In FY2021, the company is preparing for a demonstration study on the effect of using Ferro-coke in blast furnaces over a long period of time. It will subsequently establish a technology that reduces CO_2 emissions and energy consumption in the iron making process by about 10% by around 2023.

■ **Process Flow of the Medium-scale Ferro-Coke Production Facility**



Medium-scale Ferro-Coke Production Facility

Burner Lance

JFE Steel's smelting reduction furnaces are equipped with an exclusive, unique technology that melts chromium ore (Cr_2O_3) in the slag and reduces it with carbonaceous material (coke, coal) to recover metallic chrome (Cr), the raw material for stainless steel. Unlike conventional stainless steel refining processes, this approach significantly reduces the amount of ferrochromium (FeCr) alloys used, which consume a large amount of energy during production, and so it achieves extremely high energy efficiency.

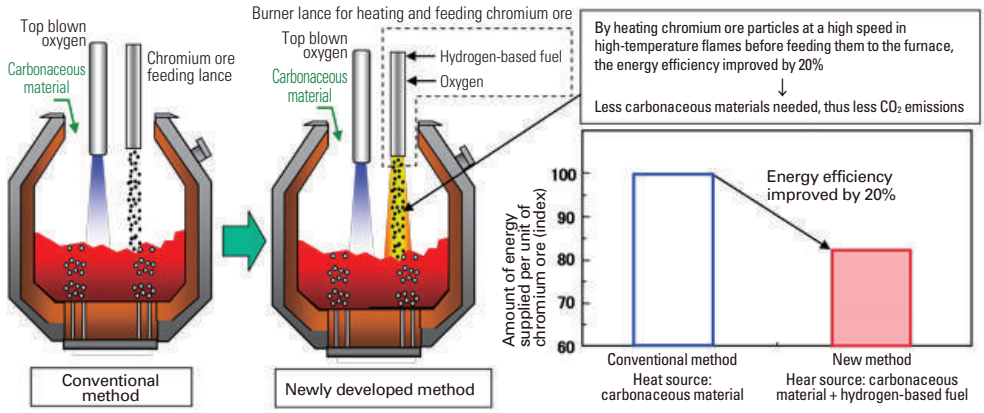
The new technology adds a pure oxygen burner function, one of the world's largest burners using hydrocarbon gas as fuel, to the conventional chromium ore feeder lance. Chromium ore is heated via a high-temperature flame and fed to the furnace, which results in providing the furnace with the necessary heat more efficiently than the conventional method. Other applications for these burner lances are also under consideration, such as incorporating it into normal steel converters to transfer heat for accelerating the rate of scrap melting.

The technology has improved energy efficiency by about 20% and reduced CO_2 emissions by about 10% compared to the conventional method. Also, it received the 53rd (FY2020) Ichimura Prize in Industry for Outstanding Achievement.

Looking ahead, we will apply the technology to the scrap melting process in converters. By helping to increase the amount of scrap used and thus reducing CO_2 emissions, the company will contribute to the realization of a sustainable society.

➤ JFE Steel's Chromium Stainless Steel (https://www.jfe-steel.co.jp/en/products/stainless/index.php)

■ Process of Smelting and Reducing Chromium Ore Using a Hydrocarbon Fuel Burner



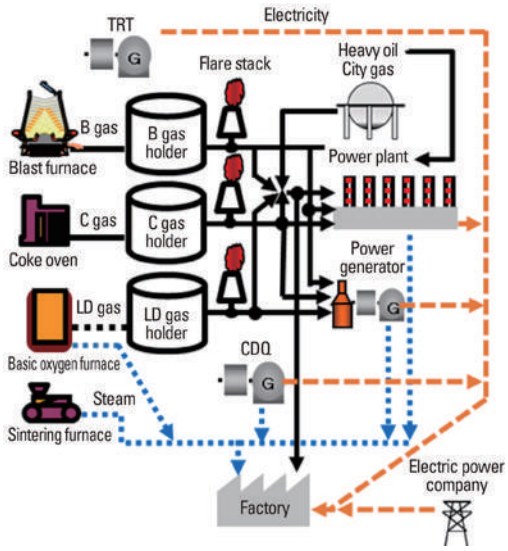
A Guidance System for Fuels, Steam and Power management in Steelworks —Optimization of Energy Consumption Based on Cyber-physical Systems

JFE Steel developed what it calls the Guidance System for operators to efficiently utilize fuels and electricity in domestic steelworks to reduce energy consumption and CO_2 emissions. So far, the system has been introduced in the Kurashiki and Fukuyama districts in the JFE Steel West Japan Works and will be rolled out in other sites to increase the overall benefits in reduced energy consumption and CO_2 emissions.

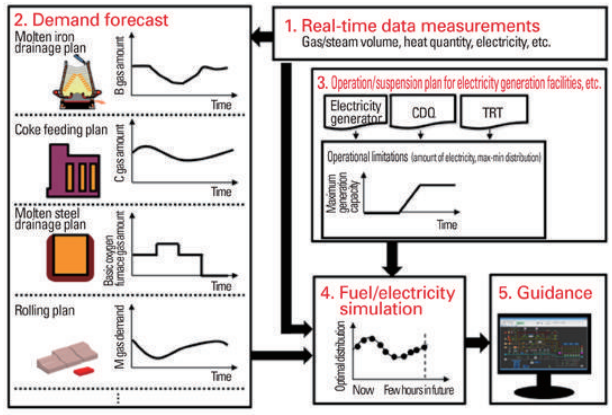
In steelworks, gases, electricity and steam that are generated as by-products by upstream processes are consumed within the same premises. We also purchase fuel and electricity from external sources to meet actual demands. To efficiently utilize fuel and electricity, many different factors need to be managed to minimize cost and energy losses, including the ratio of by-product gases to be distributed to each process, the storage volume of by-product gases, and the amount of electricity and fuel to be purchased.

The Guidance System (1) uses the vast amount of real-time data obtained based on CPS and each factory's detail manufacturing plan, (2) calculates precise future demands, (3) takes into account operational constraints and contract information, (4) runs simulations to determine the optimal operational plan for minimizing external purchases, and (5) guides operators toward this optimal plan.

■ Steelwork's Energy Flow



■ Guidance System Overview



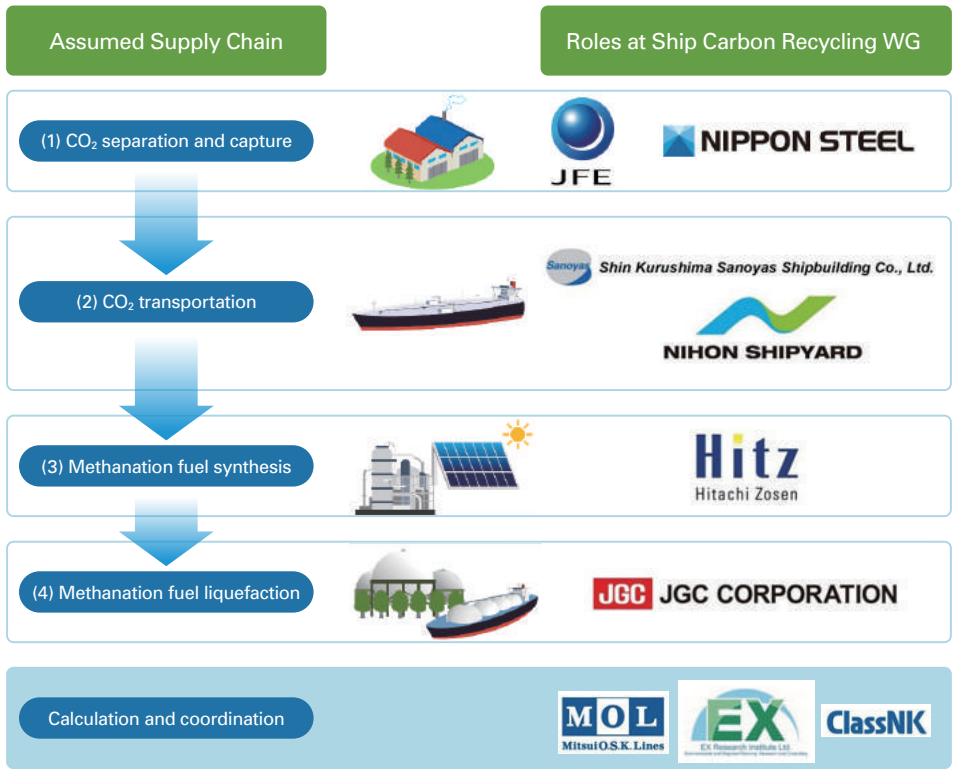
➤ **Guidance System to Manage Fuels and Electricity Consumptions at Steelworks (Japanese only)**
(https://www.jfe-steel.co.jp/release/2020/01/200130.html)

CCS/CCU —Cross-Industry Initiatives for Zero-Emission Ship Fuels through Methanation Technology

The steel industry relies on ships to transport most of its raw materials and products. Therefore, it is important for the industry to consider how to reduce CO_2 emissions throughout its supply chain. As a member of the Ship Carbon Recycling Working Group (WG) of Japan's Carbon Capture & Reuse Study Group, which was formed in August 2019, JFE Steel participates in exploring the feasibility of utilizing methanation technology for zero-emission ship fuels. This WG has nine participating members, EX Research Institute Ltd., JFE Steel Corporation, Mitsui O.S.K. Lines, Ltd., Sanoyas Shipbuilding Corporation, JGC Corporation, Nippon Kaiji Kyokai (Class NK), Nihon Shipyard Co. Ltd., Nippon Steel Corporation and Hitachi Zosen Corporation, and is exploring a value chain that does the following: (1) Separation, capture and liquefaction of CO_2 emitted from steelworks, (2) Transportation of liquefied CO_2 by ship to a hydrogen supply site, (3) Generation of synthetic methane from CO_2 and hydrogen by methanation reaction, and (4) Liquefaction of the synthetic methane assuming that it will be used as marine fuel. In addition to obtaining an approximate value of CO_2 emission, the WG also identifies technical challenges.

➤ Reduce CO_2 Emissions at JFE Steel (P.61)

■ **Initiatives of Japan's CCR Study Group "Ship Carbon Recycling WG"**



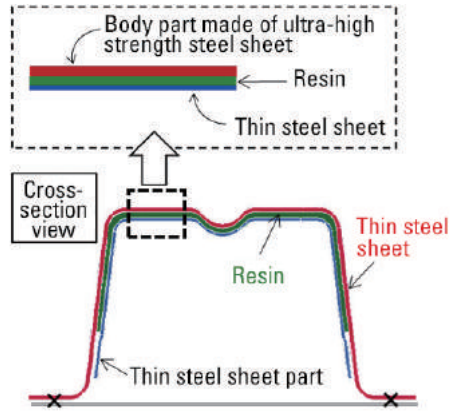
Ultra-high Strength Steel Structure Using Resin for Energy Absorption —Multi-material Technology that Further Reduces Weight of Automobile Structural Parts and Improves Collision Safety Performance

JFE Steel and Iida Industry Co. Ltd. have jointly developed a multi-material structure that uses resin in structural parts for automobiles. The new structure facilitates the use of ultra-high tensile strength steel sheets for the energy-absorbing parts of automobiles.

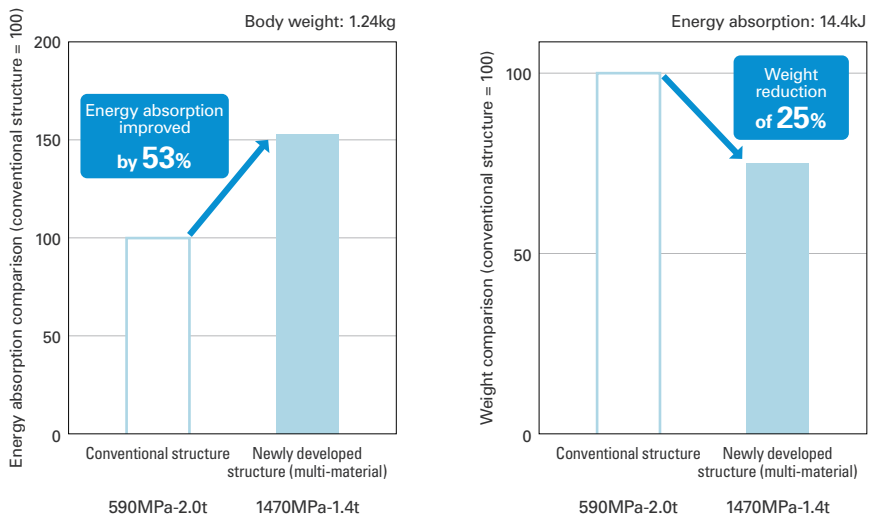
In recent years, the use of ultra-high-strength steel sheets (tensile strength of 980 MPa or higher) in structural frame parts has significantly increased to meet expectations for both high collision safety performance and automobile weight reduction. These applications, however, have been limited to parts that constitute the cabin, such as the center pillar, where deformation should be limited in a collision. The application of ultra-high strength steel sheets to front and rear side members where collision energy needs to be absorbed by the deformation of the parts, has been difficult because fracture occurs in the steel parts by buckling and severe bending.

To make ultra-high strength steel sheets applicable to energy-absorbing parts, JFE Steel developed a structure in which a highly ductile and adhesive resin, developed by Iida Industry Co. Ltd., is sandwiched between a structural part made of ultra-high strength steel sheet and a part made of thin steel sheet. The ultra-high strength steel sheet in the structure has a greater bending radius and does not break, even when used in energy-absorbing parts and buckled or bent in a collision. As a result, the structure is capable of improving energy-absorbing performance by 53% compared to materials of the same weight and reduces weight by 25% compared to materials with the same energy-absorbing performance.

■ Newly Developed Multi-material Structure



■ Energy-Absorbing Performance Improvement and Weight Reduction Using Multi-Material Technology



➤ Energy-absorbing, Ultra-high Strength Steel Structure Using Resin (Japanese only)
(https://www.jfe-steel.co.jp/release/2021/03/210302_2.html)

1.5 GPa-Grade High-Tensile Strength Cold-Rolled Steel Sheets

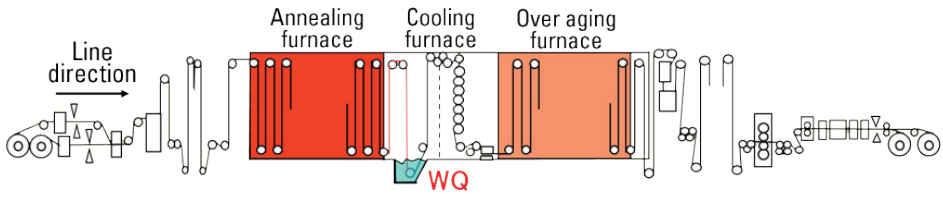
In 2020, JFE Steel Corporation announced that its 1.5 GPa-grade (1470 MPa) high-tensile strength cold-rolled steel sheets are now being utilized in vehicle body structural parts, the world's first such adoption in a cold press forming application*1. This constitutes the highest strength of vehicle body structural parts obtained through cold press forming.

In order to protect vehicle occupants in the event of a collision and improve fuel economy through weight reductions, efforts are ongoing to increase the strength of vehicle body structural parts. JFE Steel's 1.5 GPa-grade high-tensile strength cold-rolled steel sheets are already being utilized in parts with simple shapes, such as bumpers and door impact beams. However, the adoption for vehicle body structural parts with complex shapes has been limited to the 1.3 GPa (1,310 MPa) grade until now because increasing the strength of sheets can result in decreased cold press formability and delayed fracture resistance*2, and the adoption of 1.5 GPa-grade high-tensile strength steel sheets through a hot press forming process*3 was more widespread.

JFE Steel used the high cooling capacity of the proprietary WQ method-based*4 continuous annealing process line located at JFE's West Japan Works (Fukuyama District) to reduce the addition of alloy elements and minimize non-uniformity of the steel microstructure. As a result, particularly high yield strength*5 and delayed fracture resistance were simultaneously realized even with the 1.5 GPa-grade high-tensile strength steel sheets while maintaining cold press formability equivalent to that of 1.3 GPa-grade sheets. This enabled the utilization of the 1.5 GPa-grade high-tensile strength steel sheets in vehicle body structural parts through a low-cost and environmentally sound cold press forming process. JFE Steel is contributing to the reduction of CO_2 emissions through this product and its use in automobile components.

*1 Based on JFE Steel research
*2 Delayed fracture resistance: A property that inhibits the occurrence of static brittle cracking attributed to hydrogen after press molding
*3 Hot press forming process: A process in which a material is heated to a high temperature and softened and is then simultaneously molded with a press die and quenched to obtain a high-strength part.
*4 WQ method: Water quenching method
*5 High yield strength: Strength at which a steel sheet begins to deform. The yield strength directly impacts the strength of a part.

■ Schematic Diagram of the WQ Method-Based Continuous-Annealing Equipment



➤ 1.5 GPa-Grade High-Tensile Strength Cold-Rolled Steel Sheets (https://www.jfe-steel.co.jp/en/release/2020/201223.html)

Commercialization of Type 1 and Type 2 Accumulators for Hydrogen Stations

In FY2018, JFE Steel and JFE Container have commercialized Japan's first Type 2 accumulator*1 for hydrogen stations and it has been installed at the Toyota Toyoe Hydrogen Station in Aichi Prefecture. In FY2020, they also commercialized a cost-effective, large capacity Type 1 accumulator*2. The straight shape of the container creates microstructures with high resistance to hydrogen embrittlement*3, enabling the accumulator to offer industry-leading pressure range and longevity.

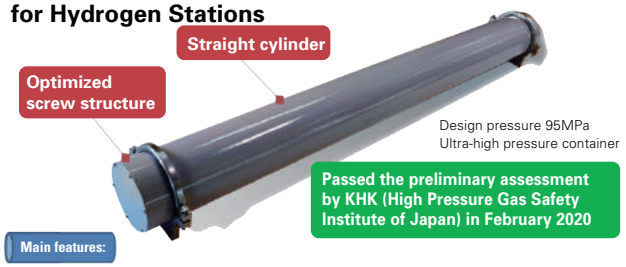
Type 1 accumulator can be manufactured in capacities ranging from 100 to 400 liters, while the industry standard for Type 1 accumulator capacity is 300 liters. The flexibility in accumulator sizes makes it possible to build hydrogen stations more closely tailored to customer needs and reduces construction cost. The Type 2 accumulator, on the other hand, has a wide pressure range and can supply large volumes of hydrogen all at once. Consequently, the accumulators are anticipated to have a role in fuel cell buses and hydrogen stations that require a large volume of hydrogen and therefore demand is expected to rise.

*1 Type 2 accumulator: A composite vessel accumulator with carbon fiber reinforced plastics (CFRP) wrapped around the body of a steel liner to achieve excellent properties. Part of the research and development undertaken by the JFE Group for the Type 2 accumulator was carried out under the NEDO's hydrogen technology research and development project (FY2013 to FY2017).

*2 Type 1 accumulator: A vessel produced using an extra-thick seamless steel pipe. Although Type 1 has a narrower pressure range than Type 2, it boasts a larger capacity and lower cost.

*3 hydrogen embrittlement: Deterioration of material's properties by hydrogen.

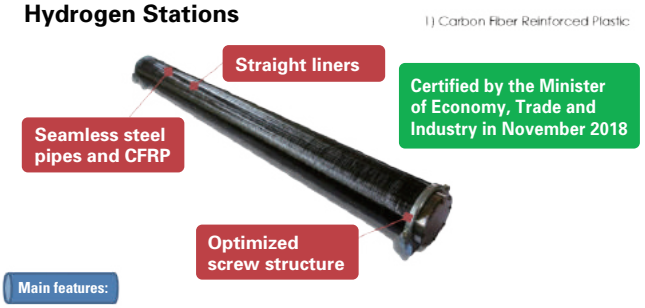
■ Large-capacity, Cost-effective Type 1 Accumulator for Hydrogen Stations



Main features:

1. By optimizing the screw structure, achieves a longer service life.
2. By using mass-produced seamless steel pipes for the body, achieves low cost
3. Option available to adopt non-destructive inspection to simplify safety inspections and thus lower the cost of running hydrogen stations

■ High Pressure Range Type 2 Accumulator for Hydrogen Stations



Main features:

1. Optimizing the screw structure for longer service life through the shared pressure resistance between steel and CFRP
2. Using mass-produced seamless steel pipes for the body for a lower cost
3. Maximizing the pressure sharing of the liner so that a smaller amount of CFRP is required, thus reducing the cost
4. Simplifying the liner manufacturing process and CFRP wrapping process by using straight liners, thus reducing the cost
5. Option available to adopt a non-destructive inspection to simplify safety inspections and thus lower the cost of running hydrogen stations

Toyoe Hydrogen Station

Calcia Improvement Material

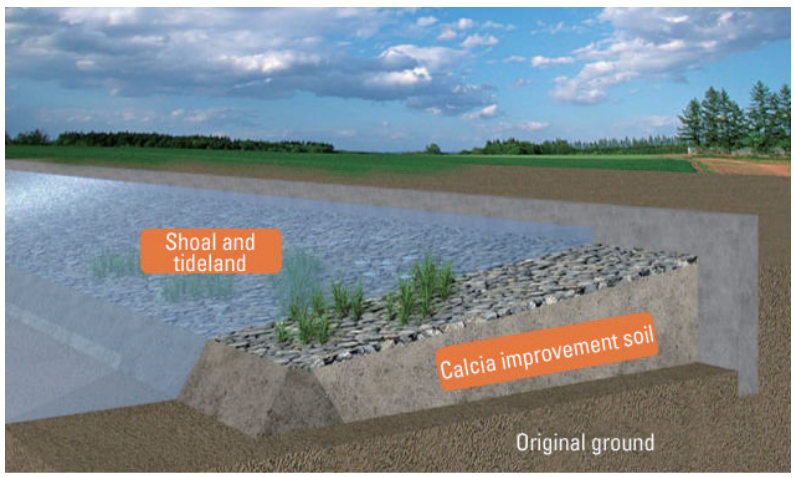
Calcia improvement material is a slag product, which uses converter type steelmaking slag as raw material and is manufactured by controlling composition and adjusting particle size. Dredged soil mixed with calcia improvement material is called calcia improvment soil, which is stronger than the original weak dredged soil, and therefore is able to prevent dredged soil from dissipating into the surrounding area and having a negative impact on the environment when put water.

This enables the use of weak dredged soil in land reclamation, shoal and tideland construction and refilling former dredging sites. In the construction of Shin-Honmoku Wharf in Yokohama Port, it was used as a material for the partition wall*.

*An embankment built under the water surface on the inside of a perimeter wall to divide the land into sections for reclamation.

■ Calcia Improvment Material and Calcia Improvement Soil

Dredged soil | Calcia improvement material | Calcia Improvement soil



Example of calcia improvement soil application (shoal and tideland construction material)

Steel Slag Hydrated Matrix

Steel slag hydrated matrix is a steel slag product that can be used as a substitute for concrete but uses ground granulated blast furnace slag instead of cement and steel slag instead of natural gravel and sand aggregate as its ingredients. It effectively uses steel slag and does not rely on natural aggregate, thereby reducing environmental impact, uses less cement and in turn reduces CO_2 emissions.

There are many examples of blocks and artificial stones made from steel slag hydrated matrix being used as a substitute for concrete blocks and natural stones in harbor works, including the runway D construction project at Haneda Airport by the Ministry of Land, Infrastructure, Transport and the coastal reconstruction project after the Great East Japan Earthquake. In addition, we are conducting onsite monitoring in the Katsunan Central Zone in Chiba port with the help of a local fishing association to assess the impact of these blocks on marine biodiversity.

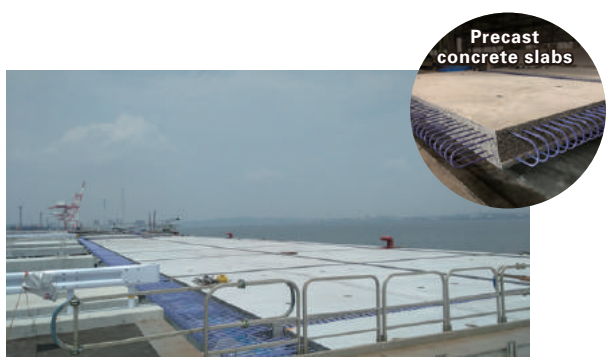
Wave-dissipating and foot protection block

Artificial stones made from steel slag hydrated matrix

Precast Concrete Products Mixed with Finely Ground Blast Furnace Slag

Finely ground blast furnace slag can be used as a cementing material in concrete. This type of concrete exhibits significantly higher durability under harsh conditions such as applications in sewers and exposure to anti-freeze agents. Its effectiveness in reducing environmental impact has been widely understood, although there has recently been growing interest in its practical applications for concrete constructions that require higher durability.

As one of the deliverables for the Japanese government's Strategic Innovation Promotion Program (SIP), the Japan Society of Civil Engineers published a (draft) guideline in March 2019 on the application of finely ground blast furnace slag to precast concrete product and its application now includes precast concrete slabs installed in highways and piers. With the application of finely ground blast furnace slag in concrete, the durability of precast products is expected to be greater and more consistent, allowing them to contribute to building national resilience.



Precast concrete slabs mixed with finely ground blast furnace slag installed in piers

Use of Granulated Blast Furnace Slag to Reduce CO_2 Emission

Granulated blast furnace slag in crushed and powdered form can be mixed with cement and used as a substitute for cement for making concrete. This leads to reducing the production of cement hence lower CO_2 emissions. For example, producing one tonne of blast furnace slag cement with 45% of its content substituted with granulated blast furnace slag emits 41% less CO_2 than conventional cement. In FY2020, JFE Steel supplied approximately 6.4 million tonnes of granulated blast furnace slag to cement production, equivalent to a reduction of approximately 4.55 million tonnes of CO_2 emissions.

■ **CO_2 Emission for Producing 1 Tonne of Cement (Unit: kg-CO_2 / ton)**

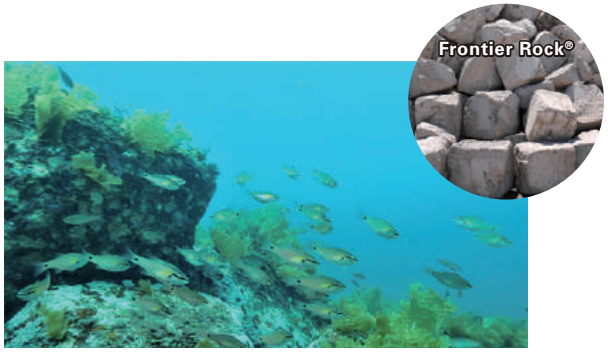
CO_2 Emissions Source	Regular Cement	Blast Furnace Slag Cement
Limestone	473	272
Electricity/energy	311	190
Total	784	463

Restoring Marine Ecosystems Using Steel Slag Products and Tackling Blue Carbon

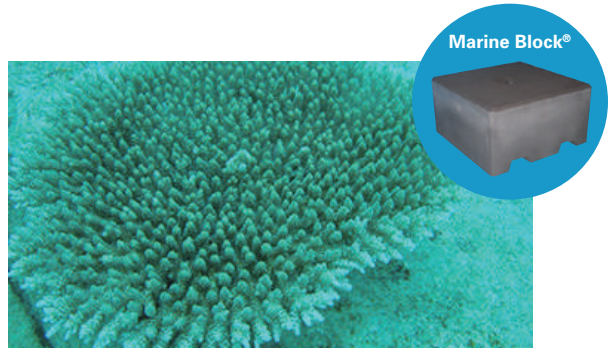
Marine Stone®, a steel slag with adjusted particle size, has the function of controlling the generation of hydrogen sulfide from the silty sediment in enclosed coastal seas and improving the environment where organisms can live its effectiveness in improving marine environments has been widely recognized, and the joint project with Hiroshima University received the Minister's Prize (Ministry of Agriculture, Forestry and Fisheries) in the 12th Eco Products Awards and the Grand Prize in the 26th Nikkei Global Environmental Technology Award.

Another steel slag product, Frontier Rock®, consists of artificial stones made from steel slag hydrated matrix and provides an excellent base for seaweed bed and fishing reef. A submerged bank built on the seabed off the coast of Minami-Izu Town, Shizuoka Prefecture, has successfully recovered fishery resources, attracting large perennial seaweeds and sawfish, as well as lobsters, turban shells, and a variety of fish.

In addition, we are focusing on blue carbon (carbon absorbed and fixed by marine organisms), which has been a field of active research in recent years. We are involved in creating seaweed beds using steel slag products, measuring the amount of carbon absorbed by the seaweed beds and testing Marine Block® as beds for corals.



School of fish attracted to the submerged bank made of Frontier Rock®

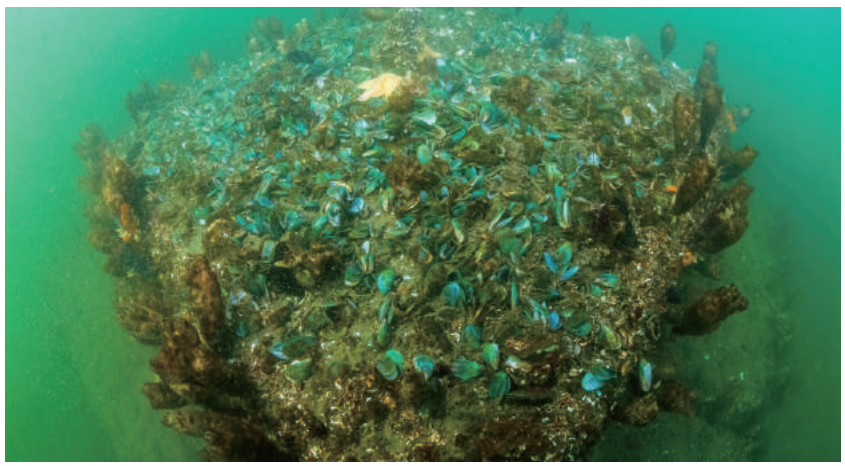


Coral growing on Marine Block®

Contributing to the Creation of an Attractive Seaside Town by Utilizing Steel Slag Products (Partnership Agreement with Yokohama City)

In a joint research project with Yokohama City, JFE Steel has confirmed that steel slag products, including Marine Block®, which is steel slag absorbing CO_2 gas, provide a highly effective base for nurturing and growing marine organisms while also facilitating the natural purification of seawater. To continue improving the marine environment in Yokohama Bay and developing an attractive seaside town, we signed a new partnership agreement* with Yokohama City in March 2020. Under this agreement, we have continued to work toward improving the marine environment.

*Partnership agreement to improve the marine environment in Yokohama Bay and develop an attractive seaside town



Marine Block® covered by marine bivalves (Yokohama Bay area)

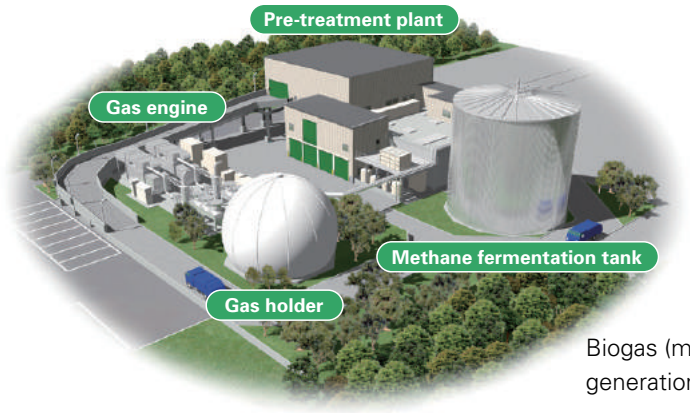
JFE Engineering

Food Waste Recycling Business

J&T Recycling Co., a subsidiary of JFE Engineering, is engaged in the food waste recycling business, in which food waste is collected and fermented to produce methane gas which is then used as fuel to generate power.

The company will promote its food waste recycling business and contribute to the expansion of renewable energy supply through J Bio Food Recycle Co., Ltd., which was established in 2018, Sapporo Bio Food Recycle Corporation (located in Sapporo-city, Hokkaido, acquired in 2019), Tohoku Bio Food Recycle Corporation (located in Sendai-city, Miyagi, established in 2019 jointly with East Japan Railway Company, Tokyo Gas Co. Ltd., Tohoku Railway Transportation Co. Ltd., scheduled to start operation in 2022), and Bios Komaki Co. Ltd. (located in Komaki-city, Aichi, acquired in 2020).

Company Name	Volume of Food Waste Processed	Estimated Amount of Electricity Generated (Annual)	Notes
J Bio Food Recycle Co., Ltd.	80 tonnes per day	11,000 MWh	In operation
Sapporo Bio Food Recycle Corporation	68 tonnes per day	1,470 MWh (2020 actual data)	In operation, also engaged in feed and fertilizer production from food waste
Tohoku Bio Food Recycle Corporation	40 tonnes per day	6,500 MWh	Scheduled to start operation in FY2022
Bios Komaki Co. Ltd.	120 tonnes per day	9,200 MWh	Scheduled to start operation in FY2022



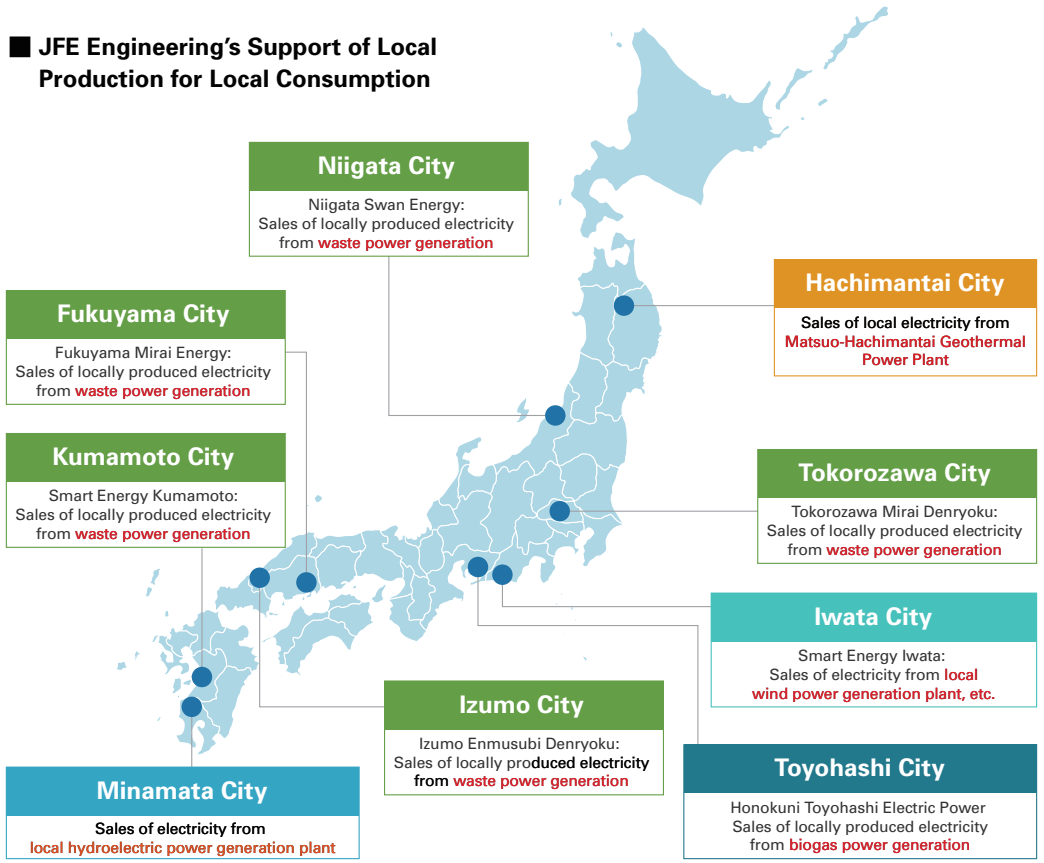
Biogas (methane gas) power generation facility

Regional Electricity Retail Businesses in Partnership with the Local Municipal Governments through Developing New Regional Electricity Businesses

JFE Engineering has established several regional electricity retail companies in partnership with local municipal governments. It is actively involved in the regional electricity business, with a particular focus on the distribution of renewable energy.

JFE Engineering is establishing frameworks for effectively using renewable energies such as hydropower and geothermal energy in regions and for supplying electricity from renewable energy plants constructed by JFE Engineering, such as waste-fueled, to regional public facilities. Through these efforts, JFE Engineering is supporting local production and consumption of electricity. These regional electricity businesses promote the use of renewable energy and decarbonization of the region while also reducing administrative costs and enhancing the region's industrial infrastructure.

■ **JFE Engineering's Support of Local Production for Local Consumption**



Integrated Plant Management System, J-Answer

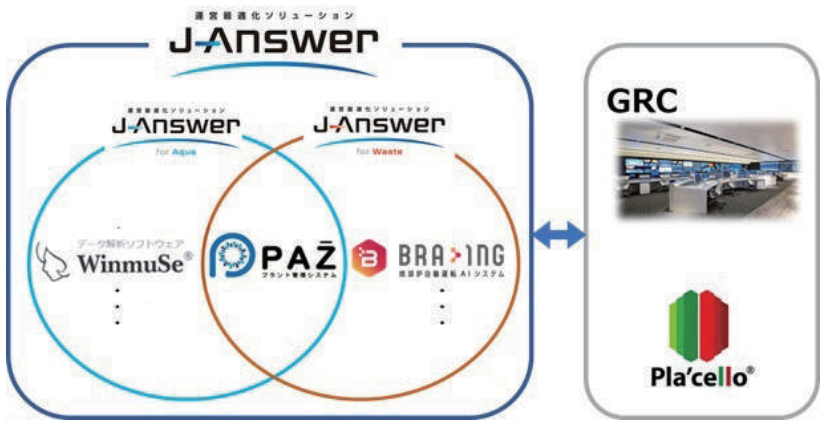
JFE Engineering has developed the following systems for more advanced plant operations, and is actively deploying them to ensure stable plant operation.

- Pla'cello: Data analysis platform which allows users with no specialized IT knowledge to leverage AI and big data
- PAZ: Plant operation management system that consolidates and utilizes operational data from environmental plants and is equipped with various functions including automatic report creation
- BRA-ING: Automated incinerator operation system that uses AI image analysis and other techniques to systemize incinerator plant operations that were formerly performed manually
- Global Remote Center (GRC): Remote center that consolidates data from operating plants nationwide, and monitors and operates them remotely

The company employs these systems for the operation of its own plants, and in 2019, became the first in Japan to operate a fully unmanned waste treatment facility.

J-Answer is a platform system that provides the ideal solution for full plant operation by linking systems that had been separately developed, sharing data between these systems, analyzing linked data, and so on. Using the vast knowledge acquired in construction and from operating a wide range of environmental plants, the company optimally combined operational elements that are common between these plants and those that are unique, to develop "J-Answer for waste" for waste treatment plants and "J-Answer for aqua" for water treatment plants. JFE Engineering will apply these systems to its plant operations and contribute to the realization of a recycling-oriented society. This will also help to reduce the impact of plant operations on the environment, thus contributing to environment preservation.

■ **J-Answer System Components**

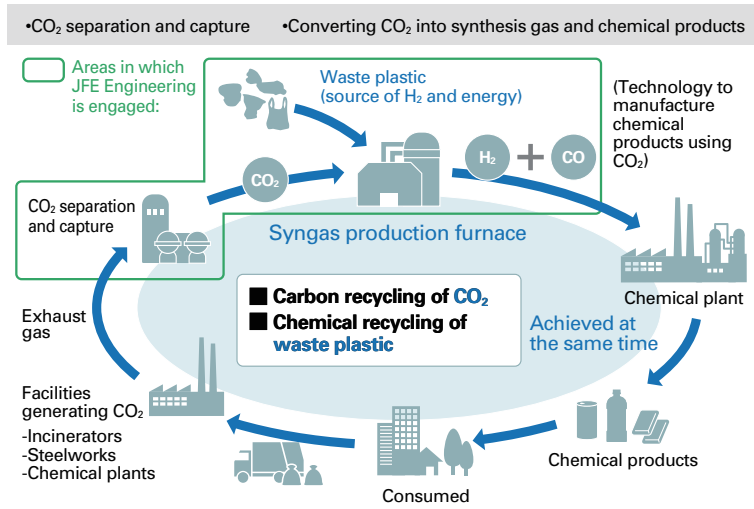


➤ **Integrated Plant Management System J-Answer (Japanese only)**
(https://www.jfe-eng.co.jp/news/2020/20201116.html)

Carbon Recycling Initiatives (CO_2 Separation and Collection, Waste to Chemical)

The JFE Engineering Group is already engaged in recycling plastic wastes, including bottle-to-bottle recycling for PET bottles. In addition, the Group is also developing a new technology that simultaneously achieves carbon recycling of CO_2 and chemical recycling of waste plastics. By developing technologies for separating and capturing CO_2 generated from incinerators and power generation facilities, as well as technologies for manufacturing chemical products using the captured CO_2, the Group will contribute to the realization of a low-carbon, recycling-oriented society.

■ **JFE Engineering's Carbon Recycling Initiatives**



Expanding Sewage Treatment Using Aerobic Granular Sledge Technology to Southeast Asia

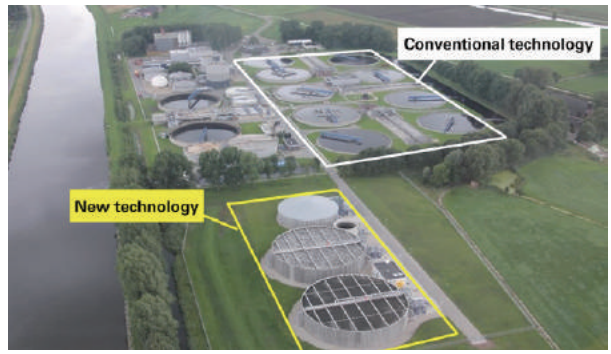
To meet the growing need for sewage treatment in Southeast Asia arising from rapid centralization of the population, JFE Engineering is expanding the application of Aerobic Granules method*, a compact, energy efficient wastewater treatment technology.

Traditional wastewater treatment uses activated sludge, composed of groups of microorganisms. Since it takes Activated sludge a long time until sedimentation and purified water separation, the final sedimentation basins of sewage treatment plants require a large area of land. Our technology, on the other hand, uses aerobic granules instead of muddy activated sludge. Their granular property enables them to settle much faster. Therefore, the process of decomposing pollutants in sewage and separating from the purified water is more efficient, and the treatment facility requires less space and energy. Typically, wastewater treatment using this method requires 50–75% less space and 40–60% less energy than conventional methods.

JFE Engineering has verified the effectiveness of this technology in the Philippines and now intends to introduce it to its sewage market and other Southeast Asian countries.

*Nereda® technology, owned by Royal Haskoning DHV (Netherlands). In 2020, it was recognized as the breakthrough technology of the decade in water treatment from a global perspective, and JFE Engineering signed an exclusive contract for the Philippines wastewater treatment market.

Sedimentation separation status after one minute (left: aerobic granular sludge, right: activated sludge). Microorganism-containing sludge at the bottom, purified water at the top.



Garmerwolde wastewater treatment facility in the Netherlands While the two facilities have the same processing capacity (70,000 m^3 per day), the one employing the new technology takes 60% less space than the conventional facility.

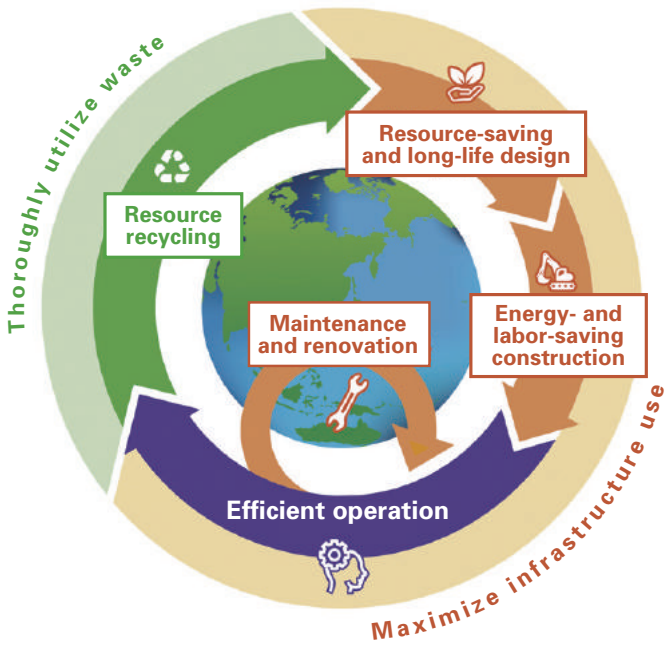
Contribution to the Circular Economy through JFE Engineering's Businesses

JFE Engineering offers a wide range of products and services to support infrastructure, including waste and renewable energy power generation plants, environmental plants that recycle food and plastics, water supply and sewage systems, and bridges. It is engaged in all parts of their lifecycles, from design and construction to operation, maintenance, and reconstruction.

In the business of constructing and operating waste-fueled power generation and various recycling plants, JFE Engineering seeks to thoroughly use waste as it implements various initiatives. Furthermore, in social infrastructure facilities, including these plants, the company focuses on maximizing their use through the integrated implementation of resource saving, long-life design, energy and labor-saving construction, efficient facility operations, effective maintenance, and renovation.

JFE Engineering engages in a circular economy and contributes to the realization of a sustainable society through efforts that leverage JFE Engineering's multidisciplinary businesses.

■ JFE Engineering's Approach to a Circular Economy



JFE Shoji

Further Expansion of the Global Supply Chain for the Steel Sheets Business

The key factor in initiatives for countering climate change, including those aimed at reducing CO_2 emissions, is minimizing electricity loss and using generated electricity without loss. Motors found in places such as power plants, factories and homes are responsible for 40–50% of all electricity consumed globally. In Japan, the ratio is approximately 60%. Improving the efficiency of motors by 1% in Japan that would contribute to the equivalent of a 500,000 kW-class power generation plant in energy savings.

Technological advances are expected in electrical vehicle's engine motors, for which demand is expected to rise as we transition to a decarbonized society, and in various types of motors for cars, which could be as many as 50 to 100 motors per vehicle. We also expect improvements in efficiency and further reductions in size and weight.

In addition, in order to minimize energy loss while distributing electricity from source to factories and homes, continuous improvement is required in transformers, where the most loss of electricity occurs, to make them more efficient.

JFE Shoji has established a stable global supply chain that sources high-quality electrical steel sheets which are essential for improving the efficiency of motors and transformers from JFE Steel and other manufacturers and processes the products for meeting customer needs. Customers who require high-quality electrical steel sheets, such as motor manufacturers and transformer manufacturers, typically operate manufacturing facilities across the globe. To align itself to this trend, the company has been expanding its electrical steel sheets supply chain based in a global quad-polar organization that includes Japan, America, China, and ASEAN. By further expanding its supply chain and processing capabilities and collaborations with alliance companies, the company is striving for significant improvements in the distribution and processing of electrical steel sheets, as described in the Seventh Medium-term Business Plan, and more thoroughly responding to customer needs.

Building a Supply Chain for Steel Materials and Processed Products for Offshore Wind Power Generation

Many countries are expanding their efforts to achieve carbon neutrality, and the use of renewable energy including wind power is seen as a key factor.

In Japan, Act on Promoting the Utilization of Sea Areas for the Development of Marine Renewable Energy Power Generation Facilities was enacted in 2019, and an environment for commercializing offshore wind power generation is being established. The Japanese government has announced plans to increase the share of offshore wind power in its power supply mix from 0.7% in FY2019 to 1.7% in FY2030, and the number of offshore wind power construction projects is expected to increase. Other Asian countries are also announcing offshore wind power projects. The JFE Group intends to pioneer in the field of offshore wind power generation, in the business of constructing foundation structures for wind towers and in their O&M, by building a supply chain that takes full advantage of all its operating companies.

JFE Shoji focuses on building a supply chain for the foundation structures for wind power generation towers. In Taiwan, which is leading in the offshore wind power generation market, the company is collaborating with a local enterprise that manufactures the necessary equipment, and accumulating experience in the supply chain of steel materials for offshore wind power. Looking ahead, it will further expand its supply chain and respond to the demand for offshore wind power generation in the ocean settings surrounding Japan, and thus contribute to the expansion of renewable energy.

Expansion of Biomass Fuel Trading

In response to growing demand for biomass fuels by biomass power generation companies, JFE Shoji imports palm kernel shells to Japan from Malaysia and Indonesia. In addition, as the trend toward reducing CO_2 emissions accelerates, demand for renewable energy is rising, especially for biomass power generation which is 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.

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.

PKS

Wood pellets

Expansion of Scrap Trading Helps in the Development of a Recycling-oriented Society

JFE Shoji'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 in general, timely shipments of small lots is now also possible due to the container loading system introduced by JFE Shoji, contributing to the development of recycling-oriented societies in Asia.

Efficient Use of Resources

Basic Policy

Economic growth in emerging countries is intensifying the need to conserve non renewable resources and prevent pollution. Iron can easily be separated and is thus highly recyclable. It can be recycled and reused to make other steel products infinite times (closed-loop recycling). The JFE Group is leveraging each Group company's strengths to enhance resource recycling through recycling co-products from iron and steelmaking, reducing waste at construction sites, and promoting the global recycling of steel scrap.

Promoting Resource Recycling

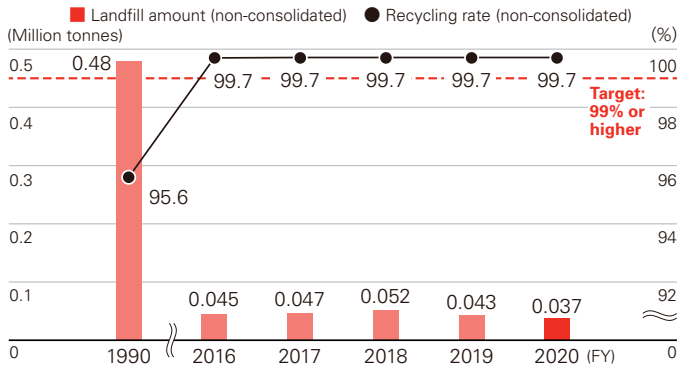
Each operating company of the JFE Group carries out resource recycling suited to its particular business. We continue to pursue increasingly efficient uses of resources in both the production and product/service phases of its businesses, including steel scrap recycling, biomass fuel production and waste-to-energy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

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

JFE Steel

JFE Steel carefully controls the generation and emission of iron and steelmaking slag (co-product), iron dust from blast furnaces and converters, sludge from water treatment facilities, and other coproducts. The target rate for recycling is 99% or more. Dust and sludge with high iron content are recycled as raw materials for steelmaking. Iron and steelmaking slag is effectively recycled for reuse in cement and other construction materials. We are also promoting their use as environment recovery material such as Marine Stone™, which works effectively as a base for the adhesion of organisms and for improving the marine environment. As a result of such efforts, the company achieved a 99.7% recycling rate for slag, dust, and sludge in FY2020, consistently maintaining the target of 99% or higher.

■ Landfill of Co-products and Recycling Rates



Group companies*	Amount released	—	0.776	0.539	0.792	0.546	0.513	(Million tonnes)
	Amount transferred	—	0.042	0.034	0.029	0.031	0.023	(Million tonnes)

*25 JFE Steel consolidated subsidiaries in Japan.

For more on quantitative data related to co-products, please refer to the following information.

➤ Environmental Data (P.198)

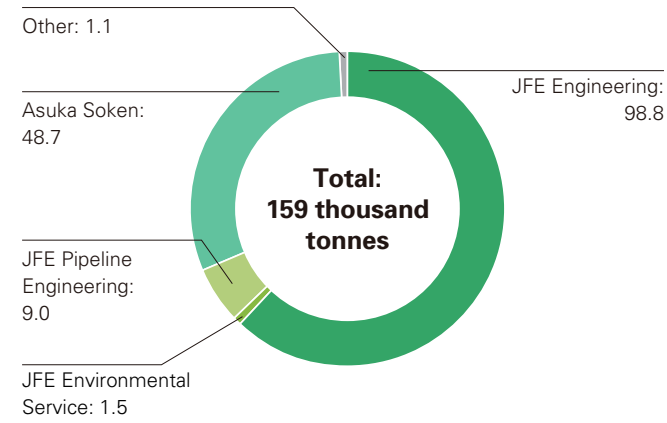
Promoting Recycling

JFE Engineering

Most of JFE Engineering's waste is either rubble and sludge discharged from construction sites or industrial waste discharged by the Tsurumi and Tsu works. We strive to reduce industrial waste and promote resource recycling through various measures, which include setting environmental goals for recycling rates and properly separating the waste on-site before sending it to disposal companies known for achieving high recycling rates.

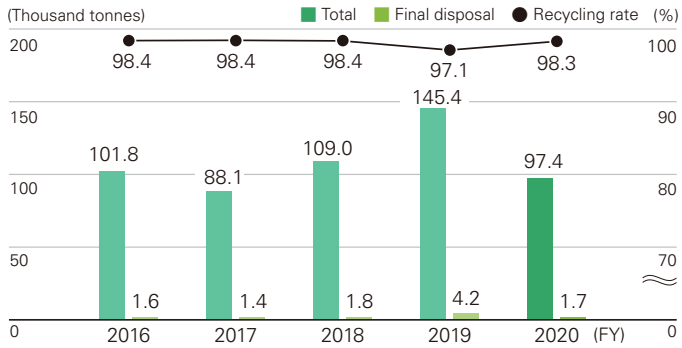
The Yokohama head office has been certified as a "Workplace with Excellent 3R Activities" by the City of Yokohama every year since FY2012. Its efforts are waste reduction (encouraging double-sided copying), reuse (setting up collection boxes for plastic folders and plastic business card cases and recovering label printer cartridges), and recycling (thoroughly separating waste). The JFE Engineering Group is also working to realize a recycling-oriented society through its PET bottle and food waste recycling initiatives.

■ JFE Engineering Group Waste Disposal for FY2020



Data cover JFE Engineering and 10 consolidated subsidiareisin Japan.

■ Waste Generated at Construction Sites



For more on waste generated at the steelworks, please refer to the following information.

➤ Environmental Data (P.198)

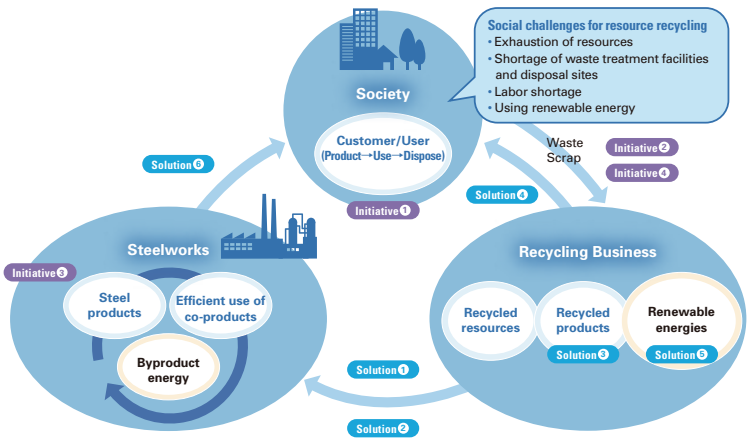
Resource Recycling Solutions

The JFE Group is involved in establishing a recyclingoriented society through a variety of initiatives. Steelworks promotes the efficient use of raw materials, water, and other resources in the process of iron and steelmaking in addition to encouraging the application of recycled resources such as used plastics for blast furnaces. Moreover, we are striving to more efficiently use co-products generated in the iron and steelmaking process through initiatives such as the international recycling of steel scrap.

In the engineering field, in addition to constructing and providing customers with waste incineration plants and plants for treating sludge, we are developing a waste recycling business and an energy supply business to offer resource recycling solutions.

For more on this, please refer to the following information.

➤ Development and Provision of Eco-friendly Processes and Products (P. 94)



Initiatives for Resource Recycling Solutions

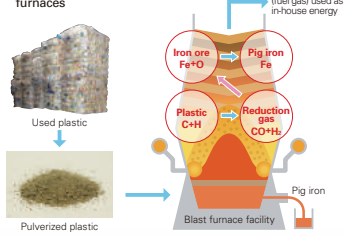
Resource Recycling Solutions

Plastic used in iron and steelmaking: 50 thousand tonnes!

Solution 1

Promoting the use of recycled resources

- Technology to inject plastic in blast furnaces

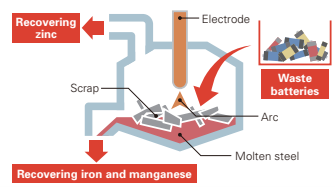


Accumulated amount recovered at JFE Bars & Shapes: 86 thousand tonnes!

Solution 2

Recycling resources

- Recycling used batteries through an electric furnace to separate metals such as iron, manganese, and zinc



Solution 3

Offering recycled products

- Recycled plastic products such as palettes and NF boards

Solution 4

Recycling

- Recycling fluorescent lights, batteries, home electronic appliances, etc. (treating hazardous materials for recycling)
- Recycling PET bottles to produce resins

Solution 5

Using renewable energy sources

- Waste power generation, biomass power generation
- Recycling food waste, biogas generation from sludge

Solution 6

Efficient use of co-products

- For cement material, etc.

Initiatives for Realizing a Recycling-oriented Society

Water recycling rate: 93.0%!

Rate of efficient use of co-products: 99.7%!

Initiative 1

Improving the iron and steelmaking process

In the iron and steelmaking process, promote the efficient use of raw materials and water resources, reduced generation and emission of co-products and reuse of co-products, and use of recycled resources and recycling of resources.

On-site recycling rate of industrial waste: 98.3%!

Initiative 2

Recycling/power generation business

Engaging in a power generation business using heat and gas produced when treating wastes.

Initiative 3

Improving the iron and steelmaking process

In the iron and steelmaking process, promote the efficient use of raw materials and water resources, reduced generation and emission of co-products and reuse of co-products, and use of recycled resources and recycling of resources.

Initiative 4

Global circulation of scrap

Contributing to the expansion of a recycling-oriented society at a global scale by efficiently recovering and transporting iron scrap.

Shared Initiatives

Develop resource recycling technologies and products

Develop technologies and products that efficiently use co-products generated in the Group's production process as well as wastes generated during social activities.

Collaboration with administrative entities

Established a new local-based power company in collaboration with an administration to promote local generation and local consumption of electricity through waste power generation, etc.

Water Security

Basic Policy

The JFE Group uses large quantities of fresh water for cooling and cleansing products and facilities in its core business of steel manufacturing. For this reason, the efficient use of water resources with due consideration to the source of the water and stakeholders in the area is a key challenge. In response, we have established a system for reducing water intake by maximizing the use of recycled water at our steelworks, and we manage the system by setting high goals for water recycling rates.

And while we have always taken measures against meteorological disasters such as droughts and floods at our manufacturing sites in Japan, we are further reinforcing them in anticipation of the increased frequency and severity of weather events associated with climate change by securing alternative means and raising the height of embankments. We also seek to identify water-related risks throughout our business sites and supply chain in Japan and overseas, such as the risk of drought at the source of water intake and pollution at the point of discharge. In areas under water stress, we will respond appropriately through dialogue with stakeholders.

Response to Water Risks

The JFE Group recognizes the issue of water resources as a risk that may significantly impact operations, and we have taken action against meteorological disasters such as droughts and floods. In recent years, we have been seeking to adequately identify and manage water risks based on the assumption that disasters due to climate change will increase in frequency and severity.

With regard to Group risk management, the JFE Group Environmental Committee, under the leadership of the CEO, who heads the JFE Group CSR Council, discusses, supervises, and guides Group-wide environmental initiatives, including the proper use of water resources.

As part of overall risk management, we identify, analyze and evaluate water risks based on past incidents of droughts and floods in the JFE Group's businesses, forecast data from the Meteorological Agency and results of our scenario analysis. In particular, we consider damage to business sites and disruption of the supply chain caused by restrictions on water intake due to droughts or increasing severity of meteorological disasters as key risks. In response, we are further reinforcing measures such as using recycled water, securing alternative means, and strengthening drainage facilities.

Furthermore, to ensure the stability of our steel business's procurement throughout its supply chain, we are striving to reduce risks by evaluating them based on past data concerning water-related disasters and results of scenario analysis for materials such as coal and iron ore, securing alternative routes of procurement and diversifying suppliers.

JFE Steel

Water Risks and Mitigation

JFE Steel identifies and evaluates water-related risks based on past incidents of damage caused by droughts and floods, forecast data from the Meteorological Agency and results of scenario analysis. We conduct a further evaluation of water risks around each manufacturing site from different perspectives by also using the World Resource Institute (WRI)'s Aqueduct, a mapping tool for evaluating overall water risks from droughts and floods in each region around the world. According to the WRI's assessment in June 2021, water risks for all of Japan are not designated at a high level or above, but there will be risks of water shortages and flooding due to weather conditions in the future (2030s and 2040s). JFE Steel identifies steelworks under such weather risks and takes measures such as business continuity planning.

Efficient Use of Water Resources

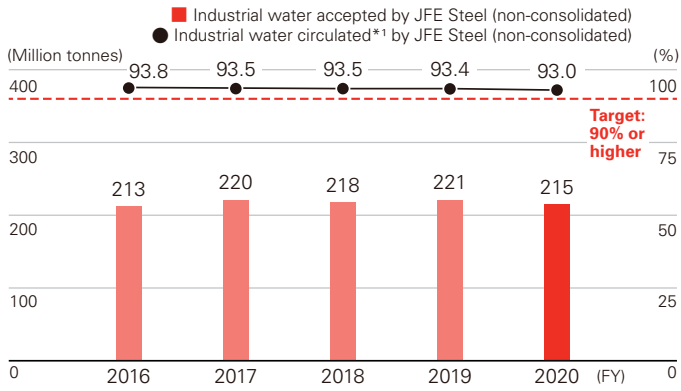
The JFE Group has established a system at each manufacturing site, including steelworks, for reducing water intake to maximize the use of recycled water, and each steelworks manages the system by setting goals for water recycling rates.

JFE Steel

Cyclic Use of Water

A large amount of water is used in the iron and steelmaking process to cool facilities and process products. The target water recycling rate at JFE Steel is 90% or more, which is extremely high considering the amount evaporated when water is used. We are striving to improve the recycling rate by adopting purification processes such as biological and chemical wastewater treatments, and we have been successfully achieving the target. Our recycling rate of industrial water in FY2020 maintained a high level of 93.0%.

■ Industrial Water Accepted/Circulated



JFE Steel

Total amount	3,414	3,410	3,376	3,323	3,066	(Million tonnes)
Industrial water accepted	213	220	218	221	215	(Million tonnes)

Group companies*2

Total amount	339	280	289	293	265	(Million tonnes)
Industrial water accepted	25	21	20	20	21	(Million tonnes)

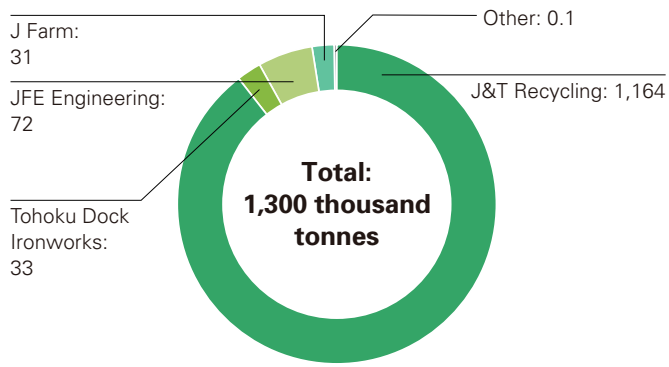
*1 Industrial water circulated (%) = (Total amount used – industrial water accepted)/total amount used ×100
*2 25 JFE Steel consolidated subsidiaries in Japan.

JFE Engineering

Water Consumption

JFE Engineering and its subsidiaries strive to efficiently use water in their business operations at each site.

■ JFE Engineering Group's Water Consumption for FY2020



Data cover JFE Engineering and 7 consolidated subsidiaries in Japan.

For more on quantitative data related to water, please refer to the following information.

➤ Environmental Data (P.198)

Prevention of Pollution

Basic Policy

The JFE Group regards co-existence and mutual prosperity with local communities, the global environment, and society at large as a critical managerial challenge in terms of business continuity. It strives to control air and water pollutant emissions and aggressively invests in environmental protection. Related internal controls and education are steadily being strengthened as well. Also, the transfer and widespread application of proprietary technologies, mainly in developing countries, contribute to pollution prevention on a global scale.

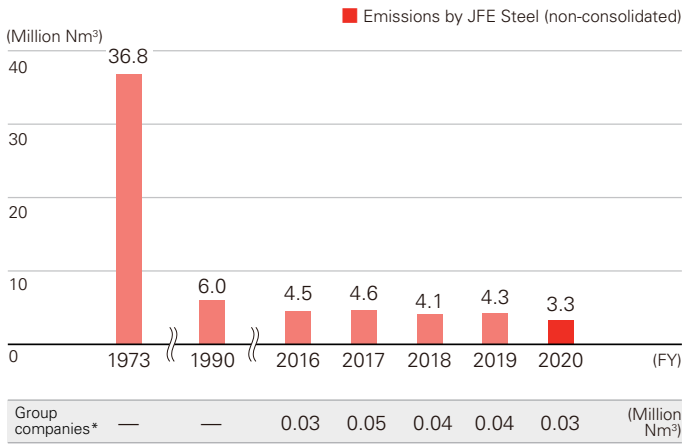
Controlling Air Emissions

JFE Steel

JFE Steel is controlling emissions by installing low-nitrogen oxides (NOx) burners in reheat furnaces, switching to low-sulfur fuels and deploying desulfurization and denitrationdevices in sintering plants, all major sources of sulfur oxides (SOx) and NOx emissions.

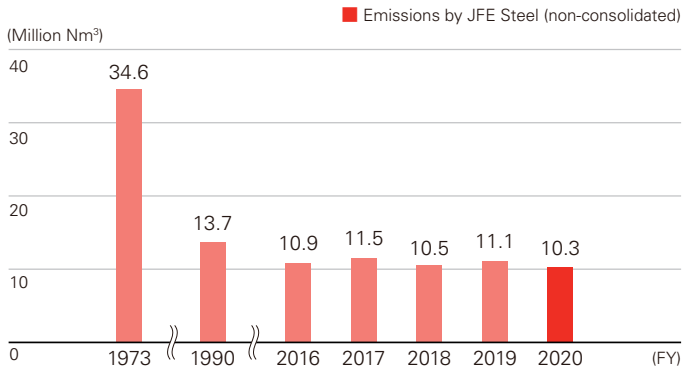
In addition, the company suppresses dust dispersion through measures that include enhancing on-site cleaning, installing sprinklers and windbreak fences in raw material yards, and improving the performance of dust collectors.

■ SOx Emissions



*13 JFE Steel consolidated subsidiaries in Japan.

■ NOx Emissions



	1973	1990	2016	2017	2018	2019	2020	
Group companies*	—	—	0.22	0.20	0.19	0.17	0.14	(Million Nm³)

* 13 JFE Steel consolidated subsidiaries in Japan.

JFE Engineering

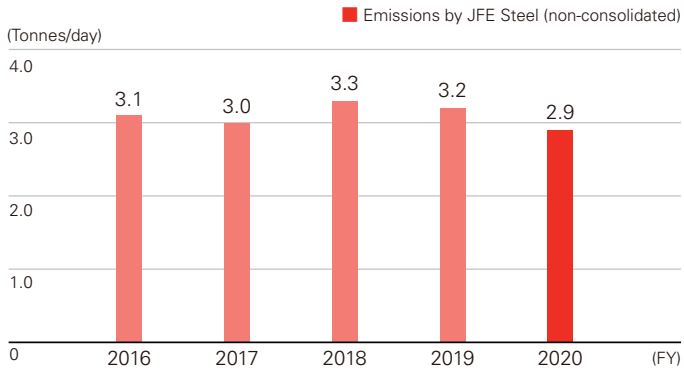
To ensure compliance with the Air Pollution Control Law and relevant local regulations, JFE Engineering properly manages facilities that emit soot and smoke, by regularly measuring NOx emissions, etc., at its Yokohama head office, Turumi works, and Tsu works. In addition, efforts are being made at construction sites to protect the environment through the use of construction machinery and on-site vehicles in compliance with the Automotive NOx and PM Law and Act on Regulation, Etc. of Emissions From Non-road Special Motor Vehicles (Off-Road Vehicle Law).

Preventing Water Pollution

JFE Steel

JFE Steel strives to reduce its environmental impact on waterways by thoroughly purifying water used in iron and steelmaking processes before releasing it into public waterways or sewers. The company has concluded agreements with the administrative entity in each area that set out more rigorous effluent standards, compared to those stipulated under the Water Pollution Prevention Act. It also established a strict voluntary control standard to improve water quality. For FY2020, chemical oxygen demand (COD), the water-quality index for wastewater, was 2.9 tonnes per day.

■ Chemical Oxygen Demand (COD)

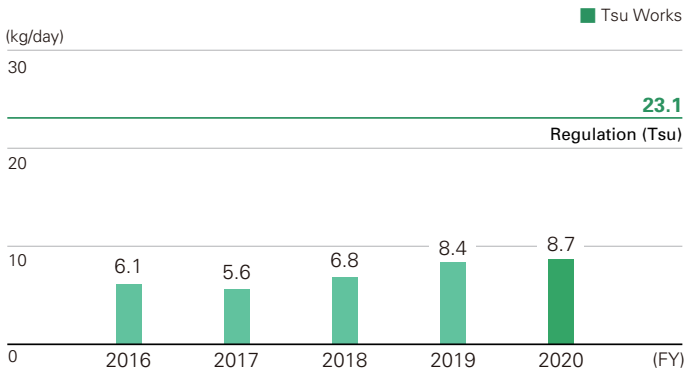


* 15 JFE Steel consolidated subsidiaries in Japan.

JFE Engineering

Wastewater from the JFE Engineering Yokohama head office, Tsurumi works, and Tsu works, is released into public waterways or sewer systems. Nitric oxide, phosphorus, and COD in the wastewater are measured on a regular basis and effectively managed in accordance with the Water Pollution Prevention Act and Sewerage Act.

■ Chemical Oxygen Demand (COD) in Wastewater Released Publicly



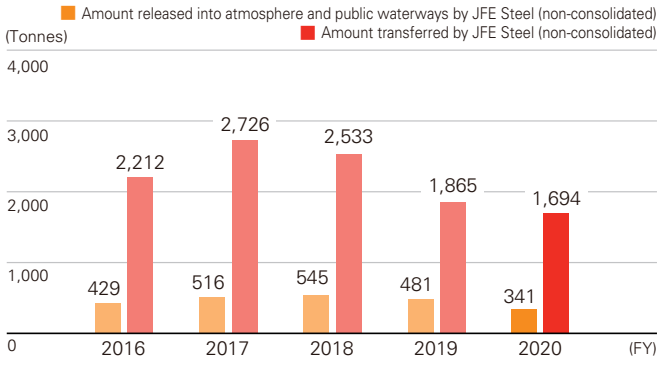
This report uses the maximum value of each year.

Management of Chemical Substances and Emission Control

JFE Steel

JFE Steel lowers its environmental impact by voluntarily reducing the chemical substances it releases. Release and transfer amounts of substances subject to Japan's Law concerning Pollutant Release and Transfer Register (PRTR Law) are reported in accordance with the law. In FY2020, chemical substances released into the atmosphere and public waterways totaled 341 tonnes.

■ Release and Transfer Amounts of PRTR-registered Substances at JFE Steel

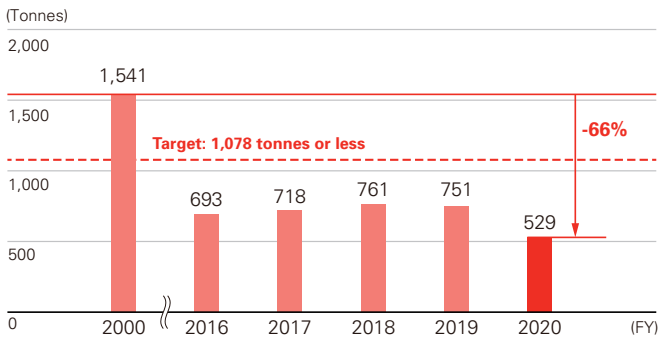


		2016	2017	2018	2019	2020	
Group companies*	Amount released	413	381	269	285	255	(tonnes)
	Amount transferred	4,835	6,208	6,643	5,967	4,216	(tonnes)

*18 JFE Steel consolidated subsidiaries in Japan.

The Japan Iron and Steel Federation formulated a voluntary action plan to reduce VOC emissions by 30% from FY2000 levels by FY2010. As part of this action plan, JFE Steel set a target for reducing emissions to 1,078 tonnes or less. As a result of our initiatives, we achieved a significant reduction that exceeded the 30% reduction target in FY2010 and have been consistently cutting VOC emissions, by more than 50%. We will continue with follow-up efforts to prevent any increase in emissions.

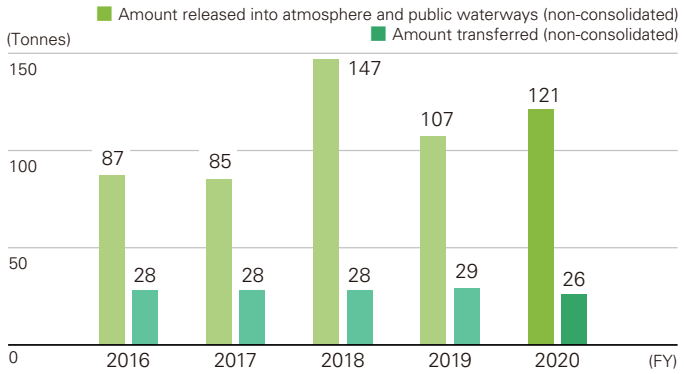
■ VOC Emissions



JFE Engineering

Major chemical substances subject to the PRTR Law for the JFE Engineering works in Tsurumi and Tsu include organic solvents such as xylene used for painting products, manganese and its compounds generated during welding. We report the release and transfer amounts of these substances in accordance with the law.

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



		2016	2017	2018	2019	2020	
Group companies*	Amount released	—	—	58.4	45.4	36.7	(tonnes)
	Amount transferred	—	—	5.7	5.4	12.5	(tonnes)

*4 JFE Engineering consolidated subsidiaries in Japan.

For more on quantitative data related to PRTR, please refer to the following information.

➤ Environmental Data (P.198)

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 J&T Recycling Corporation treat insulating oil contaminated with slight amounts of PCB, helping to reduce pollutants both in and outside the JFE Group.

Products and Technologies (Protecting the Environment)

For more on products and technologies related to environmental protection, please refer to the following information.

➤ Development and Provision of Eco-friendly Processes and Products (P.94)

Biodiversity

Basic Policy

The JFE Group recognizes biodiversity preservation as a key challenge and conducts assessments to minimize the ecological impact from business activities. Our initiatives include cooperating with the community to monitor biodiversity and carry out preservation activities around the steelworks, the key facilities for our business, and in surrounding areas. The Group is also involved in developing iron and steelmaking slag products that can help restore the marine environment. Furthermore, outside of our business operations, we launched a joint research program with the local government and are conducting environment-related training for local communities.

Initiatives to Preserve Biodiversity

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

JFE Steel

Environmental Impact Assessment

To minimize the ecological impact of our business activities on surrounding areas, we are monitoring biodiversity around all of our business sites and planting trees while also preserving rare species in the compound. An environmental impact assessment is conducted in accordance with laws and regulations before launching construction of a new manufacturing site or business. We assess the biodiversity of the surrounding areas as well as our premises to fully understand the situation and to implement the necessary measures for preserving the ecosystem.

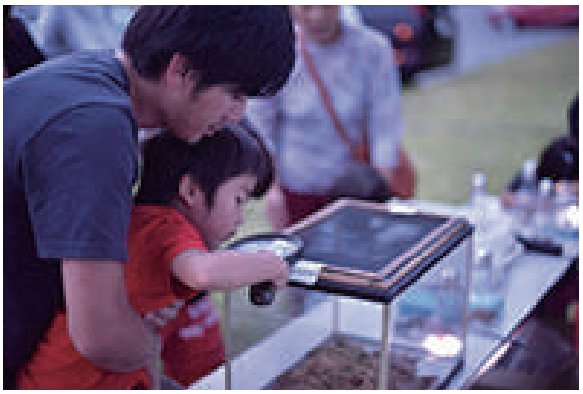
Replanted a Rare Species of Orchid Found at a Planned Construction Site

Plant No. 1 in the JFE Ohgishima Thermal Power Plant, an aging facility, was renovated and resumed operations in 2019. Before this construction, we conducted an environmental prediction and evaluation for the renovation, in accordance with the Environmental Impact Assessment Act and Electricity Business Act. As a result, the Kugenuma orchid, a plant listed in Japan's Ministry of Environment's fourth version of the Red List as an endangered species (Threatened II-Vulnerable, VU), was discovered at the planned construction site for power generation facilities. To preserve the orchids, we replanted them in a different location of the site that had a similar environment.

A Kugenuma orchid discovered at the planned construction site for the JFE Ohgishima Thermal Power Plant

Firefly Festival

JFE Steel has opened its Environment Pond at the Chita Works to the community for a firefly viewing festival every year since 2014. Children at the event have the opportunity to release fireflies. The Company is nurturing an environment that preserves the ecosystem together with the local community, through maintaining the watering holes and its surrounding environment within the steelworks site and these firefly viewing events.



Participants observing fireflies

Stream within the Chita Works site where fireflies are released

JFE Engineering

Initiatives in Relation to Construction Works

For large-scale construction or construction work carried out near watersheds or mountainsides, customers and/or the relevant authorities may conduct preliminary investigations depending on the importance of preserving the surrounding environment. Various preservation conditions may then be required, including the protection of living creatures.

JFE Engineering respect the proposed conditions and thoughtfully consider biodiversity preservation by keeping the impact of construction works at a minimum. For example, the company may propose a construction method that minimizes the impact of noise or drainage pollution. For its steelworks, the status of biodiversity on its premises and in surrounding areas are checked, and necessary measures are taken to ensure preservation.

Biotope for the Children's Learning Experience

JFE Engineering has conducted some renovation work at the JFE Dragonfly Path in the Tsurumi Works, and since 2009 it has been inviting children in the community to learn about the ecosystem at a biotope, Dragonfly Pond, located along this path.

In 2020, the JFE Dragonfly Path Fan Club, a group mainly composed of neighborhood residents, organized a research event that involved capturing dragonflies in order to learn about their ecology and the local environment.

Furthermore, in FY2020, JFE Engineering became a co-sponsor of the "How Far Do Dragonflies Fly" forum, with the aim of improving the quality of green spaces in the Keihin coastal areas and contributing to biodiversity. The forum brings together companies, residents, governments, and experts and conducts research activities such as capturing dragonflies that fly in 15 green spaces and biotopes scattered throughout the Keihin Coastal Area and inland areas, tagging them, releasing them, and tracking their movements. The JFE Dragonfly Path also serves as one of the research sites.

Endorsing and Participating in External Initiatives

As a member of the Keidanren Committee on Nature Conservation, the JFE Group endorses the Declaration of Biodiversity by Keidanren and Action Policy, and actively engages in the conservation of nature and biodiversity. It also participates in the Japan Business and Biodiversity Partnership and exchanges information with various parties, including NGOs, researchers, and public agencies.

For further details on external initiatives, please refer to:

- **The Keidanren Biodiversity Conservation Initiative** (http://www.keidanren-biodiversity.jp/logo_en.php)
- **The Japan Business and Biodiversity Partnership** (http://www.bd-partner.org/english/)

Products and Technologies (Preserving Biodiversity)

The JFE Group endorses and participates in the Challenge Zero initiative that is being jointly sponsored by Keidanren and the Japanese government. And we are collaborating with Yokohama City on a project that uses steel slag to improve the marine environment while also developing various products aimed at conserving biodiversity.

For more on products and technologies related to environmental protection, please refer to the following information.

➤ **Development and Provision of Eco-friendly Processes and Products** (P.94)

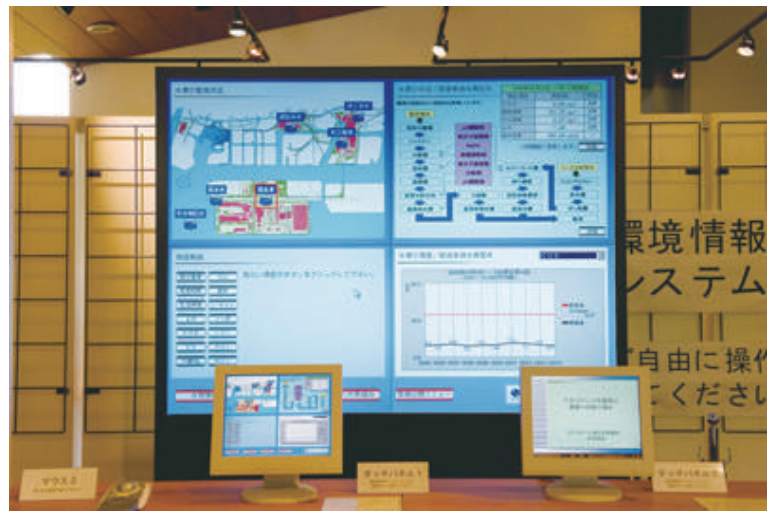
➤ **Challenge Zero** (https://www.challenge-zero.jp/en/member/34)

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 provides support to "ecobeing," a web magazine operated by KLEE INC., which disseminates information on the environment under the slogan "Let's talk more with the Earth!" The website series "ecopeople" has featured people from a variety of fields and also introduced JFE Group employees and initiatives. The summer 2021 issue featured "Firefly Festival" about the event organized by JFE Steel Chita Works and TABLE FOR TWO initiative in which JFE Shoji is participating as examples of the JFE Group's environmental and social contributions. The site introduces a variety of other initiatives focused on environmental themes as well. Please take a look at it to find out more.

Please see the following for further details.

- "ecobeing" (Japanese only) (https://www.ecobeing.net/)
- "Firefly Festival" (Japanese only) (https://www.ecobeing.net/ecopeople/2021_summer/04.html)
- Join TABLE FOR TWO (Japanese only) (https://www.ecobeing.net/ecotopics/#ecotopicsBI_3)

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.

Please see the following for further details.

➤ **"Midori no Komichi" Environmental Diary (Japanese only)** (https://www.midorinokomichi.net/)

Participating in the Environmental Exhibition EcoPro 2020 and the Tokyo Bay Thanks Giving Day 2020

The JFE Group exhibited its environmentally friendly products and technologies at EcoPro Online 2020, Japan's largest environmental exhibition, in November 2020. The theme of our exhibits was "JFE Technologies for a Sustainable Society – Produce → Use → Recycle." The event was held online in 2020 due to COVID-19. We also exhibited at the Eco Study Room Online, an environmental learning pavilion for parents and children, and elementary and junior high school students to introduce the JFE Group's environmental initiatives in an easy-to-understand manner. For the event, we also supported Green Cross Japan by running the EcoPro EcoKids Tour for children.

In addition, we showcased our efforts to revive marine environments using steel slags and our contribution to preserving biodiversity during Tokyo Bay Thanks Giving Day 2020, an event aimed at reviving the marine flora and fauna around Tokyo Bay and held in October.

Homepage of Eco Study Room Online

Introduction of JFE Group activities via Eco Study Room Online

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

JFE Group Standards of Business Conduct

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 for their quality management have been duly certified.

Strengthening Quality Assurance System

JFE Steel

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

The company's quality assurance system is 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 working to thoroughly eliminate human error and data tampering by automating each process, from conducting tests that include providing instructions on testing and collating specimens to the delivery of test results.

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.

JFE Engineering

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

For example, certified inspectors 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 either in person or remotely 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 uses an electronic document processing system in its quality inspections to prevent omissions in inspection data and data tampering, and it electronically stores all inspection data to reinforce traceability.

JFE Shoji

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

Ensuring Stable Supply

JFE Steel

Right up to the present day, JFE Steel has been strengthening its manufacturing base while bolstering the capabilities of the West Japan Works by maximizing its performance.

Under the Seventh Medium-term Business Plan, JFE Steel will pursue digital solutions to strengthen its manufacturing base. It will also boost yield by stabilizing quality such as through the full-scale introduction of quality prediction technology that utilizes data science based on integrated data, across the entire manufacturing process, from steelmaking to final processing.

Through these activities JFE Steel will stabilize facility operations as well as production and quality to continue providing high-quality products to customers.

JFE Engineering

As a licensed contractor undertaking mechanical, civil engineering, and construction work, JFE Engineering is required by the Construction Business Act to assign dedicated managing engineers at construction sites to oversee the technical aspects of construction work. The smooth implementation of plant construction projects depends on licensed specialists. The company is always striving to secure the necessary human resources by encouraging employees to acquire qualifications by granting expenses and through mid-career hiring of licensed personnel.

JFE Shoji

JFE Shoji will ensure stable supply by strengthening regional marketing channels, making capital investments for the Group and raising efficiency to realize an optimal system for sales and processing, and by conducting quality audits at Group companies to bolster its quality assurance system.

Improving Customer Satisfaction

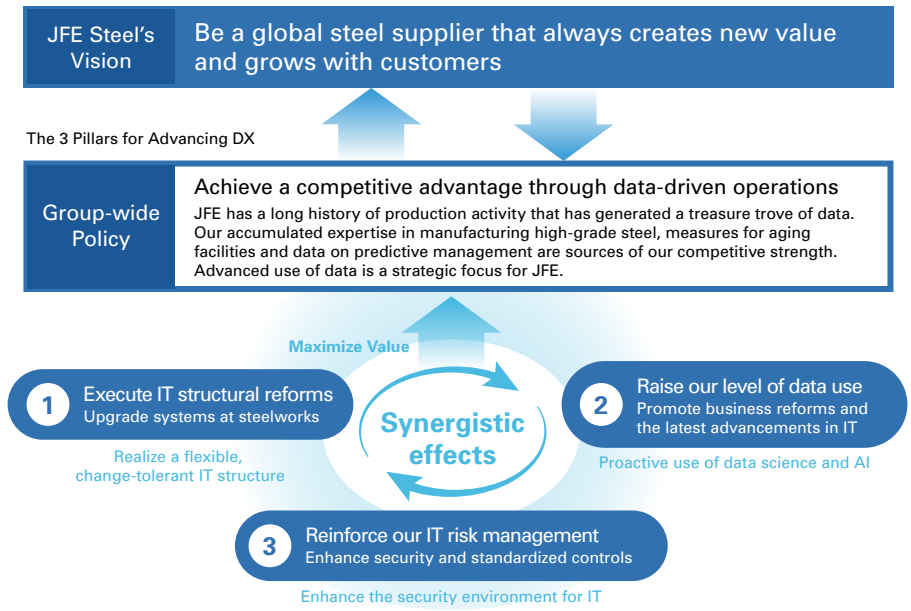
JFE Steel

Aggressive Advancement of DX

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

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

■ **Advancement of Digital Transformation (DX)**



Please see the DX REPORT.

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

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, the Steel Structural Materials Solutions Center (THiNK SMART) for infrastructure-related customers and the JFE Welding Institute -Center for Integrity against Fatigue and Fracture (JWI-CIF^2) are located in eastern Japan, while the Customer Center Fukuyama (CCF), which develops materials and conducts applied technology research, is in western Japan. Using these facilities to strengthen early vendor involvement (EVI)*enables the company to quickly identify customer needs and develop products based on cutting-edge evaluation techniques and innovative production processes.

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

Customers' Solutions Lab (CSL)

Enhancing Our Response to Customer Needs

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

Unified Customer Care

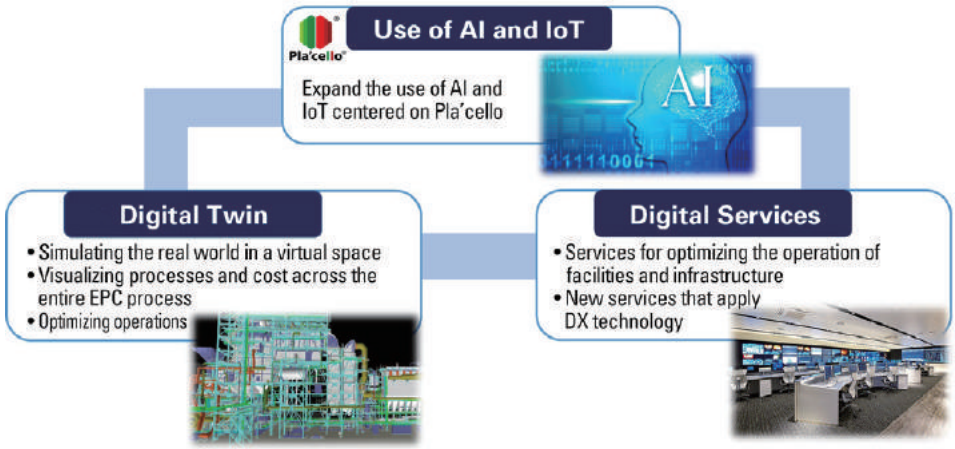
JFE Steel regularly conducts customer questionnaires and interviews to draft strategies for greater customer satisfaction. Business strategies are shared among the sales divisions, the business planning functions and steelworks to facilitate unified customer care and proposals that leverage the collective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

JFE Engineering

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

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

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



Please see the DX REPORT.

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

Engineering Company Assessments Based on Customer Evaluations

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

JFE Shoji

Meeting Customer Needs

To respond quickly to diversifying markets and increasingly sophisticated requests from customers, JFE Shoji is strengthening its entire supply chain from materials procurement to processing and distribution.

Recognizing that meeting customer needs requires proposals of a higher level than what they expect, the company also focuses on educating employees through training, in addition to actual practice and on-site experience for gaining knowledge and expertise.

Furthermore , it will take into consideration the implementation of DX into the steel supply chain as a means of providing a higher degree of innovative value to its customers.

For more details related to customers, please refer to the following information.

➤ Data on Training Related to Customer Care (P.220)

Responsible Export Practices

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

Promotion of Research and Development

JFE Steel

Under the Seventh Medium-term Business Plan, JFE Steel is promoting research and development of innovative technologies for the steel manufacturing process, such as CO_2 reduction technology, carbon-recycling blast furnaces and CCU, and hydrogen-based ironmaking (direct reduction) . These technological developments leverage data science and robotics to closely align with the needs of customers and society at large.

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

JFE Engineering

JFE Engineering develops technology as a company that creates and continues the foundation of life . In the area of creating infrastructure, the company has developed proprietary high-efficiency boilers for waste-treatment and power-generation facilities that realize stable, clean incineration treatment and generate power at the highest level of efficiency in Japan. In the area of supporting infrastructure, JFE Engineering continues to develop technologies that collect and analyze a range of data from the plants it operates in Japan as well as technologies that utilize AI to achieve optimal plant operation and automation. As for maintaining infrastructure, the company develops technology for upgrading and extending the operating life of facilities so that they are safe and secure for society into the next generation.

JFE Engineering plans to spend 21 billion yen in research and development over the four-year-period of the Seventh Medium-term Business Plan.

Internal Awards

The following technical and product developments were awarded in FY2020.

■ Internal Awards (FY2020)

	Prize/Award	Project	Recipient
JFE Steel	Excellence Award, JFE Steel President's Awards	Creation of a new overseas business scheme through business collaboration with JSW Steel	Global Business Development Division,Business Planning Dept., etc.
		Shift in the product mix through the development of manufacturing and sales system for roadbed material	Slag Business Planning Division, Planning & Marketing Dept., etc.
		Initiatives for maintaining and raising efficiency for land-based transport functions—Leading the industry (Japan Iron and Steel Foundation , trading companies and other companies) to break with longstanding business customs	Logistics Division, etc.
		Development of an integrated manufacturing system for the reliable supply and sales expansion of oil well pipes made of high-grade chromium steel	Products Service & Development Dept., Chita Works, etc.
JFE Engineering	Grand Prize, JFE Engineering President's Awards	Zero-coke operations for waste gasifying and melting furnaces —Major step toward commercialization of green technology	Environmental Solutions Sector

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

➤ External Awards (P.236)

Occupational Health and Safety

Initiatives on 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 suppliers, works to consistently maintain safe working environments and secure workplaces for all employees.

Under the Seventh Medium-term Business Plan, we will strive to achieve our goal of zero Workplace fatalities . In particular, we will prioritize safety investments (around 10 billion yen per year Group-wide) to reduce risks by making workplaces inherently safe. We will also promote multifaceted occupational employee health and safety, including monitoring and detection, by harnessing advanced IT solutions.

Efforts to ensure safety at the operating companies are regularly reported to the Board of Directors, which provides direction and supervision.

Data related to Lost-Work Injuries, see:

➤ **Data related to Lost-Work Injuries and Accidents** (P.220)

Training Programs for Health and Safety

The JFE Group organizes seminars for newly appointed managers and supervisors to provide information on the Industrial Safety and Health Act and risk assessment regulations and on formulating work plans and policies for health and safety management. In the construction operations department, we offer programs for local superintendents in charge of construction work (Overall Safety and Health Controller) centered on the Industrial Safety and Health Act as well as related regulations for subcontractors and the Construction Business Act (331 participants in 2020). We also conduct new employee training and position-specific training on mental health (749 participants in 2020).

Initiatives for Health and Safety by Business Segment

JFE Steel

In 2021, we are following two basic strategies: practicing autonomous safety activities while developing communication between employees and business associates and taking action based on the Group's Health Declaration. In accordance with our goal of attaining the highest level of competence in the industry, management supervisors make a point to visit work sites every day, while workers are striving to handle their tasks with discipline. We are also proactively applying IT, such as by introducing safety monitoring systems* for safety management.

To date, we have implemented safety activities based on the advice from Du Pont. We are going to develop these activities into an occupational health and safety management system in accordance with the ISO 45001 international standard as we seek to establish a corporate culture of safety that is voluntary and independent. We are working toward our goal of obtaining certification for all our construction and operating sites during FY2022.

To mitigate or prevent disaster risks, JFE Steel conducts risk assessments at the planning stage for new facilities as well as prior to their regular and non-regular repairs. We also constantly strive to make each facility safer so as to lower the risk level for our workers.

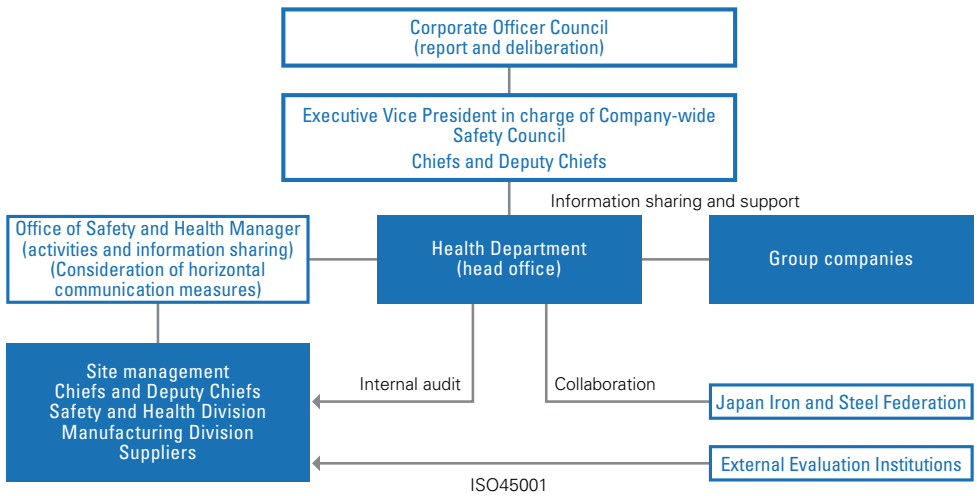
We respond to industrial accidents by setting up a disaster investigation committee to determine the cause and offer recommendations for improvement to the department in charge of implementing countermeasures. At the same time,

we inform the relevant departments and labor union through the Occupational Safety and Health Committee, while the department in charge implements and reports on countermeasures, which is a mechanism designated by company-wide rules. In the event of severe accidents, a response is deployed across the company, and a standard progress report is submitted to Corporate Officer Council until countermeasures have been completed. This practice has also been standardized across the entire company.

In addition, we immediately report accidents to the Japan Iron and Steel Federation (JISF) under the guidelines for reporting industrial accidents. We file an update once we have determined the cause and decide on countermeasures. We also promptly submit a report on safety, disaster prevention and environmental issues to the Ministry of Economy, Trade and Industry, the Ministry of Health, Labor and Welfare, and the JISF.

*A system that provides managers with information about, for example, carbon monoxideconcentration and oxygen concentration in real time along with the location information of workers.

■ Governance Structure for Health and Safety



JFE Engineering

In addition to setting up governance organizations for health and safety at each operating site to comply with the Industrial Safety and Health Act and in line with the type of work and number of employees, JFE Engineering has established a governance structure for health and safety at each operational headquarters to facilitate and effectively implement company-wide management at its construction and operating sites and manufacturing plants. JFE Engineering strives to eliminate disasters at all suppliers and Group companies by establishing priority items to be shared across the company and to which all employees and all staff at suppliers adhere. It also endeavors to identify sources of danger as well as safety measures through risk assessments aligned with the particular characteristics of each individual operational headquarters. Meanwhile, it promotes physical and mental health and the creation of comfortable working environments as a means of ensuring the health of employees and bringing occupational health to an overall higher level.

In the event that an industrial accident occurs, occupational health and safety managers will meet to determine the cause and consider countermeasures that will be deployed across the company. Since 2016, the company has been operating an occupational health and safety management system (ISO 45001 certified) for its construction activities in Japan and overseas as well as its manufacturing operations at the Tsurumi and Tsu Works. As a new initiative, JFE Engineering applies IT solutions promoting occupational health and safety, including monitoring and detection by multiple approaches.

JFE Shoji

JFE Shoji 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.

The company encourages compliance with rules among employees by implementing measures such as (1) risk assessment involving on-site patrols by management supervisors for identifying unsafe operations or hazard prediction by staff responsible for each operation, (2) comparative study of similar disaster cases and hazard experience training for improving the ability to recognize and avoid unsafe operations, (3) facility improvement for reducing risks, including installation of safety sensors, and (4) operation training (slinging for cranes and other skills) and review of operational standards.

Furthermore, for each of its Group companies, JFE Shoji assigns a safety manager to spearhead these efforts to raise the level of health and safety activities. To ensure that all JFE Shoji Group companies operate under the same values, safety managers meet every other month to share knowledge and information on occupational health and safety.

All lost-work injuries must be reported to the top management from the president of each Group company as part of the JFE Shoji Group-wide effort to address safety management. Annual safety awards are also presented to encourage employees to actively engage in health and safety activities. Through these initiatives, the company will raise the level of safety management within the JFE Shoji Group and continue to maintain safe working environments.

Employee Health

The JFE Group seeks to create safe, attractive environments where everyone can enjoy working and aggressively promotes the establishment of environments in which personnel with diverse backgrounds can demonstrate their full potential. To that end, it has developed the JFE Group Health Declaration and collaborates with its health insurance union and industrial health staff to strengthen employee health so that everyone can work with vigor.

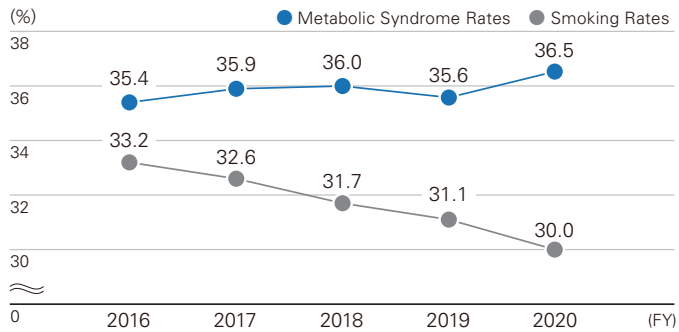
JFE Group Health Declaration

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

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.
- Utilize the health insurance union's health promotion app, PepUp, to educate employees on physical exercise and other healthy habits.
- 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



Maintaining and Promoting the Health of Employees' Families

The JFE Group works with the health insurance union to maintain and improve 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 to 46.3% in FY2020, up 8.7 points from 37.6% in FY2014.

For employee health data, please refer to the following information.

➤ Employee Health Data (P.222)

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).

Initiatives on Health Issues

We operate a health management system for effectively managing the health of all employees, including those on overseas assignments and business trips and those studying abroad.

We particularly seek to ensure that employees working abroad can maintain a healthy lifestyle, along with their accompanying family members, by conducting health checkups and vaccinations before they move overseas. In a proactive effort to prevent infections, we also provide information on global health issues such as COVID-19, HIV, tuberculosis and malaria during assignment briefings. We will continue to monitor and appropriately respond to global health issues.

JFE Steel

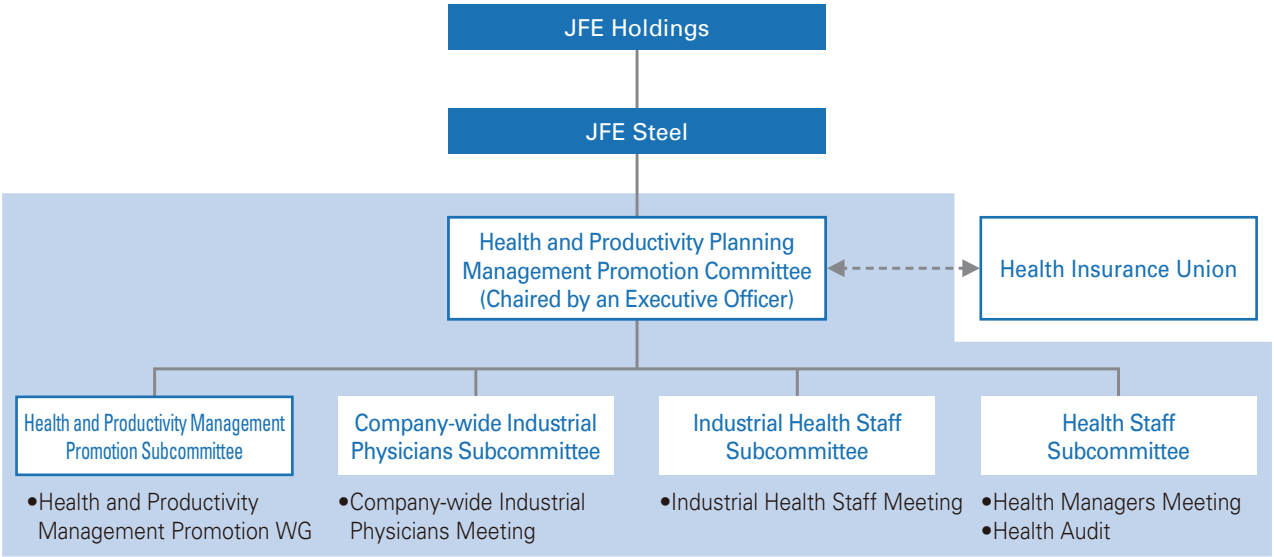
Development of the Health and Productivity Planning Management Promotion System, Company-wide Goals and Follow-ups

To drive initiatives regarding maintaining and improving the health of employees and their families, JFE Steel launched the Health and Productivity Management Promotion WG upon the establishment of its Group Health Declaration in 2016, and it is monitoring the achievement of medium-to long-term goals.

■ JFE Steel's Company-wide Targets (2021)

	Targets	2020 Results
Thorough implementation of physical examinations	Rate of complete exams: 100%	63.7%
	Rate of complete exams for dependents: 60%	48.0%
Preventive health Measures	Rate of providing specific health guidance: at least 70%	53.0%
	Rate of obesity (BMI: 25% or higher): 25% or less	30.2%
Promotion of non-smoking	Smoking rate: 27% (2% annual reduction)	29.0%

■ Health and Productivity Planning Management Promotion System



■ Health and Productivity Management Promotion WG

Members	• 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	• 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)	

Active Exercise

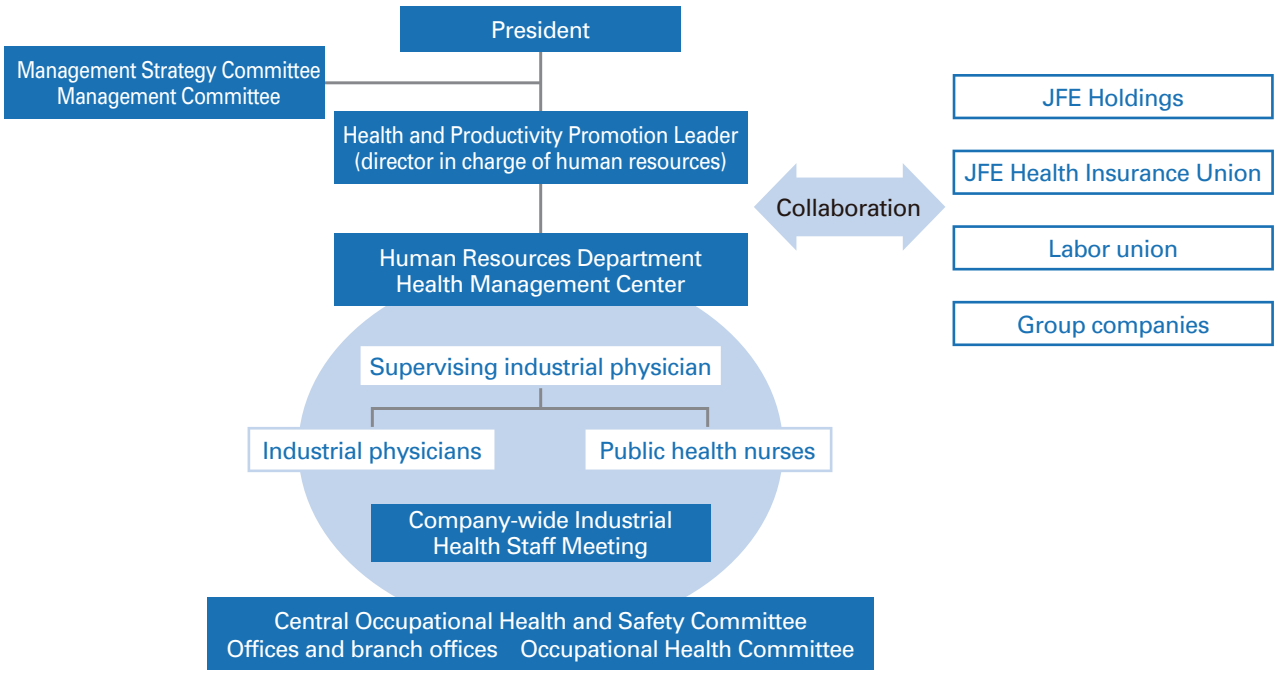
JFE Steel business sites offer the Active Exercise program, which the West Japan Works designed to help people increase their physical strength and prevent injuries due to falling. The program's effectiveness in preventing occupational accidents and improving health has even attracted attention outside the company, so it is being actively shared not only among Group companies but also with on-site suppliers and companies in a broad range of industries.

JFE Engineering

Engineering Activities for Boosting Health Based on Health Checkup Data

JFE Engineering is pursuing initiatives for improving health focused on five domains, including sleep, smoking and obesity issues extracted from past health checkup data, along with cancer and mental health.

■ Health and Productivity Management Promotion System



■ Initiatives Based on Past Health Checkup Data

Year Launched	Purpose	Initiatives
2018	Strengthen cancer checkups	Stomach endoscopy during regular health checkups
2019	Encourage a better understanding of health conditions to nurture awareness and promote behavioral changes	Interviews with public health nurses for all new employees
	Measures for preventing passive smoking	Designate the 22nd of each month as a day for making an effort to stop smoking
	Promote self-care among all employees	Self-care seminars to practice methods for raising concentration through short naps and breathing techniques
	Address obesity	Recommend increased physical exercise by displaying the calories consumed by climbing stairs and healthy strides
2020	Address obesity	RIZAP seminar co-sponsored by labor and management and doing workplace exercises for the home to address remote work conditions
2021	Measures for preventing passive smoking	Smoking prohibited in all indoor spaces

■ JFE Engineering's Company-wide Targets

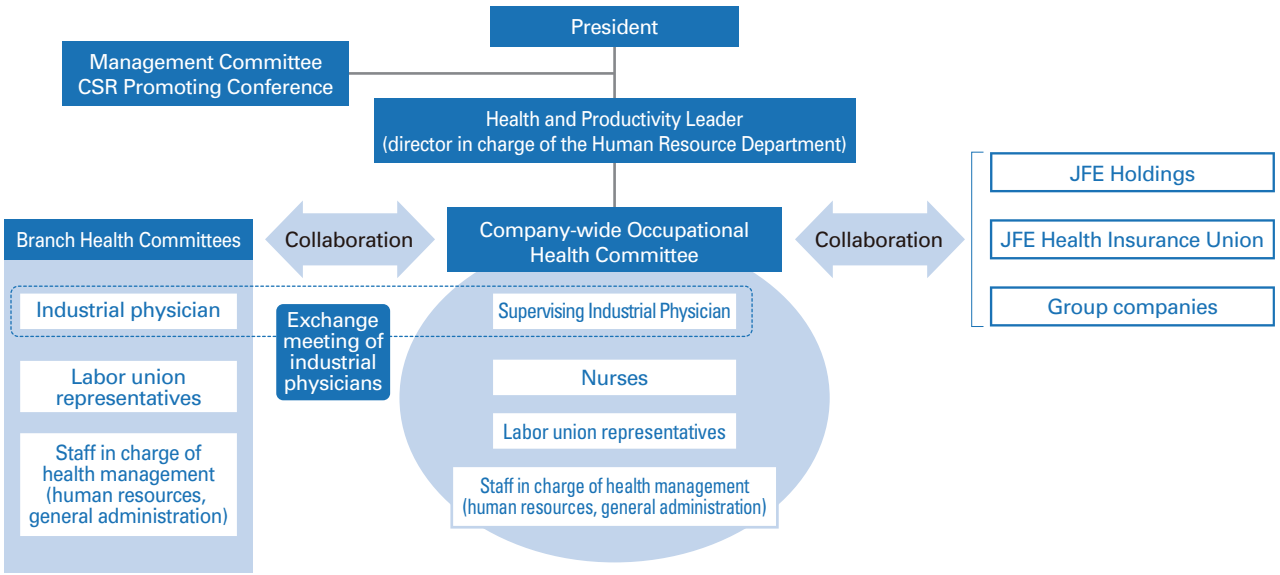
Key Domains	FY2021 Company-wide Targets	FY2020 Results
Measures related to sleep	Sleep-related risk: 35% or lower	37.2%
Measures related to passive smoke	Company-wide smoking rate: 22.3% or lower	23.3%
Measures related to obesity (preventing severe cases)	Obesity rate: 38.3% or lower Provision of health guidance: at least 40.0%	40.7% 39.1%

JFE Shoji

Detecting Illnesses at an Early Stage, Maintaining and Promoting Health for Employees and their Families

Based on the belief that the health of employees and their families holds the key to the further development for the company, JFE Shoji is working to create workplace environments in which employees can work with vigor.

■ Health and Productivity Management Promotion System



■ Past Initiatives

Year Launched	Purpose	Initiatives
2018	Prevent cancer	Helicobacter pylori tests conducted during regular health checkups
		New program for subsidizing examination fees for breast cancer and uterine cancer
	Raise employee health awareness	e-learning program conducted on the importance of regular health check-ups and heart and brain disease
2019	Prevent lung cancer and stroke Measures related to passive smoke (reduction in smoking rate)	New program for subsidizing smoking cessation clinic fees
2020	Encouraging employees to exercise as a habit	Encouragement for participation in the Powering Up Health Care program

■ JFE Steel's Company-wide Targets

Category	FY2021 Goal	FY2020 Result
Rate of providing specific health guidance	50% (FY2023 goal: 60%)	41.6%
Rate of complete health examination for spouses	60%	53.2%
Smoking rate	23.9% (1% annual reduction)	24.9%

Response to the COVID-19 Pandemic

The JFE Group is addressing the COVID-19 pandemic through a variety of measures against infections from the perspectives of securing the health and safety of employees as well as avoiding business continuity risks. Each company practices thorough health management, including the wearing of masks, washing and disinfecting hands and monitoring body temperature. We also encourage teleworking as much as possible and promote off-peak commuting based on flexible workstyles without setting core work hours. We have installed partitions in offices and conference rooms, have been limiting the number of persons entering each room, and are also promoting online meetings in addition to other measures for avoiding crowded conditions.

Nonetheless, the steelworks and waste incineration facilities of JFE Steel and JFE Engineering must continue their operations even under a state of emergency, and the following measures are taken to prevent infection.

We minimize the number of participants attending meetings required for safety and operational management by dividing them into groups while also taking care to avoid gaps in communication with regard to necessary information. During these meetings, we seek to avoid crowding while providing adequate ventilation, limiting attendance to the absolutely necessary number of personnel and maintaining distance between participants. We also adhere to industry guidelines and conduct thorough daily checks of employees' physical conditions.

In the lounge areas, we place vinyl sheet partitions at the center of the table to avoid that people do face each other while sitting. Each work site is striving to avoid physical contact by adopting measures such as creating push-rods bearing employees' names for pressing the buttons of drink servers.

Other measures include limiting the number of employees coming to work by dividing them into three groups to stagger commuting.

In addition, to prevent infections from spreading and contribute to reducing the local government's burden of conducting vaccinations, we have been actively cooperating with the workplace vaccination program. We have applied to have about 23,000 people affiliated with JFE Holdings inoculated and are proceeding with vaccinations at each operating company.

On-site meeting

Group meeting

Labor Standards (Recruit and Nurture Diverse Human Resources)

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 business 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.

Posters displayed at each workplace

Workstyle Reform

To ensure the sustainable development of the JFE Group, it is essential to fundamentally review past customs and develop workstyles that enable each employee to be highly productive in creating new value with pride and satisfaction in their work. Under the Seventh Medium-term Business Plan, we intend to continue building workplace environments and internal systems that enable employees to fully demonstrate their abilities with a sense of security and safety.

JFE Steel

Promoting a New Workstyle (Smart Work JFE)

To address its varied management issues, JFE Steel is accelerating its efforts to enhance productivity and will meet the diversifying workstyle needs of employees.

As society responded to the state of emergency declared under the COVID-19 pandemic, new lifestyles and workstyles became widespread. This was also true at JFE Steel, where employment styles that combine working at the office and at home have become applied, mainly at the head office and branches. Employee values on workstyles have also significantly changed. Seizing this as an opportunity to move beyond its response to COVID-19, JFE Steel is promoting its new workstyle (Smart Work JFE) to maximize employee productivity and output and to enhance engagement. In concrete terms, we will promote teleworking by expanding our work-at-home systems; introduce chat and web conferencing tools and robotic process automation (RPA), a software program that facilitates the automation of work done on terminal devices; promote paperless offices; eliminate the use of seals by applying workflow automation software; introduce a coreless flexible working hour program to shift to a workstyle with higher added value; and transform our corporate culture.

In addition, JFE Steel seeks to enhance the work-life balance by encouraging employees to take paid leave by designating annual planned leave days and offering a work-life-balance vacation program to support employees in taking vacations for personal life events, self-enlightenment, or participation in volunteer activities.

JFE Engineering

Enhancing Productivity with New Workstyles

JFE Engineering is promoting “vacation-style reform” across the company. Employees are encouraged to take Fridays off during the summer and consecutive days of paid leave following the completion of construction work. Out of 22 paid leaves granted, 17 paid leave days on average were taken by employees in FY2020. The company intends to raise this number to 20 in FY2021.

As part of its workstyle reform, JFE Engineering has introduced a flexible working hour program for offices, in which employees determine their own core work hours. Under this program, the company designates days on which employees must leave the office on time and in principle prohibits overtime work after 8 p.m. to encourage employees to more efficiently use time. Teleworking, which was introduced as a preventive measure against COVID-19 infections, was adopted as a permanent system from FY2021. Employees can work at home or at any of the roughly 400 shared offices nationwide, thereby supporting flexible workstyles.

In the area of construction, JFE Engineering is making greater use of IT at construction sites and expanding operational support provided by the back office to fully adopt a five-day workweek.

JFE Shoji

Initiatives to Support Various Workstyles to Realize a Work-life-balance

As a measure to realize a work-life-balance, 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 designating days when employees are encouraged to take paid leave.

To support more diverse workstyles, JFE Shoji changed its flexible working hour program in April 2016 by setting the core worktime between 11 am to 2 pm, and by introducing work-at-home systems for employees pressed for time due to childrearing or nursing duties. The company also implemented a program called Challenge Days as a trial, in which employees can experience teleworking and shared offices, regardless of their time constraints.

During the COVID-19 pandemic, JFE Shoji has been flexibly applying its system, which includes expanding eligibility for working at home to all employees and temporarily adopting a flexible working hour program without core hours. Looking beyond COVID-19, the company set up a project team to explore new workstyles that are even more efficient and flexible, and it will consider promoting paperless offices based on digitization and developing offices that meet the needs of the new normal.

Operational Reforms

JFE Steel

Promoting Operational Reforms that Leverage the Newest ICT

To reduce employee time spent on simple for repetitive tasks and free up more time for creative work, JFE Steel implemented RPA, a software to facilitate the automation of human work done on terminal devices.

As of FY2020, RPA was deployed in over 300 types of operation, releasing over 49 thousand hours to be spent on other productive work.

In FY2021, JFE Steel will expand the scope of in-house development it began in the latter half of FY2020 to speed up its response to further labor savings and changes in operations to boost competitiveness.

JFE Steel is pushing ahead with a companywide project launched in FY2016 to upgrade mission-critical systems at each steelwork toward promoting operational reform as well.

The company will actively engage in operational reform by leveraging the newest ICT and use the time generated by the operational reform to improve customer service.

JFE Engineering

Smart-Work Project

JFE Engineering has been steadfastly developing workstyle reform, spearheaded by the Office of Smart-Work Promotion set up in FY2018.

Prior to turning remote work into a permanent system starting in FY2021, the company introduced an electronic seal system for all employees to eliminate the need to come into the office to apply the seal. As a result, more than 10,000 documents were digitized each month, reducing paper use by 40%. In addition, RPA, used to automate 211 tasks as of FY2020, and automatic translation tools increasingly being used by overseas divisions, have also contributed to raising operational efficiency.

By introducing various systems, measures and tools to boost efficiency, JFE Engineering aims to achieve both work-life-balance and improved productivity while maximizing overall output.

JFE Shoji

J-SLIM Activities

JFE Shoji will continue to drive its J-SLIM activities, which is an operational reform aimed at increasing work efficiency and performance. Introduced in 2018, RPA is now being applied across the company to effectively improve productivity, demonstrating results such as reducing the time taken for operations by 46,000 hours per year, or 3,800 hours per month, through automation, and expediting the provision of services. The company is also focusing on developing new work environments using the latest IT tools to digitize internal processes. Spurred by dramatic changes in the business environment that began in 2020, it will further accelerate the pace of its operational reforms toward developing new workstyles in line with the changing times to create a corporate culture that encourages continuous innovation.

Invigorating Workplaces through Small Group Activities

JFE Steel

JFE Steel has approximately 1,500 small groups that carry out J1 Activities* that have yielded various results in the key areas of quality and work improvement. In addition, the JFE Family Result Reporting Conference, which includes participation from Group companies, is held twice a year, and groups that excelled in the competition are dispatched to QC Conventions and affiliated companies in Japan and overseas to strengthen the J1 Activities.

*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 and J1 Activities at JFE Steel and JFE Shoji).

JFE Engineering

JFE Engineering has about 160 teams and 1,400 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.

JFE Shoji

JFE Shoji has been conducting J1 Activities in production divisions of its group 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 report their activity results and awards are given to the highest achieving teams. The company will continue to promote J1 Activities to improve workplace vitality and improve problem-solving skills. The result of these activities are shared among Group companies.

Workforce Diversity

By designating workforce diversity as a key business objective and to address the ever-evolving business environment, the JFE Group is promoting efforts under the Seventh Medium-term Business Plan to maximize the potential of employees regardless of gender, nationality, creed or lifestyle.

Given the growing need in recent years to ensure diversity among managerial personnel, it is becoming increasingly important to secure diverse and excellent human resources, including women, foreign nationals, and mid-career recruits.

Structure for Promoting Diversity

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 Diversity Initiatives at Each Operating Company

JFE Steel

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. About 400 women currently work on-site at the steelworks, mainly in workplaces that operate in shifts. To meet needs associated with childbirth and childcare, workplace nurseries have been set up in four areas in Eastern and Western Japan by 2019. In FY2020, the company established a program for helping employees maintain their work-life balance by discussing their career development through interviews with their supervisor and the personnel division. In this way, JFE Steel is creating a workplace environment in which women can continue working after childbirth or periods of childcare or nursing care.

The company intends to further expand areas in which women can advance their careers by organizing training for employees about to take on managerial positions to strengthen the required skills and by formulating individualized career assignments and development plans to respond more closely to their needs.

JFE Engineering

JFE Engineering engages in activities for reforming its corporate mindset, including diversity seminars for managers, e-learning programs for all employees and the annual Diversity Month. In FY2021, a Diversity Committee comprising the management team was established to deploy company-wide policies and set targets for each organization. For female employees, the company organizes leadership seminars and opportunities for exchange. It also accepts around 80 locally-hired employees of overseas Group companies at any given time to provide on-the-job training. The company also strives to create an environment in which workers can spend their time in Japan with a sense of security, by launching a helpdesk on daily matters for non-Japanese nationals, offering information through a portal site and providing Japanese language classes. Every year in Japan, JFE Engineering actively hires around 70 mid-career recruits possessing diverse characteristics and values, such as those with experience in other industries.

JFE Shoji

JFE Shoji intends to foster a corporate culture that embraces and utilizes diverse human resources and workstyles by implementing diversity seminars for top management and diversity management seminars targeting managers, including managers at Group companies.

JFE Shoji also strives to support women's career development, which includes providing a mentor program for new female employees in career-track positions and seminars for next-generation female leaders. In June 2021, it received the three-star Eruboshi certification from the Ministry of Health, Labor and Welfare in recognition of its excellent initiatives for promoting women's career development.

To ensure that women can continue working after childbirth or periods of childcare or nursing care, the company organizes information exchange meetings for employees on maternity leave and follow-up seminars after they return to work.
It also fosters global human resources and promotes exchange through measures such as management seminars in Japan for national staff at overseas bases for promoting them to leadership posts, creating an environment in which diverse human resources can pursue their careers with vigor.

Supporting Women in Professional Development

Formulation of an Action plan for Promoting Women's Professional Development

The Act on Promotion of Women's Participation and Advancement in the Workplace went into effect on April 1, 2016.

The JFE Group has designated the promotion of workforce diversity as a key management strategy for maximizing the potential of every employee and has been actively hiring and supporting the advancement of female employees.

In our latest move, we formulated the following action plan in accordance with the Act to establish a work environment that encourages female employees to demonstrate their abilities and create satisfying workplaces for all employees.

Action Plan Period

Period of five years starting on April 1, 2021 and ending on March 31, 2026

Target of the Action Plan

JFE had set a common Group goal of tripling the number of female officers and managers from levels in August 2014 by 2020. However, we were able to attain this goal in advance by April 2019.

We have already set a new goal of increasing the number of female officers and managers five-fold from levels in August 2014 by 2025, and we will continue to promote women to managerial positions.

Action Plan for Each Operation Company

➤ JFE Steel (Japanese Only) (https://www.jfe-holdings.co.jp/csr/pdf/female_plan_st.pdf)
➤ JFE Engineering (Japanese Only) (https://www.jfe-holdings.co.jp/csr/pdf/female_plan_eng.pdf)
➤ JFE Shoji (Japanese Only) (https://www.jfe-holdings.co.jp/csr/pdf/female_plan_shoji.pdf)

Initiatives for 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.

Furthermore, the initiatives and issues faced by each company are shared among operating companies. They are also discussed at such meetings as the Board of Directors in an ongoing effort to promote the initiatives.

In recognition of its efforts to encourage the empowerment of women, JFE Holdings was selected three times as a Nadeshiko Brand* since FY2013.

*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. A single company is selected for each business sector represented in the TSE first section.

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 Gender Equality Bureau Cabinet Office. 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.

For more information, see:

➤ Declaration on Action by a Group of Male Leaders Who Will Create a Society in Which Women Shine
(https://www.gender.go.jp/policy/sokushin/male_leaders/pdf/declaration_body_en.pdf)

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.

For more on the employment of people with disabilities, see:

➤ Data on Employment of People with Disabilities (P.224)

Programs for Employees Over 60 Years Old

To ensure that the skills and experience of veteran employees are handed down, JFE Group companies have either raised the mandatory retirement age to 65 or introduced a system that enables all employees to work until the age of 65.

As of April 2021, 701 elderly employees, about 3.5% of the total, are working at JFE Steel, JFE Engineering, and JFE Shoji.

JFE Steel

JFE Steel raised its mandatory retirement age to 65 in April 2021 to ensure that veteran employees can remain highly motivated in their work and pass on their techniques and skills. While we used to rehire anyone who wished to continue working after reaching the age of 60, we recently established a personnel and wage system to cover all employees up to the age of 65.

JFE Engineering

JFE Engineering created the Skilled Partner Program to rehire employees who want to continue working after mandatory retirement at age 60. The company is preparing to extend its mandatory retirement age to 65 by FY2023 to encourage veteran employees to make an even greater contribution.

JFE Shoji

JFE Shoji is mindful of creating an environment that allows veteran employees over 60 to continue working with high motivation, while also seeking to realize flexible workstyles and develop a healthy working environment. Employees may choose from a variety of working arrangements, including full-time employment, shortened workweeks, and shortened daily work hours in accordance with their lifestyles.

Respect for Sexual Minorities (LGBTQ)

The JFE Group is creating a workplace that does not discriminate on the basis of gender, sexual orientation or gender identity by conducting internal human rights seminars and position-specific curriculums. LGBTQ concerns have also been incorporated into the Group's compliance guidebook, which is distributed to all employees and used as a common textbook during the annual Compliance Month of October toward nurturing greater understanding. At JFE Engineering, e-learning programs are offered to all employees, and seminars are held mainly for personnel in human resources.

Securing Diverse Human Resources

Recruitment Results for University Graduates (FY2021) and Mid-career Recruits (FY2020)

670 people (three operating companies, excluding their subsidiaries)

Women in positions with prospects for promotion: 13% (40 out of 306)
Of the above, those in white-collar positions: 23% (20 out of 86)

Mid-career and year-round recruits: 16% (105 out of 670)
Of the above, recruits in positions with prospects for promotion: 23% (71 out of 306)
Of the above, recruits in on-site positions at steelworks: 9% (34 out of 364)

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.

The Group also operates overseas businesses across a broad range, and its overseas sites hire employees locally, thereby contributing to communities with employment opportunities.

■ Recruitment Results (Three Operating Companies, Excluding their Subsidiaries) for University Graduates (FY2021) and Mid-career Recruits (FY2020)

Category	Career-track Positions			On-site and Clerical Positions	Total
	White-collar	Technical	Total		
Male	66	200	266	332	598
Female	20	20	40	32	72
Total	86	220	306	364	670
Ratio of women (%)	23.3	9.1	13.1	8.8	10.7

■ 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 white-collar positions	At least 35%
	Career-track technical positions	At least 10%
	Production/construction positions (technical)	At least 10% (4-year average)
JFE Shoji	Career-track positions for regular recruitment	At least 30%

For more on employees, refer to the following data.

➤ Social Data (P.223)

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. We intend to continue making a Group-wide effort under the Seventh Medium-term Business Plan.

JFE Steel

Utilizing Skill Data for Training Programs

The generational replacement of employees has peaked, raising the importance of boosting the skills of younger employees. Accordingly, the company applies an evaluation system at manufacturing sites to quantitatively analyze the skill level of each employee and then uses the results in its training system. It also promotes the use of IT such as a mixed reality technology-based training simulator for enhancing the quality of training.

JFE Engineering

Engineering Training Programs to Support Independent Learning

To enhance the knowledge of underlying technologies that represent a technological foundation for an engineering enterprise, the company's leading expert lectures over 30 different courses on basic technology for younger employees and mid-career hires.

A web-based learning curriculum launched in FY2018 offers employees opportunities to acquire business skills that cater to each job responsibility, including accounting and marketing.

Through these training programs, JFE Engineering provides younger employees with opportunities to grow through independent and continuous learning and strengthens the leadership capabilities of managers to transform corporate management.

JFE Shoji

Training and Measures to Maximize Employee Potential

To expand the trading business in Japan and overseas, JFE Shoji organizes a training program that enables personnel with diverse backgrounds to achieve growth in their respective work sites and business situations. The program includes a course aimed at developing the basic skills required of trading company personnel, such as those for negotiation, finance and strategic thinking, and another course for newly hired mid-career employees. In addition, it also provides an overseas trainee program that enables employees to experience business operations at overseas Group companies and invites regional employees hired at overseas offices that require a high level of competency to Japan for training in order to increase their skills and motivation. JFE Shoji intends to raise the level of competence across the entire Group through these programs targeting a broad range of employees.

Developing Global Personnel

In addition to hiring and developing non-Japanese for career-track positions in Japan and 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.

■ Global Personnel Development Programs

	JFE Steel	JFE Engineering	JFE Shoji
Study abroad	○	○	○
Short-term overseas language training	○	—	○
Overseas assignments for younger employees	○	○	○
Dispatching engineers to international conferences	○	—	—
Training for local personnel at overseas sites	○	○	○
Practical training in Japan for non-Japanese personnel at overseas sites	—	○	○
Internship for international students	○	○	—

Developing Dynamic Working Environments

The JFE Group is developing dynamic working environments through sincere discussions with labor unions and conducting employee satisfaction surveys.

We also seek to reflect the results of the corporate ethics survey, conducted every three years, to create employee-friendly working environments.

JFE Steel

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

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

JFE Shoji management and labor have jointly declared they will achieve continuous growth for the company, enhancing the lives of employees and realizing an affluent society based on mutual trust and understanding. The company maintains a sound relationship between management and labor. Semiannual Management Committee meetings are held as opportunities for the company president and other executives to regularly exchange opinions and share management information with representatives of the labor union.

Promoting Satisfying Work Environments

The JFE Group complies with laws and regulations related to salary payments and sets salaries above the minimum wage designated by country, region and industry sector. In addition to meeting legal requirements on the upper limits for overtime and other mandates, the Group establishes challenging and satisfying work environments by providing employees with one of the top levels of employment conditions in the industry as well as performance-based bonuses linked to company profits.

Furthermore, the Group offers generous welfare benefits, including dormitories and company housing in order to provide a stable environment for our employees and encourage them to remain with the company for many years.

Human Rights

The JFE Group endorses and abides by the Universal Declaration of Human Rights, the International Covenant on Human Rights and other international conventions as well as the International Labour Organization's Declaration on Fundamental Principles and Rights at Work.

The JFE Group views respect for human rights as both a corporate social responsibility and a foundation of its business. Our determination to not engage in discrimination in our business activities is clearly expressed in our Standards of Business Conduct, which we have upheld throughout our actions. In FY2018, the JFE Group Human Rights Basic Policy was established to further clarify the approach to our initiatives. While we require Group companies and their officers and employees to adhere to the policy, we also seek cooperation from all stakeholders including our supply chain to respect and protect human rights.

In addition to organizing seminars by external experts on business and human rights, starting in FY2021 we have been conducting human rights due diligence in accordance with the United Nations Guiding Principles on Business and Human Rights . We will continue to promote initiatives Group-wide for realizing a society in which human rights are respected and protected.

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

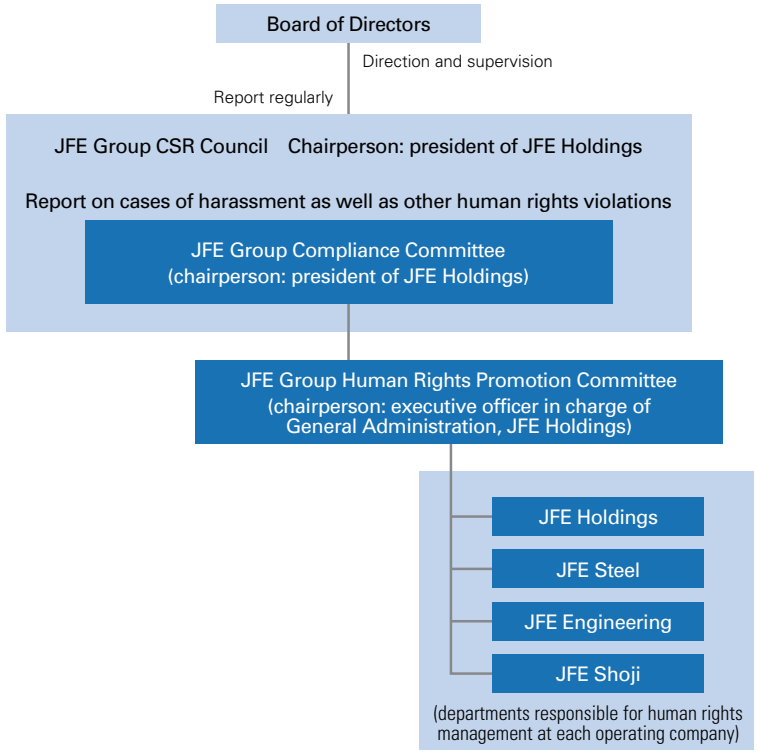
Respecting and defending human rights is not only mandatory of all officers and employees of the JFE Group, we also seek the cooperation of our supply chain members and all other stakeholders to observe these principles and practices.

Promoting Human Rights

In order to steadily work on human rights initiatives, we established the JFE Group Human Rights Promotion Council, chaired by the corporate officer of JFE Holdings under the JFE Group Compliance Committee, chaired by the president of JFE Holdings. This framework allows us to define Group-wide policies and share information with departments responsible for human rights issues that have been set up at each operating company.

In addressing all human rights risks, we emphasize communicating with stakeholders through such initiatives as setting up a Corporate Ethics Hotline at each operating company and dedicated consultation desks on harassment issues at major offices, all of which accept anonymous reporting and consultation. Furthermore, we receive inquiries, including anonymous requests, concerning compliance from external stakeholders via the contact form on our corporate website. The operational status of these help desks and cases of harassment as well as other human rights violations are regularly reported to the JFE Group CSR Council and Board of Directors, which provide direction and supervision.

■ Governance Structure for Human Rights Awareness Promotion



Human Rights Promoting Activities

We conduct human rights training courses, offer guaranteed employment opportunities, promote fair human-resource management, and work to prevent workplace harassment. Our training courses encourage employees to develop a thorough understanding of the JFE Group's Human Rights Basic Policy and the respect for human rights expected of a company in the international community. To this end, we continuously monitor and following up on seminars by designating 100% attendance as a KPI.

We seek to prevent sexual harassment, the abuse of power and other forms of harassment by addressing these issues in company regulations, displaying posters in workplaces and organizing training for each position, individual offices and executives. In FY2020, we invited an outside attorney to hold a seminar for about 200 hotline staff within the JFE Group. We regularly organize such training sessions for hotline and consultation desk personnel.

Furthermore, we actively support and take part in initiatives undertaken by public organizations and groups promoting human rights as well as groups in which private enterprises participate, such as the Industrial Federation for Human Rights, Tokyo and the Corporate Federation for Dowa and Human Rights Issue, Osaka. By attending seminars and workshops of such organizations and groups, we have become increasingly aware of human rights trends and challenges as well as issues specific to Japanese business. In turn we apply this knowledge in JFE human-rights awareness training programs and related initiatives.

Respecting the Rights of Workers

The JFE Group adheres to the laws and regulations of various countries as well as collective agreements. It also respects the rights to freedom of association as well as their right to collective bargaining.

Upper management, including the president and the representative of the union, meets regularly to discuss matters such as management issues, work life-balance, working environments, and working conditions. By conducting earnest labor-management consultations, we strive to create a vigorous workplace while working to maintain healthy and sound labor-management relations.

The JFE Group complies with laws and regulations related to salary payments and sets salaries above the minimum wage designated by country, region and industry sector. In addition to meeting legal requirements concerning the upper limits for overtime and other mandates, the JFE Group establishes challenging and satisfying work environments by providing our employees with one of the top levels of employment conditions in the industry as well as performance-based bonuses linked to company profits.

We regularly review the wage situation in each region and business sector and engage in honest discussions with the labor union to ensure a fair return to our employees while also paying due consideration to management and business performance.

Respect for Freedom of Expression

The JFE Group upholds basic human rights in its Human Rights Basic Policy and is committed to respecting and protecting the human rights of each individual throughout its corporate activities. We pay due care to prevent violations of the freedom of expression, as recognized by the International Covenant on Human Rights and other international conventions, and to fully protect the right to privacy.

Respect for Children's Rights

The JFE Group supports the Convention on the Rights of the Child and Children's Rights and Business Principles and will seek to eliminate child labor and respect every child's right to survival, right to development, right to protection and the right to participation, the four pillars of the Convention on the Rights of the Child.

The JFE Group Human Rights Basic Policy upholds recognizing the diverse values held by each individual in all aspects of corporate activity as well as respecting and protecting the human rights of each person in compliance with international conventions. It also explicitly prohibits child labor and forced labor. To promote concrete initiatives, the JFE Group has focused on nurturing the next generation as a key area of its public service and is engaged in activities that support the sound development of younger generations.

JFE Steel

Respecting Human Rights across the Supply Chain

JFE Steel recognizes that human rights violations and environmental issues pose actual business risks in procuring raw materials. It therefore established the Raw Material Purchasing Policy to develop and operate a sustainable procurement system for sourcing raw materials and practice purchasing with due respect for human rights, regulatory compliance and environmental protection. JFE Steel also established Business Conduct Guidelines, asking suppliers to comply with this initiative, and seek to publicize the guidelines across the supply chain via its website.

Tantalum, tin, tungsten and gold produced in certain regions, such as the Democratic Republic of the Congo, are defined as conflict minerals under the U.S. Wall Street Reform and Consumer Protection Act. There is concern that such minerals provide a funding source for militias causing human rights violations and environmental destruction. In our Business Conduct Guidelines, it is clearly stated that the company's policy is to avoid purchasing conflict minerals. Furthermore, JFE Steel complies with Japanese and overseas regulations governing the responsible procurement of minerals as well as international rules and investigates and confirms with suppliers that they are not selling conflict minerals.

For more on the procurement of raw materials, refer to the following information.

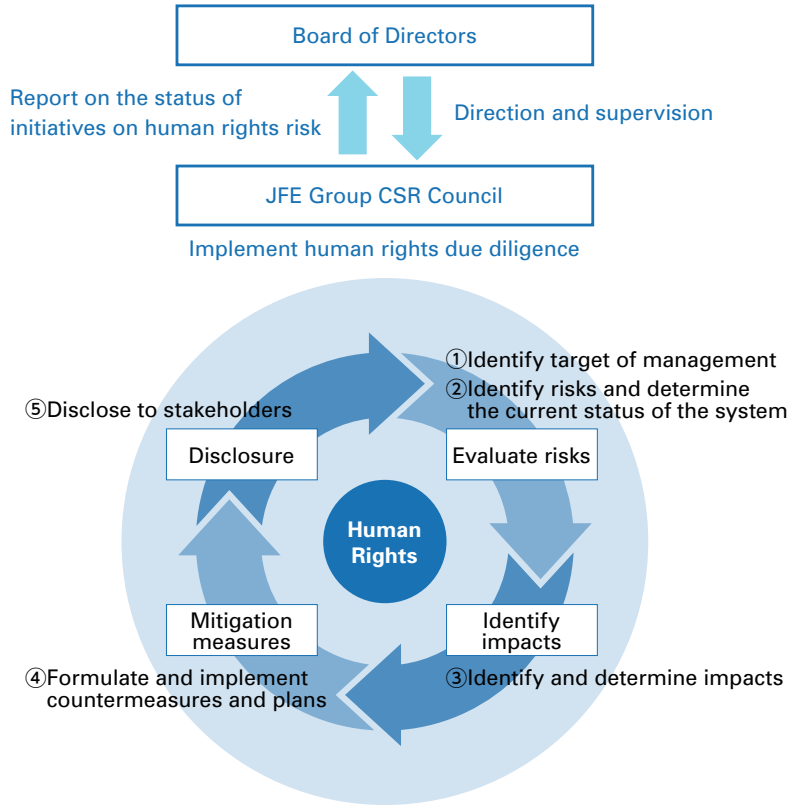
➤ **Business Conduct Guidelines of the Raw Materials Purchasing Policy**
(https://www.jfe-steel.co.jp/en/company/purchase_policy.html)

Human Rights Due Diligence

The JFE Group has adopted human rights due diligence based on the United Nations Guiding Principles on Business and Human Rights. In FY2021, we conducted human rights due diligence centered on the Company and major Group companies such as JFE Steel. We will continue to identify the JFE Group's human rights risks, consider and implement corrective measures, and consistently facilitate information disclosure and other relevant processes to ensure respect for human rights across the supply chain.

Human Rights Due Diligence Process

Starting in FY2021, the JFE Group has been implementing a human rights due diligence process to identify, assess, and mitigate any potential adverse human rights risks in the supply chain and disclose the information.



FY2021 Initiatives

Completed To be implemented

Identify human rights risks

We examined various human rights risks related to the JFE Group's supply chain by referencing international rules and guidelines including the International Bill of Human Rights and International Labour Organization (ILO)'s Declaration on Fundamental Principles and Rights at Work and by confirming human rights risks associated with the industry. As a result, we identified occupational health and safety, prohibition of discrimination and human rights violations by suppliers as the JFE Group's human rights risks, among others.

Investigate current status

We ascertained the current status of the risk management system and activities by examining our disclosure of policies on child labor, forced labor and various other human rights risks, such as the Raw Material Purchasing Policy, our whistleblowing system for ensuring access to remedial action, our initiatives on compliance including prevention of corruption, and other initiatives, systems and rules concerning internal and external human rights issues.

Assess risks and determine impacts

Having identified our human rights risks, we will assess these in relation to the degree of severity and probability of occurrence. We will also determine the status of our initiatives on respecting human rights through written surveys and interviews in order to better reflect that status in our future endeavors. During the risk assessment, we will determine the adverse impacts of human rights risks on the JFE Group and its stakeholders.

Consider mitigation measures

We will consider measures and systems to mitigate, address, prevent and remedy key risks with particularly significant adverse impacts.

Future Initiatives

We will establish a system for reducing human rights risks by continuously implementing measures for mitigating human rights risks identified in FY2021 and disclosing information concerning our responses. We will also assess and improve our initiatives to raise effectiveness under the supervision of the JFE Group CSR Council and Board of Directors.

Community

JFE Standards of Business Conduct

3 Work with communities

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

Local Activities

We are engaged in corporate activities across the globe. Continuing to do business requires that we forge relationships of trust with local communities and realize sustainable growth together by contributing to the development of each region in which we operate as well as by pursuing development at manufacturing sites where our steelworks are located. In addition to consistently taking action to ensure safety and reduce the environmental impact of our corporate operations, we also conduct initiatives that serve the public with a focus on protecting the environment, nurturing the next generation, promoting sports and culture, and revitalizing regional communities.

The operation of our steelworks involves massive production facilities and significantly impact the region's employment and economy as well as environmental air and water quality. Our steel business seeks to revitalize local communities as an important means for deepening understanding of the JFE Group among local residents and mutually promoting regional development.

In addition, we provide paid leave programs that can be used to promote volunteer work to encourage the active participation of employees.

Opening Manufacturing Sites to the Public

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 FY2019*

*The list below shows results for FY2019 as the events in FY2020 were canceled to prevent the spread of COVID-19.

	Location	Event	Date	Attendance
JFE Steel	East Japan Works, Keihin	Keihin Community Festival	May 26	46,000
	East Japan Works, Chiba	JFE Chiba Festival	October 27	30,000
	West Japan Works, Fukuyama	JFE West Japan Festival in Fukuyama	May 12	85,000
	West Japan Works, Kurashiki	JFE West Japan Festival in Kurashiki	November 3	80,000
	Chita Works	Handa Community Industrial Festival	November 9	20,000
JFE Engineering	Tsu Works	Autumn Festival 2019	October 19	4,000

JFE West Japan Festival in Fukuyama

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.

JFE Steel

Tour 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 steelwork, in conjunction with festivals and other events.

*In FY2020, we received visitors (about 30,000) after reducing the size of the tours and implementing adequate measures for preventing the spread of COVID-19.

Education at Elementary Schools

JFE Steel conducts plant tours for students at nearby elementary schools. In addition, company employees visit schools to give lectures on iron and 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 233 classes since its start in FY2012. In FY2017, the company conducted the first class at a school for hearing impaired children.

Visiting lecturer at Samugawa Elementary School in Chiba City

Support for External Organizations

Contributing to the realization of a sustainable society is a key management concern for the JFE Group, which actively seeks to address issues in collaboration with external groups and NGOs in pursuing solutions for the 17 SDGs.

UN World Food Programme

The JFE Group seeks to resolve the global hunger issue by supporting the cause and 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 and poverty.

Supporting Training for Foreign Medical Professionals

The JFE Group supports the Japanese Council for Medical Training, spearheaded by the Toranomon Hospital in Tokyo. The council offers a training program in which doctors from developing countries, primarily in Southeast Asia, are invited to study in Japan. The program aims to make an international contribution by training participants in Japan's advanced medical practices so trainees can apply their results to raise the medical standards of their home countries and to foster stronger relationships between those nations and Japan. The program also contributes to resolving health issues in local communities by enhancing the medical standards of those countries.

Refer to the following for more information.

➤ JCMT (http://www.jcmt.jp/english/)

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 JFE Group supports this foundation, which has played a leading role in research and treatment as well as human resource development in Japan.

Fund to Support Children's Future

The JFE Group endorses the Japanese government's national campaign for creating a society in which every child can grow with dreams and hopes. The Group supports the Fund to Support Children's Future, which provides assistance to NPOs and other groups engaged in activities to eliminate poverty throughout Japan.

Support for Youth Development

Japanese Language Speech Contest

The JFE Group supports the All-China Japanese Speech Contest for university students in China as a way to promote stronger international exchange. The contest has been held since 2006 to further Japan-China relations through language and communication, and JFE has provided support from its launch. Through this activity, the JFE Group contributes to the development of Japanese language education in China and the promotion of friendly exchanges between the two countries.

Contest to help build the friendship between Japan and China (awards ceremony in FY2020)

Career Education for Students

JFE Steel and JFE Engineering provide plant tours for female junior high school, high school and university students to encourage them to pursue careers in science and technology.

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.

As part of career education for high school and junior high school students, Kawasho Foods Corporation, a member of the JFE Shoji group, cooperates 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.

Business training for schoolteachers

FY2020 Internships

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 (FY2020)

JFE Steel	JFE Engineering	JFE Shoji
400 (desk work: 262, technical: 138)	586 (desk work: 96, technical: 490)	Approx. 585

JFE Steel

High School Science and Engineering 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.

In FY2020, the contest was held online so as not to spread COVID-19.

JFE Shoji

Supporting Elementary Schools in Ghana and Nigeria

Since 2011, the JFE Shoji Group has continuously supported elementary schools in the West African countries of Ghana and Nigeria as part of its CSR activities. To address deficiencies in the local educational environment, it has also focused on donating goods related to education and food, which are essential for the sound development of children and greatly appreciated by the schools and governments in the countries. While the donation ceremony was canceled in FY2020 due to the COVID-19 pandemic, the Group donated 17,000 notebooks, 12,500 cans of food, and 12,500 masks for children in an effort to prevent infection.

The JFE Shoji Group is committed to continuing this project into the future that symbolizes the Group's commitment.

Students at an elementary school in Ghana

Supporting School Meals in Developing Countries

JFE Shoji participates in an activity led by TABLE FOR TWO International, a specified Nonprofit Organization, in which a donation equivalent to one school meal for children in developing countries is made for every designated meal purchased by employees in the company's cafeteria.

Supporting Off-Campus Training by Special-Needs Schools

The JFE Shoji Group has been providing off-campus training opportunities for students at schools for special needs since FY2017. Training mainly consists of gaining work experience by serving coffee and cleaning and learning about distribution by introducing and selling sweets and coffee shop goods produced at their schools.

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.

For more on the JFE 21st Century Foundation, refer to the following information.

➤ JFE 21st Century Foundation (http://www.jfe-21st-cf.or.jp/eng/)
➤ Data related to the JFE 21st Century Foundation (P.225)

Support for Technology Research

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

In FY2020, it fielded 147 grant requests and provided a total of 44 million yen in the form of grants valued at 2 million yen each for 9 projects involving iron and steel technologies and 13 projects related to environmental technologies, including those designed to prevent global warming.

Support for Asian History Studies

The foundation began awarding grants in support of Asian history studies at Japanese universities in FY2005. In FY2020, 59 applications were received and 8 grants worth 1.5 million yen each were awarded, bringing the total to 12 million yen.

Support Activities in Communities Hosting Steel Facilities

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

In FY2020, it sponsored seven events in regions across Japan where the Group operates its steel business, including Chiba, Kawasaki and Fukuyama cities.

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 2,400 copies of "Chikyu ni Manabu" (Learn from the Earth), a collection of the winning entries again in FY2020, to 663 elementary and middle schools and 73 public libraries in the regions where the Group operates its steel business.

List of Social-contribution Activities

Local Communities and Society

- **Supported World Food Programme**
- **Supported Japanese Foundation for Cancer Research**
- **Gave plant tours***
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc01-01)
- **Held festivals and events***
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc01-02)
- **Donated to Japan National Council of Social Welfare**
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc01-03)
- **Lectured at elementary schools**
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc01-04)
- **Joined local cleanup activities***
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc01-05)
- **Conducted disaster response and prevention activities with local governments**
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc01-06)
- **Implemented and promoted Active Exercise®**
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc01-07)
- **Launched on-site daycare centers for local residents**
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc01-08)
- **Cooperated with traditional events**
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc01-09)
- **Joined Nishinomiya tourism event**
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc01-10)
- **Held Manufacturing Class for children**
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc01-11)
- **Sponsored children's eco activities under World Food Programme**
- **Supported local festivals**
- **Organized public viewing of "Dragonfly Street" and Station Square**
- **Joined Where Do Dragonflies Fly Forum**
- **Supported Tsurumi Line stamp rally**
- **Volunteered for Kasumigaura Marathon**
- **Volunteered for disaster reconstruction**
- **Organized in-house fairs for supporting post-disaster reconstruction (providing meals at a cafeteria using ingredients from the disaster area)**
- **Donated emergency food supplies to Food Bank Chiba**
- **Participated in tree planting to invigorate a rainforest in the Philippines***

Nurturing the Next Generation

- **Supported Chinese students' Japanese speech contest**
- **Supported Japanese Council for Medical Training**
- **Supported Welfare and Medical Service Agency's Children's Future Support Fund**
- **Supported technician education in Southeast Asia**
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc03-01)
- **Organized internships**
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc03-02)
- **Supported Japan Science & Engineering Challenge**
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc03-03)
- **Provided work experience**
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc03-04)
- **Supported career education**
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc03-05)
- **Accepted teachers for private-sector training**
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc03-06)
- **Cooperated with School Support Center**
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc03-08)
- **Supported Females in choosing Science or Engineering careers**
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc03-07)
- **Certified as company supporting child rearing (Kanagawa Prefecture and Nagoya City)**
- **Certified as Work-Life Balance Business (Kanagawa Prefecture)**
- **Accepted foreign technical interns (welding training)**
- **Supported elementary schools in Ghana and Nigeria**
- **Supported off-campus training by special-needs schools**

*Postponed or canceled in FY2020 in response to the COVID-19 pandemic.

Environmental Protection

- Organized firefly larvae release and viewing party
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc04-01)
- Held environmental exhibitions
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc04-02)
- Volunteered to fertilized cherry trees
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc04-03)
- Eco-purposed steel slag
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc04-04)
- **Obtained outstanding 3R-activities certification from Yokohama City (9th straight year)**
- **Donated PET bottle caps**
- **Cooperated with nonprofit Green Bird in volunteer garbage collection**

Sports and Cultural Promotion

- Held local sporting events
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc02-01)
- Baseball and racing clubs held instructional classes
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc02-02)
- Sponsored Cho Chikun Go Cup
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc02-03)
- Promoted parasports
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc02-04)
- Keihin Symphonic Band gave performances
  (https://www.jfe-steel.co.jp/en/company/csr.html#anc02-05)

Contribution to Local Communities through the Engineering Business

We contribute to realizing a circular economy in local communities by combining businesses such as renewable energy power generation, utility services, food recycling, and waste-to-energy power generation.

Development and Provision of Eco-friendly Processes and Products (P.94)

JFE 21st Century Foundation

The JFE 21st Century Foundation was established in 1990 with the support of JFE, including the former Kawasaki Steel. As a public-interest foundation it undertakes various civic-minded services, including providing financial aid for university research and promoting local culture.

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

- **Issued technical research grants (steel-related technology, global environment, technology for preventing global warming)**
- **Issued grants for Asian historical research**
- **Created and donated textbooks for universities and publications related to steel**
- **Sponsored cultural activities in communities hosting steel facilities**
- **Held Overseas Literary Contest and donated literary works**

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 Seventh Medium-term Business Plan is to achieve a payout ratio of about 30%.

Proactive Information Disclosure

The JFE Group strives for fair disclosure based on established internal policy. The Group actively communicates 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.

■ Major IR Activities (FY2020)

Activity	Participants
Investor meetings, ESG briefings	Approx. 600
Individual interviews with institutional investors and securities analysts	Approx. 300
Briefings for private investors	Approx. 1,500 in 4 briefings

For more on this, please refer to the following information.

➤ **Disclosure policy** (https://www.jfe-holdings.co.jp/en/investor/management/disclosure-policy/index.html)
➤ **Investor information: Japanese version** (https://www.jfe-holdings.co.jp/investor)
➤ **Investor information: English version** (https://www.jfe-holdings.co.jp/en/investor)

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.

For data related to plant tours and company briefing sessions for shareholders, please refer to the following information.

➤ **Major IR Activities** (P.225)

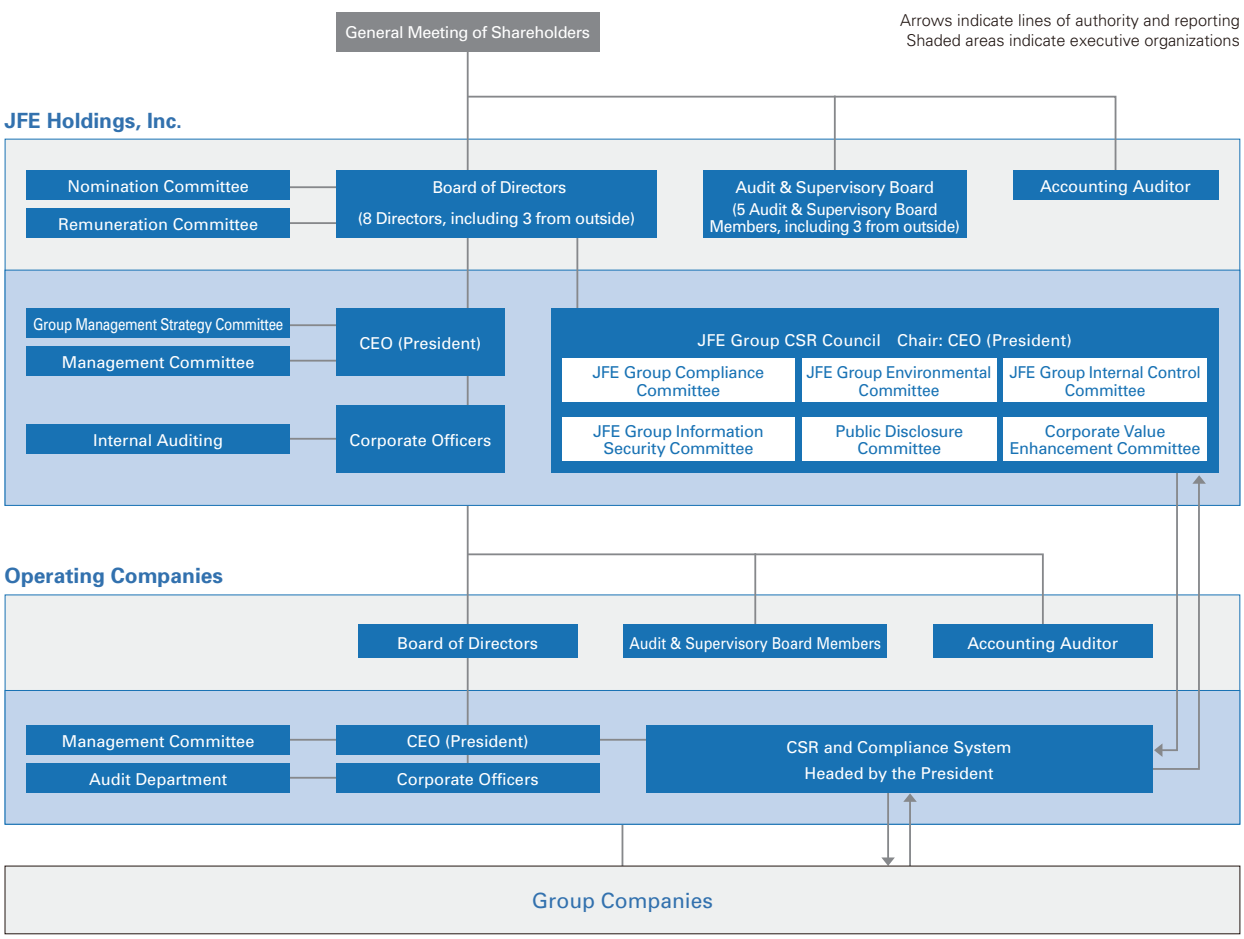
Corporate Governance

Basic Policy

With the steel business, engineering business and trading business at its core, the JFE Group develops a broad range of businesses in a wide range of areas together with many group companies and partners. Establishing a proper governance system is essential toward improving independence and raising efficiency in each operating company, along with the optimal management of risks, which include those related to the environment, safety, and disaster prevention in the Group. It is also necessary for the sustainable growth of the Group and the medium-to long-term improvement of its corporate value.

We have also established the JFE Holdings, Inc. Basic Policy on Corporate Governance to express concretely the JFE Group's Corporate Vision of pursuing best practices in corporate governance and achieving further development in this area.

➤ JFE Holdings, Inc. Basic Policy on Corporate Governance (https://www.jfe-holdings.co.jp/en/company/info/pdf/basic-policy.pdf)
➤ Corporate Governance Report (https://www.jfe-holdings.co.jp/en/company/info/pdf/corporate-governance.pdf)



Part of the governance data can be accessed from the following link.

➤ Governance Data (P.226)

Corporate Governance System

Group Governance System

The JFE Group comprises a holding company and three operating companies, JFE Steel, JFE Engineering, and JFE Shoji.

JFE Holdings, a pure holding company at the core of the Group's integrated governance system, guides Group-wide strategy, risk management, and public accountability.

Each operating company has developed its own system suited to its respective industry, ensuring the best course of action for competitiveness and profitability.

➤ Corporate Governance System (P.226)

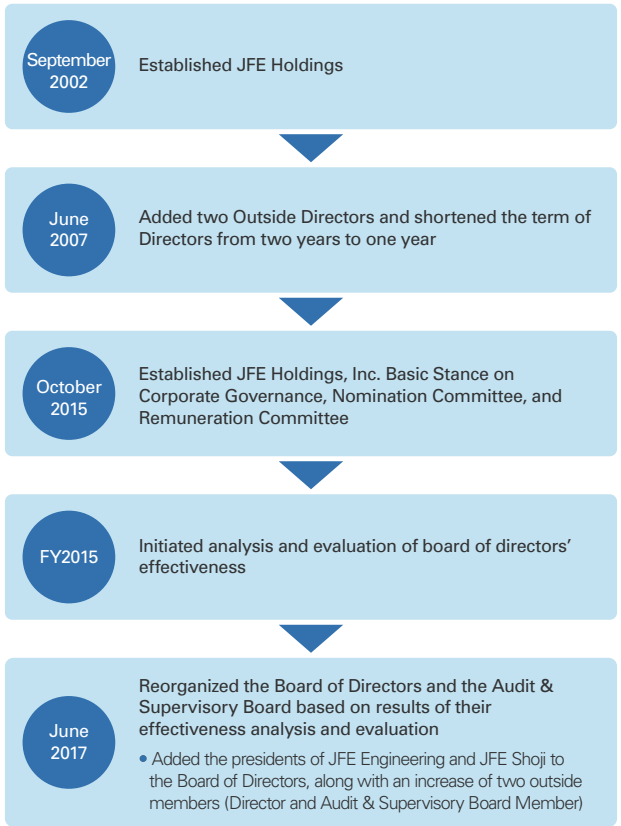
Major Topics Discussed at the FY2020 Board of Directors Meeting

- Seventh Medium-Term Business Plan
- Large-scale capital expenditures (e.g., revamping of the No. 6 blast furnace at the East Japan Works (Chiba), expanding electrical steel sheets production capacity of its West Japan Works (Kurashiki)
- M&A projects (e.g., acquisition of Mitsui E&S Environment Engineering Corporation)
- ESG initiatives (e.g., efforts to achieve carbon neutrality, assessment and review of KPIs for material CSR issues)

Governance System

JFE Holdings and each operating company have their respective Audit & Supervisory Board Members. The companies are crosschecked by the Directors, who supervise operational execution, and the Audit & Supervisory Board members, who conduct 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.

■ Major Initiatives to Strengthen the Governance System



Independent Outside Directors

Independent Outside Directors comprise one-third or more of the total number of Directors. Independent Outside Directors will be elected from persons who are appropriate to bear the responsibility of strengthening governance such as those who possess abundant experience as management in global enterprises or experts who possess profound knowledge and satisfy our independence standards. Currently, of the eight Directors, three are Independent Outside Directors.

Independent Outside Audit & Supervisory Board Members

More than half of the Audit & Supervisory Board Members are from outside. Independent Outside Audit & Supervisory Board Members will be elected from persons who are appropriate to bear the role of enhancing the auditing function such as those who possess abundant experience as management in global enterprises or experts who possess profound knowledge and satisfy our independence standards. Currently, of the five Audit & Supervisory Board members, three are Independent Outside Audit & Supervisory Board Members.

➤ Standards for Independence of Outside Directors/Audit & Supervisory Board Members of JFE Holdings, Inc.
(https://www.jfe-holdings.co.jp/en/company/info/pdf/independence.pdf)

➤ Directors and Audit & Supervisory Board Members (P.227)

Approach to Diversity in the Board of Directors

With regard to the composition of the Board of Directors, the Company elects officers following deliberations by the Nomination Committee by focusing on the enhancement of diversity of the Board members, such as their expertise, knowledge and experience in various fields, while balancing with the appropriate size of the Board. One female Audit & Supervisory Board Member was appointed in June 2019, and one female Director was appointed in June 2020. The company is also working to enhance gender and global diversity mainly by electing Directors and Audit & Supervisory Board Members who possess a wealth of knowledge and experience as management in global enterprises. The company will continue to systematically engage in initiatives to foster such human resources suitable for candidates for Directors and Audit & Supervisory Board Members by setting specific targets.

Nomination Committee and Remuneration Committee

In October 2015, JFE Holdings set up the Nomination Committee and the Remuneration Committee as advisory bodies to the Board of Directors to secure fairness, objectivity, and transparency in the appointment of and remuneration for Directors and Audit & Supervisory Board Members. For both committees, the majority of committee members are Outside Directors/Audit & Supervisory Board Members and the chairs are chosen from among these people.

The Nomination Committee deliberates and reports to the Board of Directors on matters pertaining to the basic policy on the election and dismissal of the President of the Company, proposals for the election of candidates for the President of the company, succession plans of the President of the Company, and the nomination of candidates for Outside Directors and Outside Audit & Supervisory Board Members. Four meetings were held in FY2020, with 100% attendance rates for all of them. The Remuneration Committee deliberates matters pertaining to the basic policy on the remuneration of directors, etc., of the Company and each operating company and reports to the Board of Directors. Five meetings were held in FY2020, with 100% attendance rates for all of them.

➤ Nomination Committee and Remuneration Committee (P.228)

Support for Directors and Audit & Supervisory Board Members

Directors and Audit & Supervisory Board Members are provided with opportunities and funding to receive training in legal matters, corporate governance, risk management, and other subjects that help them fulfill their roles and duties.
In addition, a briefing is held for Outside Directors and Outside Audit & Supervisory Board Members prior to Board of Directors meetings.

Furthermore, Outside Directors and Outside Audit & Supervisory Board Members are provided with relevant information and opportunities to exchange opinions with the president and other top managers, attend key hearings on the operational status of individual departments, and inspect business sites and Group companies inside and outside Japan.

Analysis and Evaluation of the Board's Effectiveness

Since FY2015, JFE Holdings has been evaluating the overall effectiveness of its Board of Directors based on its Basic Policy on Corporate Governance. Since FY2018, a third party has been conducting the analysis and evaluation to ensure an objective viewpoint. In FY2020, questionnaires were sent to all Directors and Audit & Supervisory Board Members after adding and revising their content based on the Practical Guidelines for Independent Directors.

Furthermore, we examined the results of our efforts in FY2020 to reflect the opinions and recommendations of the FY2019 evaluation.

Based on the discussions by the Board of Directors in light of the survey results and evaluation by the third-party organization, it was determined that the overall effectiveness of the Board has been ensured through vigorous discussions among members supported by sufficient preliminary briefings at the meeting for Outside Directors/Audit & Supervisory Board Members as well as by appropriate management and leadership by the chairperson.

FY2020 initiatives reflecting the results of the effectiveness evaluations up to the previous year include the following.

- Vigorous discussions regarding responses to the drastic changes in the business environment, including spread of the COVID-19 pandemic and increased public expectation for companies to address climate change by implementing emergency measures against the expansion of infection as well as formulating the Medium-Term Business Plan.
- Appointment of a female director who specializes in labor administration: her appointment further increased the diversity of Outside Officers in addition to those with management experience or with legal or business administration expertise, thereby enhancing the richness of discussions at Board of Directors meetings.
- Enriched discussions on specific initiatives regarding sustainability issues, including reports on topics such as the results of safety activities and employee awareness survey, status of the Corporate Ethics Hotline, and Group-wide initiatives for achieving carbon neutral.
- Establishment of a Group governance system in April 2021, in which the JFE Group CSR Council chaired by the President centrally carries out Group-wide risk management and reports critical matters to the Board of Directors for direction and supervision. Going forward, we will continue to improve Group-wide risk management in accordance with discussions at Board of Directors meetings.

Furthermore, in addition to accurate and fair audits performed by the Audit & Supervisory Board Members, the members also express opinions and actively ask questions at Board of Directors meetings on management decisions and reports to further invigorate deliberations. Such outcomes supported the conclusion that JFE functions efficiently as a company with an Audit & Supervisory Board.

Survey results identified issues relating to improving the effeciveness of the Board, such as strengthening the supervising function of the Board of Directors in regard to responses to group risk management and sustainability issues and providing more opportunities for Outside Officers to meet to exchange opinions with each other.
Following up on these points, we will continue to proactively implement initiatives to increase the effectiveness of the Board of Directors and enhance the Group's corporate value.

Operating System

Key Decision-Making

JFE companies are responsible for business decisions in accordance with their respective rules and procedures, whereas JFE Holdings makes decisions about Group-wide matters. Each operating company determines key matters through a deliberative process by its own Management Committee and Board of Directors. In April 2017, JFE Holdings changed the operating structure of key committees. Management strategies involving the entire group are now deliberated by the Group Management Strategy Committee and core issues of JFE holdings, the operating companies and the Group are deliberated by the Management Committee before they are submitted to the Board of Directors for resolution.

➤ Operating System (P.228)

Executive Remuneration

Executive remuneration is based on the Basic Policy on Remuneration for Directors and Corporate Officers and the Policy for Deciding the Individual Remuneration for Directors and Corporate Officers founded on discussions and reports by the Remuneration Committee, and it is decided through either a resolution of the Board of Directors or deliberations by the Audit & Supervisory Board Members, for an amount within the total limit approved at the General Meeting of Shareholders.

Basic Policy on Remuneration for Directors and Corporate Officers

- The Board of Directors shall determine remuneration system for Directors and Corporate Officers based on deliberations regarding its appropriateness by the Remuneration Committee to ensure fairness, objectiveness, and transparency.
- The remuneration level for Directors and Corporate Officers shall be determined to secure excellent human resources who are able to put the Group's corporate vision into practice, taking into consideration the business environment of the Group and remuneration levels at other companies in the same industry or of the same scale.
- The ratio between basic remuneration and performance-linked remuneration (annual bonus and stock remuneration) shall be properly established according to the roles and responsibilities, etc., of each Director and Corporate Officer so as to function as sound incentives toward the sustainable growth of the Group.

Outline of Policy for Deciding the Individual Remuneration for Directors and Corporate Officers

- Remuneration for Directors and Corporate Officers shall be determined by a resolution of the Board of Directors in accordance with the Basic Policy and the Decision Policy, based on reports from the Remuneration Committee.
- Remuneration for the company's Directors and Corporate Officers is comprised of basic remuneration and performance-linked remuneration (annual bonus and stock remuneration).
- Basic remuneration is paid as a fixed amount, in cash, each month according to position.
- An annual bonus is linked to the company's single-year performance and is paid in cash once a year.
- Stock remuneration is granted as the Company's shares and cash equivalent to the amount of the Company's shares converted to market value through the trust upon retirement.
- The ratios of remuneration by type are structured so that the higher the position, the greater the weight of performance-linked remuneration, and the ratio for the company's President when performance target goals have been attained is set so that the ratio of basic remuneration, annual bonus and stock remuneration stands at 6:2:2.

The company pays only basic remuneration to Outside Directors and Audit & Supervisory Board Members, given their roles of supervising and auditing management from an independent and objective standpoint. Directors who concurrently serve as Executive Directors of operating companies shall not be paid the Stock Remuneration from the company.

Performance-linked remuneration is calculated as follows.

• Annual bonus

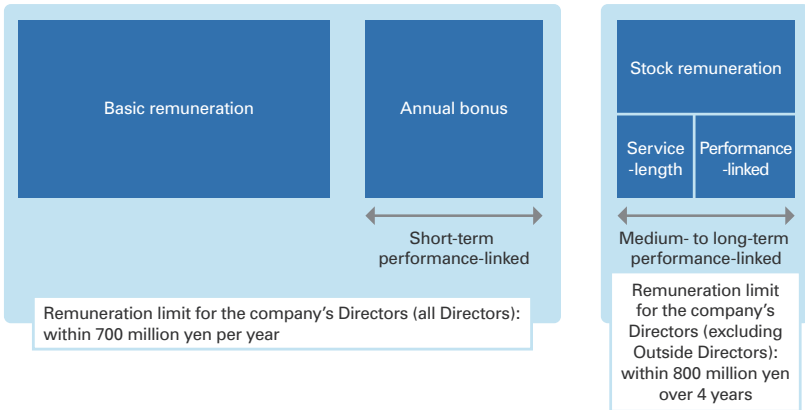
Annual bonuses are calculated by taking the total segment profit for a single fiscal year as the performance-linked indicator and multiplying the level of achievement of such indicator by a certain coefficient for each position.

• Stock remuneration

Under the stock remuneration plan, a payment level is determined based on performance targets set in the Medium-Term Business Plan of the Group. From FY2021 to FY2024, the payment level is determined according to the level of achievement of the target profit attributable to owners of the parent company of 220 billion yen per year, set under the Seventh Medium-Term Business Plan. Furthermore, 5% or more return on equity attributable to owners of parent (ROE) is the minimal requirement for the payment.

The Seventh Medium-Term Business Plan includes a provision for applying non-financial metrics in management targets. In this regard, we will consider an optimal remuneration system that will further enhance corporate value.

■ Composition of Remuneration for the Company's Directors and Part-time Audit & Supervisory Board Members



➤ Executive Remuneration (P.229)

Internal Control

The JFE Group's internal control system, in accordance with the Basic Policy for Building an Internal Control System, 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. In April 2021, we revised the Basic Policy and established the group governance system, in which the JEF Group Council chaired by the JFE Holdings' CEO (President), centrally carries out Group-wide risk management and reports critical matters to the Board of Directors for direction and supervision to increase effectiveness of the Board of Directors and strengthen its auditing function over risk management. The Basic Policy will be revised and improved from time to time to boost sustainable corporate value.

➤ Basic Policy for Building an Internal Control System (Japanese only)
(https://www.jfe-holdings.co.jp/company/info/pdf/naibutousei.pdf)

Strengthening Internal Control

Internal Audits

JFE Holdings, its operating companies and key Group companies has internal audit organizations comprising 174 people as of April 1, 2021. These organizations share information to enhance overall auditing within the Group.

Audits by Audit & Supervisory Board Members

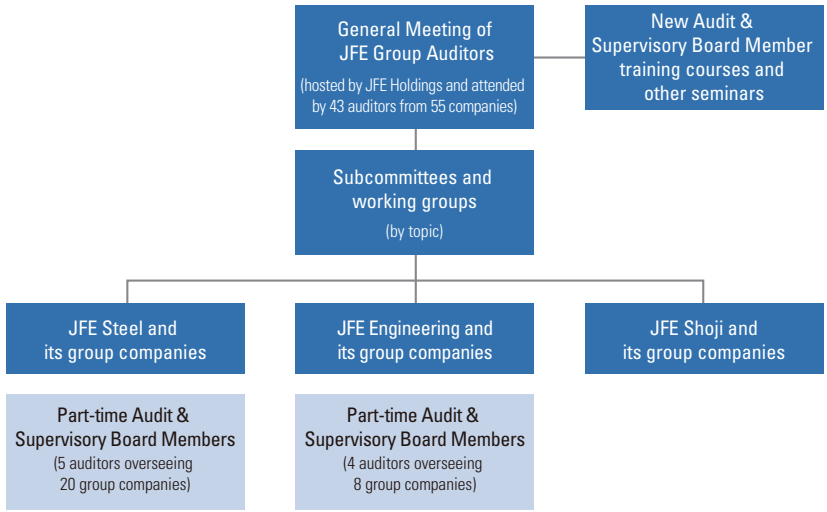
Audit & Supervisory Board Members attend meetings of the Board of Directors, Group Management Strategy Committee, and Management Committee as well as the Group CSR Council and other important meetings. To audit how Directors execute their responsibilities, they conduct hearings with Directors and corporate officers regarding operational status and receive operational reports from subsidiaries. In addition to undergoing statutory audits, JFE companies take the following initiatives to strengthen coordination among the Members through information sharing and ensure the effectiveness of internal auditing by the Audit & Supervisory Board Members.

A total of 34 full-time Audit & Supervisory Board Members have been appointed to 29 companies, including JFE Holdings. Operating company personnel are dispatched to Group companies as part-time Outside Audit & Supervisory Board Members. Each dispatched Audit & Supervisory Board Member serves one to five subsidiaries to perform audit and enhance Group governance. Nine Audit & Supervisory Board Members served 28 companies in total.

The JFE Group Board of Auditors includes both full-time Audit & Supervisory Board Members of each Group company and part-time Audit & Supervisory Board Members. Subcommittees and working groups created to address specific issues meet autonomously to share information, investigate issues and enhance understanding. The findings of the year's activities are presented at the general meeting of JFE Group Auditors and used for audits.

➤ Operating System (P.228)

■ Structure of JFE Group Board of Auditors



Cooperation between Audit & Supervisory Board Members and Accounting Auditor

In FY2020, the Audit & Supervisory Board Members held seven scheduled or unscheduled meetings with Ernst & Young ShinNihon, JFE's outside accounting auditor, in which the latter presented its audit plan, completed work and detailed results. The firm also presented a detailed explanation of its quality management system to confirm its validity. In turn, the Audit & Supervisory Board Members explained their own audit plans and other matters to the firm. The two sides also shared opinions on related matters.

Cooperation between Audit & Supervisory Board Members and Internal Auditing Department

In FY2020, the Audit & Supervisory Board Members held six scheduled or unscheduled meetings with the internal auditing department, in which the latter presented its internal audit plan, work status and detailed results. During the meetings, the Audit & Supervisory Board Members also shared opinions with the department.

Operating Company Governance

Some Directors, Corporate Officers and Audit & Supervisory Board Members of JFE Holdings serve concurrently as the Directors or Audit & Supervisory Board Members of operating companies to strengthen governance and information sharing across the Group. To strengthen governance, JFE Holdings' managers attend each operating company's General Meeting of Shareholders and Management Planning Briefing, receive reports on their activities, and discuss the managerial policies of subsidiaries.

Policy on Listed Subsidiaries

To put into practice the Group's corporate vision of contributing to society with the world's most innovative technology, and also to realize sustainable growth and enhancement of medium to long-term corporate value, the JFE Group forms a corporate group comprising companies with high expertise, divides business functions within the Group and conducts businesses development outside of the Group. Of these subsidiaries, the following three are the listed companies that we hold.

GECOSS CORPORATION

The main business of GECOSS includes leasing and sales of temporary construction materials and designing and construction of temporary works. Its products and services are mainly provided to civil engineering and construction businesses. GECOSS offers products and services that match the needs of its customers in cooperation with JFE Steel and the Group companies. We believe that carrying out business with GECOSS as our subsidiary will lead to maximizing the value of the company and of the Group through personnel exchanges, R&D, and other collaborative initiatives with JFE Steel. Furthermore, GECOSS maintains its listed status as a means to enhance its competitiveness from the perspective to secure market recognition and credibility in funding, sales and marketing, and hiring.

JFE Container Co., Ltd.

The main business of JFE Container includes manufacturing and sales of drum cans and high pressure gas containers. Its products are mainly sold to chemical, oil, automobile, and gas businesses. JFE Container offers products that match the needs of its customers in cooperation with JFE Steel and the Group companies. We believe that carrying out business with JFE Container as our subsidiary will contribute to maximizing the value of the company and of the Group through personnel exchanges, R&D, and other collaborative initiatives with JFE Steel. Furthermore, JFE Container maintains its listed status as a means to enhance its competitiveness from the perspective to secure market recognition and credibility in funding, sales and marketing, and hiring.

JFE Systems, Inc.

The main business of JFE Sytems includes system integration consisting of planning, designing, development, operation, and maintenance of information system, system construction utilizing solutions and the company's own products, and IT infrastructure solutions that support the business system. Computer systems are an important foundation in the steel business that support overall business activities, including order acceptance, production, shipment, and quality management, and in using a variety of data. Guaranteeing the accumulation of know-how and the continuation of personnel exchanges by holding JFE Systems as a subsidiary will also be indispensable for maintaing the competitiveness of JFE Steel in pressing ahead with digital transformation. Furthermore, JFE Systems maintains its listed status as a means to enhance its competitiveness from the perspective to secure market recognition and credibility in funding, sales and marketing, and hiring.

The aforementioned three companies are subject to rules different from those applicable to other consolidated subsidiaries, and other measures are also taken so as to ensure that each of the companies conducts autonomous corporate activities exercising autonomy and flexibility, secure management independence as listed companies, and make sure that the interest of the said subsidiaries' shareholders other than the said subsidiaries and the Company will not be unfairly impaired. In addition, with respect to matters necessary for the Group's risk management, prior consultation and reporting are required from the three companies while securing their independent decision-making, so as to implement risk management as a member of the Group companies.

Furthermore, the Company shall regularly verify the significance of maintaining the listing of the listed subsidiaries and take necessary measures upon confirmation at its Board of Directors. The above details were examined and discussed by the Board of Directors in May 2021.

Basic Policies for Strategic Shareholdings and Exercise of Related Voting Rights

All shares held by the Company are the shares of subsidiaries or affiliates. In principle, the Company's wholly owned subsidiaries and operating companies, JFE Steel Corporation, JFE Engineering Corporation and JFE Shoji Corporation (hereinafter "Operating Companies"), do not hold domestic listed stocks as strategic shareholdings. Strategic shareholdings, however, are allowed as an exception when holding the stocks of the Company is determined to be necessary for maintaining and achieving growth for the Group.

The Board of Directors meetings regularly confirm the significance of the strategic shareholdings and whether the benefits and risks of such holdings are commensurate with their capital cost, and sell strategic shareholdings if there is no significance of such shareholdings or there is a risk of damage to shareholders' interest. In April 2016, the Company decided to reduce its strategic shareholdings by approximately 100 billion yen and sold its strategic shareholdings in the amount of approximately 140 billion yen (on a market value basis) by FY2018. In November 2019, the Company decided on a policy to further sell its strategic shareholdings in the amount of 100 billion yen and sold all or part of 143 stocks between FY2019 to FY 2020. (Total sales amount: approximately 145.9 billion yen (on a market value basis)).

Furthermore, the Board of Directors, at a meeting held in December 2020, examined the significance of its strategic holdings and the return on investment. The exercise of voting rights of strategic shareholdings is decided upon reviews by operating companies on the content of the proposal and is appropriately implemented in a way that will maximize shareholder interest. To be specific, the content of the proposal is to be checked by the investment application department and the investment control department, and approval will be given to proposals which are considered not to pose any threat to the maximization of interest of these Operating Companies as shareholders. Of the shares for investment purposes held by JFE Steel, which has the largest balance sheet amount and account for the majority of the shares for investment purposes posted in the consolidated financial statements of the company, those shares of JFE Steel that are held for purposes other than pure investments are shown below.

■ Number of Issues and Amount Reported in the Balance Sheet

	FY2018 year-end	FY2019 year-end	FY2020 year-end
Number of issues	238	219	171
Total balance sheet amount (billion yen)	241.0	166.1	96.0

Compliance

Basic Policy

In expanding our businesses in Japan and abroad, it is important that JFE 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, JFE believes it is extremely important that all members of the organization deepen their knowledge and awareness of compliance and perform their jobs accordingly. It conducts training on various topics such as the Antimonopoly Act, the Subcontract Act and anti-corruption, including prevention of bribery of public officials, using e-learning and compliance guidebooks and through guidebook reading sessions as well as by other means.

Compliance System

The JFE Group Standards of Business Conduct guide employees to conduct their business activities based on the Corporate Vision and Corporate Values. They also help to strengthen awareness among all JFE Group executives and employees and ensure adherence to corporate ethics.

The Compliance Committee chaired by the President of JFE Holdings generally convenes every quarter to deliberate basic policies and issues and then supervise their implementation. Each operating company has a similar in-house system for promoting and supervising compliance. In addition, operating companies have introduced a Corporate Ethics Hotline to ensure that crucial information regarding compliance can be communicated directly from the front lines to top management.

For more on the JFE Group Standards of Business Conduct, please refer to the following information.

➤ JFE Group Standards of Business Conduct (https://www.jfe-holdings.co.jp/en/company/philosophy/guideline.html)

Ensure Adherence to Corporate Ethical Standards and Compliance

Thorough Compliance

As part of its initiative to raise awareness of compliance, the JFE Group compiled a Compliance Guidebook that was distributed to employees and executives (domestic and overseas) to be used in activities such as collation and to ensure that the rules are fully communicated and informed. The guidebook provides a simple explanation of concrete standards for complying with laws and internal rules and for acting in line with social mores with over a hundred case studies.

Questions that come up in the course of daily operations as well as situations and cases that test our judgment have been compiled in the guidebook with explanations by the relevant department. The content has been reviewed by legal counsel.

The JFE Group also conducts training on compliance with the Antimonopoly Act, insider trading restrictions, security export controls, the Construction Business Act, anticorruption laws including laws against bribery of public officials, and more.

Whistleblowing System

The JFE Group has established a Corporate Ethics Hotline, a contact point accessible to all officers and employees (including contract workers, part-time workers, and temporary staff, either active or retired) of the JFE Group as well as those of suppliers and other business partners. The purpose of the hotline is to ensure adherence to corporate ethics and compliance and to prevent corruption. Reports and consultations are accepted via e-mail, a dedicated phone line and postal mail, anonymously if preferred, and an external hotline to an independent law firm is also provided.

To encourage the active sharing of information, the Corporate Ethics Hotline is operated under rules and regulations that ensure strict confidentiality and protect people who report information or seek advice against acts of retaliation. We investigate the facts of any reported incident only after consulting with the whistleblower to protect their privacy, and feedback the investigation results to the whistleblower if requested.

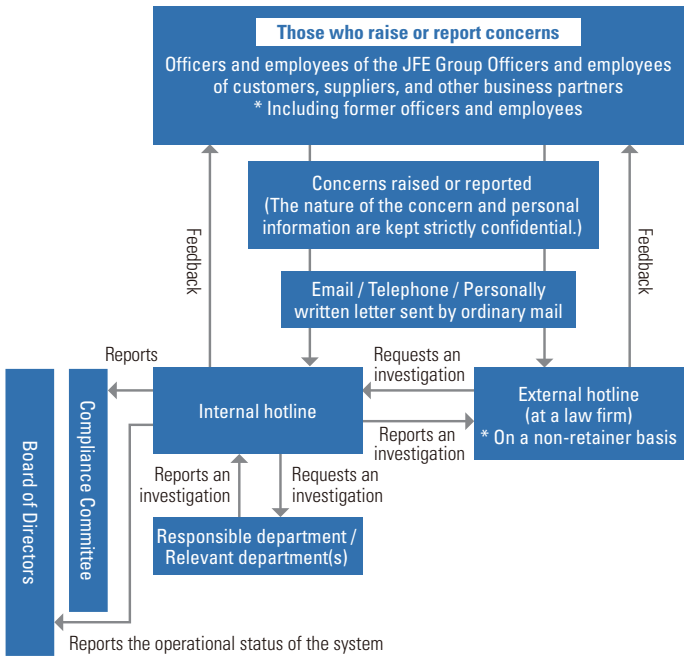
We strive to prevent incidents of misconduct and ensure the early detection and correction of wrongdoing by accepting consultations and reports, ranging from compliance issues such as violation of the Antimonopoly Act, corruption, and bribery, to human rights abuses including misconduct and harassment in the workplace. In the event that violations of laws are confirmed, corrective and remedial measures are taken in the organization involved. Details of the reports and consultation received at the Corporate Ethics Hotline are regularly communicated to full-time Audit & Supervisory Board Members while the operational status of the system is reported to the Board of Directors for their review.

We also accept inquiries, anonymously if preferred, on compliance and other issues from outside stakeholders via a form on the corporate website. The content is handled as confidential and appropriately addressed.

Procedures for handling illegal acts or other violations:

- Departments responsible for compliance at JFE Holdings and each operating company carry out necessary responses, such as implementing the initial response, confirming facts, investigating the cause, and developing measures to prevent recurrence.
- Departments responsible for compliance at each company report on the facts, cause, and recurrence prevention measures to the Compliance Committee at each company to confirm the cause and assess the effectiveness of recurrence prevention measures and the responsibility of related parties.
- Matters such as major violations are reported to the Compliance Committee to be shared across the entire Group and to facilitate horizontal implementation of recurrence prevention measures to make sure that no similar violations occur anywhere in the Group.

■ Whistleblowing System



Preventing Corruption and Bribery

Under its Standards of Business Conduct, the JFE Group endeavors to comply with laws and ordinances, compete fairly and freely, refrain from illegal business activities, and build and maintain sound and proper relationships with governments and political authorities.

We explicitly prohibit bribery, such as the offering and receiving of illegal payoffs, excessive entertaining or favors, as well as corruption such as embezzlement from a position of advantage and promotion of conflicting interests. The Group strives to thoroughly prevent corruption by stating in its company rules that these offenses will be penalized.

In addition, under its Standards of Business Conduct, the JFE Group endeavors to build and maintain sound and proper relationships with governments and political authorities. The bribing of public officials has become a major business risk in recent years due to growing global awareness of corruption and a stronger drive by authorities to expose such wrongdoing. The JFE Group does not tolerate any kind of illegal activity in Japan or any other country, including bribery, such as offering money or other benefits to public officials, and never resorts to these illegal activities to gain profit or resolve problems. Considering this, the Group issued JFE Group's Basic Policy on Preventing Bribery of Public Officials and disseminate it throughout the Group including operating companies. The JFE Group also maintains various systems to prevent the bribery of public officials, such as by stipulating that efforts be made to use third-party appointment checklists or have an anti-bribery confirmation letter signed when using external parties including agents or consultants who may have connections with overseas public officials.

For our stance on preventing bribery, refer to the following information.

➤ **JFE Group's Basic Policy on Preventing Bribery of Public Officials**
(https://www.jfe-holdings.co.jp/en/company/philosophy/anti-bribery.html)

Resisting Organized Crime

The JFE Group declares in its standards of business conduct that it will firmly resist all antisocial forces and has established the JFE Group Policies for Addressing Antisocial Forces and Regulations for Addressing Violence Directed at Companies to clarify the measures to be taken against antisocial forces, including an initial response manual.

The JFE Group Policies for Addressing Antisocial Forces has been approved by the Board of Directors, and we will seek to establish sound corporate management based on an organized and unified response to the issue within the framework of our system of compliance. We have specifically set up a section responsible for handling antisocial forces in the General Administration and Legal Affairs departments of each Group company to completely discontinue any dealings with antisocial forces. We will also set up rules for reporting and responding to any related incidents and will resolutely stand against antisocial forces by cooperating with law enforcement.

In addition, we will seek to establish thorough awareness of the JFE Group Policies for Addressing Antisocial Forces and specific rules governing our response among all executives and employees by providing e-learning and distributing the Compliance Guide Book.

Compliance with the Antimonopoly Act

The JFE Group views past violations of the Antimonopoly Act seriously and continues to implement thorough measures to eliminate the possibility of future infringements. The internal audit departments of JFE Steel and JFE Engineering are auditing transactions with other companies to ensure compliance with the Antimonopoly Act by confirming that no activities are suspected of violating the law. The audits are being conducted regularly at each office, including branches and branch offices. Each Group company is implementing similar measures to prevent violations of the Antimonopoly Act.

We are increasing the effectiveness of these recurrence prevention measures by regularly reporting relevant activities to the Compliance Committee.

Confirmation and Improvement through the Employee Awareness Survey

The JFE Group regularly conducts a Corporate Ethics Awareness Survey once every three years for directors and employees of the Company as well as the operating companies to confirm the penetration and thorough compliance of the Group's Corporate Vision, Corporate Values, and Standards of Business Conduct, along with the identification of potential risks. The survey conducted in FY2019 confirmed that many employees acknowledged the vision and corporate policy and are aware of compliance matters when carrying out their work. On the other hand, the survey also brought to our attention issues to address going forward. Issues identified are reflected in the specific initiatives of each company for improvement under the supervision of the JFE Group CSR Council and the Board of Directors.

Risk Management

Risk Management System

JFE Holdings is responsible for comprehensive risk management of the Group in accordance with its Basic Stance for Building an Internal Control System by establishing a system whereby the Board of Directors oversees risk management and confirms its effectiveness.

In April 2021, we established a system whereby all risks in the Group are centrally managed by the Council and all critical matters are reported to the Board of Directors for direction and supervision.

Specifically, corporate oficers are responsible for recognizing risks, and those deemed material are then confirmed and assessed by the JFE Group CSR Council, chaired by the CEO (president) of JFE Holdings. Next, the CSR Council deliberates and decides on countermeasure policy and action plans for risk management. Such risks include business activities; compliance-related matters such as compliance with the Antimonopoly Act and laws related to anti-corruption including bribery of public officials, observance of company policy and regulations such as the Corporate Vision and JFE Group Standards of Business Conduct; and ESG risks such as those related to the environment, climate change, human affairs, labor, safety and disaster prevention; human rights abuses such as sexual harassment and power harassment, quality management, financial reporting, and information security. The Board of Directors oversees risk management and confirms its effectiveness by regularly receiving reports on Group policy and action plans on risk management, and through deliberation and decision-making on important matters regarding risk mangement.

We will continue improving Group-wide risk management in accordance with the discussion by the Board of Directors.

For our risk management policies and systems, refer to the following information.

➤ **Basic Policy for Building Internal Control Systems (Japanese only)**
(https://www.jfe-holdings.co.jp/company/info/pdf/naibutousei.pdf)
➤ **JFE Group CSR System** (P.26)
➤ **Development of the Whistleblowing System** (P.190)

Response to Specific Risks

Response to Climate Change Risks

The JFE Group places initiatives on climate change as top-priority business concerns, and it formulated the JFE Group Environmental Vision for 2050 to achieve carbon neutrality by 2050. In the Seventh Medium-Term Business Plan, the Group established managerial targets to reduce CO_2 emissions from the steel business by 18% from FY2013 levels by the end of FY2024 and achieve carbon neutrality by 2050.

Risks are identified and evaluated based on a scenario analysis conducted under the framework recommended by the TCFD, and important factors that may affect management are selected for further analysis and used in formulating business strategies, including the Seventh Medium-Term Business Plan.

For climate change risks and opportunities, refer to the following information.

➤ **TCFD Recommended Scenario Analysis** (P.77)

Intellectual Property Management

The JFE Group meticulously manages intellectual property across its diverse business activities. To prevent infringement on third-party intellectual property, it constantly monitors the latest information on intellectual property and implements all necessary measures.

Privacy Protection

JFE has established the JFE Group Privacy Statement for managing information including "My Numbers," which are personally identifiable numbers under Japan's social security and tax number systems.

To maintain the appropriate protection of personal information, employee trainings on the rules, which have been set in place in accordance with the privacy statement, have been conducted as stipulated in applicable laws of each country related to businesses and guidelines.

To reduce information security risks, including cyber-attacks and improper system use such as leaks of personal information, and to promote safe business activities, the JFE-Security Integration and Response Team (JFE-SIRT), comprising the IT division managers of each operating company, participates in the Nippon CSIRT Association, established by private sector volunteers and corporate Computer Security Incident Response Teams (CSIRTs) active in Japan. We seek to enhance the level of our initiatives by exchanging information and coordinating on security incidents.

For privacy protection policies, please refer to the following information.

➤ **JFE Group Privacy Statement** (https://www.jfe-holdings.co.jp/en/privacy.html)

Information Security

The JFE Group formulates various rules on information security management to prevent information leakage and system failures due to cyber-attacks and improper system use. Efforts are made to enhance information-security knowledge and awareness of rules among employees through training and education. Additionally, shared IT measures are applied in each Group company and regular information security audits are conducted to reinforce the overall information security management level in the Group.

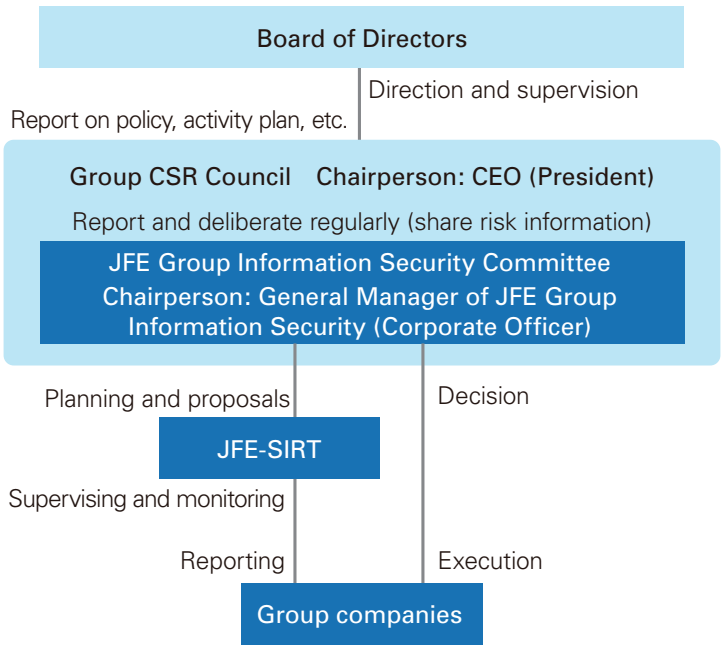
Key issues related to IT, particularly information security, are deliberated by the JFE Group Information Security Committee to determine Group policy.

Applying the policies set by the committee, the JFE-SIRT formulates and implements information-security measures, performs information security audits, offers guidance on responding to incidents and generally enhances the level of Group-wide information security management. JFE-SIRT reports on its activities to the Group CSR Council as appropriate.

For more details on JFE's information security, refer to the information in the management section of the DX REPORT.

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

■ **Conceptual Diagram of Information Security**



Responding to Human Rights Risks within the Supply Chain

The JFE Group procures raw materials, constuction materials, and machinery from all over the world. In reponse to human rights risks associated with the supply chain, the Group established the JFE Group Human Rights Basic Policy in 2018 to take action in accordance with the United Nations Guiding Principles on Business and Human Rights. Each operating company has established raw material purchasing policies, purchasing and procurement policies, and a basic policy on sustainability in the supply chain, and they carry out purchasing in a way that respects human rights, legal compliance, and environmental preservation.

In addition, starting in FY2021, the Group has been conducting human rights due diligence to support the creation of sustainable supply chains.

For more details on our human rights due diligence initiatives, refer to Human Rights.

➤ Human Rights (P.160)

JFE Group's Business Continuity Plan

Anticipating the possibility of natural disasters caused by typhoons and major earthquakes as well as a rapid expansion of infectious diseases such as a new strain of influenza, the JFE Group has formulated a business continuity plan (BCP) to address contingencies. We conduct regular training based on the BCP while also pursuing other countermeasures.

In the event of a major earthquake, the Group CSR Council will promptly discuss and determine the policy on how to deal with the matter, based on predetermined response processes to minimize loss and other damages.

Response to Major Natural Disasters

We are preparing to respond in the event of a major earthquake through measures such as establishing tsunami shelters, maintaining a Company-wide line of command under restricted communications and power outages, and securing data backup. We have also strengthened drainage at our steelworks to address the impact of typhoons and torrential rains that are occurring in Japan with increasing severity.

Response to the COVID-19 Pandemic

We have addressed the COVID-19 pandemic by quickly setting up a response team and implementing measures based on the policies for an assumed outbreak of a new strain of influenza. We have sought to reduce commuting by relaxing internal requirements to recommend various styles of working at home. For employees who must work at the office, we have adopted staggered commuting, installed office partitions and are using teleconferencing and other means to reduce the risk of infection insofar as possible. Through these initiatives, we seek to explore more flexible workstyles and improve the productivity of our workforce.

In particular, JFE Steel has reviewed its BCP for the novel influenza epidemic and conducted a simulation to gauge the effects on operations in case an increase in the number of infections leads to a rise in the absence rate. The company is preparing responses to diverse situations to maintain key businesses including operations at our steelworks while improving its workplace environment by practicing thorough hygiene management and implementing a remote working infrastructure. We are also actively promoting workplace COVID-19 vaccinations. We will continue to place top priority on the safety and wellness of employees and others involved in the company.

Tax Transparency

Basic Policy

The JFE Group upholds the JFE Standards of Business Conduct and complies with both the letter and spirit of the tax laws of each country as well as international rules, including the taxation guidelines issued by the Organization for Economic Co-operation and Development and other international institutions. We will pay taxes in every country where we do business in a timely, appropriate, and fair manner.

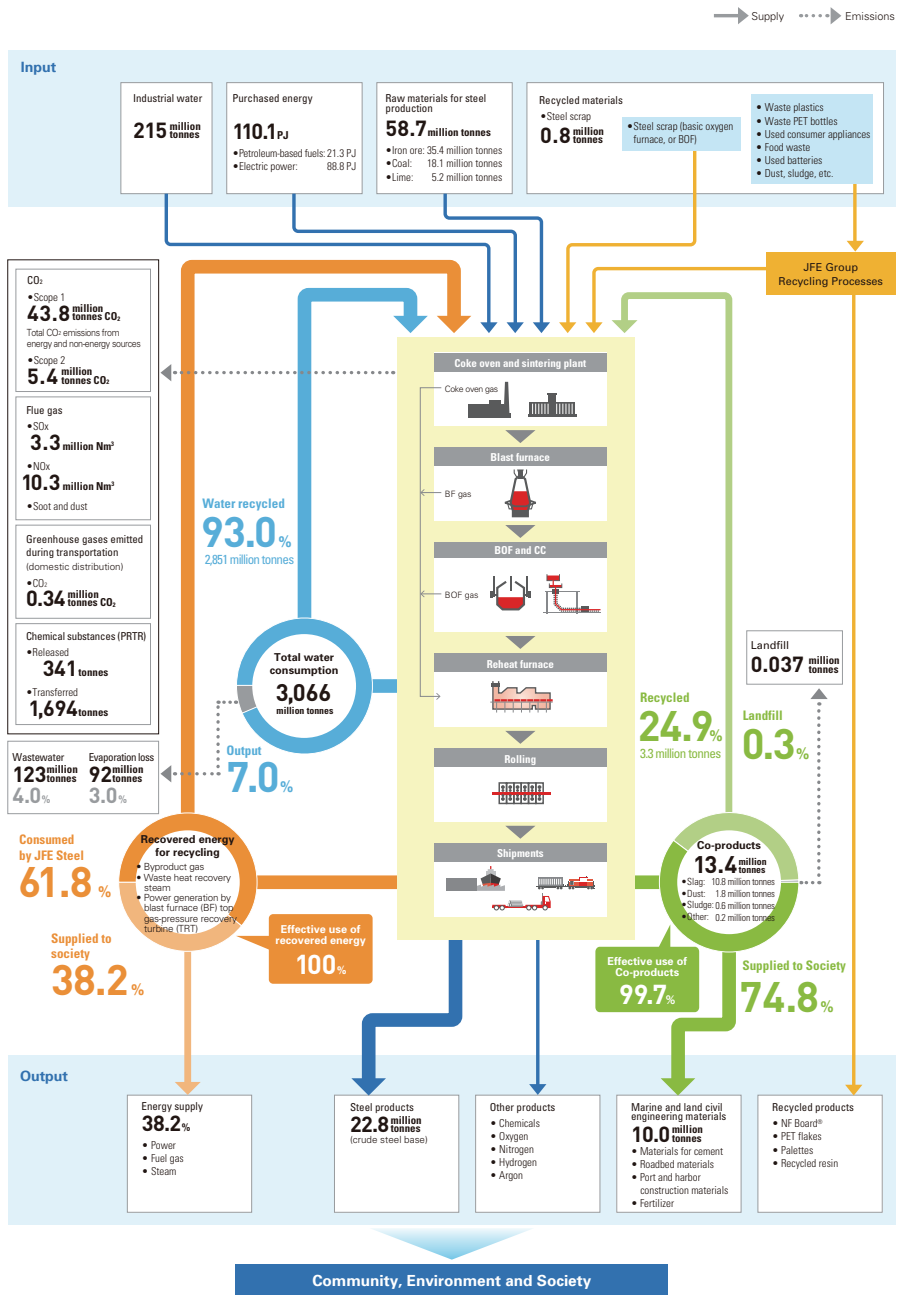
Moreover, we seek to forge relationships of trust with the tax authorities in each country by raising transparency and without resorting to tax planning or the use of tax havens to evade taxation.

Environmental Data

Material Flow

JFE Steel works to reduce the environmental impact of its iron and steelmaking processes, including through the effective use of resources. The company recycles 93.0% of the water it uses for production and uses 99.7% of its co-products, such as iron and steelmaking 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.

JFE Steel (Non-consolidated)



JFE Engineering (Head Office and Works)

Input

Steel	**36,900** tonnes
Energy	
•Electric power purchased	**26.0** GWh
•Class A heavy oil	**84.4** kl
•Kerosene	**6.6** kl
•Light oil	**214** kl
•Gasoline	**12.4** kl
•City gas	**330,000** tonnes
•LPG	**83.1** tonnes
Water	**72,400** tonnes

JFE Engineering

- **Tsurumi Works**
- **Tsu Works**

Output and Emissions

Products	**34,700** tonnes
CO_2	**9,000** tonnes CO_2
•Scope 1	**1,800** tonnes CO_2
•Scope 2	**7,200** tonnes CO_2
Waste generated	**1,400** tonnes
•Industrial wastes	**1,100** tonnes
•General wastes	**277** tonnes
Wastewater (ocean only)	**157,000** tonnes
Others (PRTR)	**147** tonnes

Abbreviations indicated under "scope" represent the following group or company:
JFE Group [All]; JFE Steel Group [ST Gr]; JFE Steel [ST]; JFE Engineering Group [EN Gr];
JFE Engineering [EN]; JFE Shoji Group [SH Gr]; JFE Shoji [SH]

Environmental Management

■ Data Regarding Environmental Management

Items		Scope	Unit	FY2016	FY2017	FY2018	FY2019	FY2020
% covered by ISO 14001 certification	Base*1	All	%	50	54	54	58	58
		ST Gr	%	19	20	20	21	21
		EN Gr	%	5	5	5	9	9
		SH Gr	%	26	29	29	28	28
	Employee*1	All	%	76	70	72	74	70
		ST Gr	%	—	—	72	75	74
		EN Gr	%	—	—	60	60	51
		SH Gr	%	—	—	88	92	89
Environmental audit (number of sites)		ST Gr	sites	34	31	31	32	24
		EN Gr	sites	46	48	50	48	28
Environmental education conducted (total participants)		EN Gr	people	1,426	996	1,059	1,063	731

*1 Data for past fiscal years were retroactively revised for increased accuracy.

■ Environmental Accounting Data (1)

Breakdown of environmental protection cost		FY2019		FY2020	
		Investment (billion yen)	Cost (billion yen)	Investment (billion yen)	Cost (billion yen)
Management	Impact monitoring and measurement, and EMS expenses and education	0.1	2.6	1.4	2.6
Global warming countermeasures	Saving and efficiently using energy	26.7	27.6	14.4	25.2
	Recycling industrial water	3.9	18.3	2.4	16.9
Conservation of natural resources	Recycling and waste management of internally generated materials, etc.	0.06	5.1	0.6	4.8
Environmental protection	Air pollution countermeasures	11	34.1	5.3	32.9
	Water pollution countermeasures	4.1	11.3	4.7	10.6
	Prevention of soil contamination, noise, vibration, and subsidence	0.04	0.6	0	0.6

Breakdown of environmental protection cost		FY2019		FY2020	
		Investment (billion yen)	Cost (billion yen)	Investment (billion yen)	Cost (billion yen)
Other	Charges, etc.	—	1.5	—	1.6
R&D	Technologies for protecting the environment, saving energy, and preventing global warming	1	11.3	0.8	8.3
Societal activities	Support for nature preservation and forestation, information disclosure, exhibitions, and public relations	—	0.7	—	0.6
Total		46.8	113.1	29.7	104.0

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

■ Environmental Accounting Data (2)

Items	Scope	Unit	FY2016	FY2017	FY2018	FY2019	FY2020
Energy-saving investment (accumulated)	All	billion yen	474.9	492.9	505.4	532.1	546.5
Environmental protection investment (accumulated)	All	billion yen	668.5	692.4	708.5	727.6	742.1

Environmental Management (Supplementary Data)

■ List of ISO 14001 Certified Companies (includes certification limited to certain sites of a company)(As of July, 2021)

Operating company*1	Group company	
JFE Steel Corporation	JFE MINERAL COMPANY, LTD.	JFE Plant Engineering Co., Ltd.*2
	Mizushima Ferroalloy Co., Ltd.	JFE Techno-Research Corporation*2
	JFE Material Co., Ltd.	JFE Metal Construction Inc.*2
	JFE Plastic Resource Corporation	JFE KYOWA YOKI CO. LTD*2
	JFE Bars & Shapes Corporation	Japan Pail Corporation*2
	JFE Galvanizing & Coating Co., Ltd.	JFE SETOUCHI LOGISTICS CORPORATION*2
	JFE Container Co., Ltd.	Guangzhou JFE Steel Sheet Co., Ltd.*3
	JFE Welded Pipe Manufacturing Co., Ltd.	Thai Coated Steel Sheet Co., Ltd.
	JFE Pipe Fitting Mfg. Co., Ltd.	Philippine Sinter Corporation
	JFE LOGISTICS CORPORATION	JFE Steel Galvanizing（Thailand）
	JFE Chemical Corp.	PT. JFE Steel Galvanizing Indonesia
	DAIWA KOHTAI CO. LTD*2	

Operating company*1	Group company	
JFE Engineering Corporation	J&T Recycling Corporation	Fujikako, Inc.
	JFE Aqua Machine and Service Corporation	Asuka Soken Co,. Ltd.
	JFE Environmental Service Corporation	JFE Urban Recycle Corporation
JFE Shoji Corporation	JFE Shoji Coil Center Corporation	JFE Shoji MatechInc.*2
	JFE Shoji Kohnan Steel Center Co., Ltd.	Kawasho Foods Corporation*2
	Taisei Kogyo Corporation	K&I Tabular Corporation*2
	Toyo Kinzoku Corporation	TohsenCorporation*2
	Naigai Steel Corporation	Hoshi Kinzoku Corporation*2
	NIHON JISEIZAI KOGYO CO., LTD.	Dongguan JFE Shoji Steel Products Co., Ltd.
	Hokuriku Steel Co., Ltd.	Guangzhou JFE Shoji Steel Products Co., Ltd.
	Mizushima Steel Corporation	Zhejiang JFE Shoji Steel Products Co., Ltd.
	Mizushima Metal Products Corporation	Jiangsu JFE Shoji Steel Products Co., Ltd.
	JFE Shoji Electrical Steel Co., LTD.	JFE Shoji Steel Philippines, Inc.
	JFE Shoji Usuitakenzai Corporation*2	Central Metals (Thailand) Ltd.
	JFE Shoji Electronics Corporation*2	JFE Shoji Steel Vietnam Co., Ltd.
	JFE Shoji Pipe & Fitting Corporation*2	JFE Shoji Steel Hai Phong Co., Ltd.
	JFE Shoji Service Corporation*2	JFE Shoji Steel Malaysia Sdn. Bhd.
	JFE Shoji Machinery & Materials Corporation*2	PT. JFE Shoji Steel Indonesia
	JFE Shoji Steel Construction Materials Corporation*2	JFE Shoji Steel de Mexico, S.A. de C.V.
	JFE Shoji Terre One Corporation*2	JFE Shoji Steel India Private Limited
	JFE Shoji Business Support, Inc.*2	Kawarin Enterprise Pte. Ltd.*2 *3

*1 ISO 14001 certification is acquired at all manufacturing bases of JFE Steel and JFE Engineering and at all JFE Shoji's business establishments in Japan.
*2 Excluded from the scope of ESG data collection.
*3 Equity-method affiliates.

Climate Change

■ CO_2 Emissions by Scope

Items	Scope	Unit	FY2016	FY2017	FY2018	FY2019	FY2020
Scopes 1 and 2 total*1	All	million t-CO_2	61.8	62.2	59.9	60.4	53.2
	ST Gr	million t-CO_2	61.7	62.1	59.7	60.0	52.6
	ST*3	million t-CO_2	57.5	58.5	55.4	56.0	49.1
	ST subsidiaries	million t-CO_2	4.2	3.6	4.3	3.9	3.5
	EN Gr	thousand t-CO_2	62.9	56.5	212	403	484
	EN	thousand t-CO_2	16.6	17.3	17.5	16.8	14.1
	EN subsidiaries	thousand t-CO_2	46.3	39.3	195	386	470
	SH Gr*4	thousand t-CO_2	31.7	35.7	36.2	35.3	29.6
	SH	thousand t-CO_2	0.5	0.5	0.5	0.5	0.4
	SH subsidiaries*4	thousand t-CO_2	31.2	35.2	35.8	34.8	29.2
Scope1*5*6	All	million t-CO_2	55.0	54.9	52.3	52.9	46.6
	ST Gr	million t-CO_2	—	—	52.1	52.5	46.2
	ST*3	million t-CO_2	52.6	52.5	49.2	49.8	43.8
	ST subsidiaries	million t-CO_2	—	—	3.0	2.7	2.4
	EN Gr	thousand t-CO_2	—	—	171	361	442
	EN	thousand t-CO_2	—	—	7.8	3.8	2.4
	EN subsidiaries	thousand t-CO_2	—	—	163	357	439

Items	Scope	Unit	FY2016	FY2017	FY2018	FY2019	FY2020
Scope2*2	All	million t-CO_2	6.7	7.4	7.6	7.6	6.5
	ST Gr	million t-CO_2	—	—	7.5	7.5	6.4
	ST*3	million t-CO_2	4.9	6.0	6.2	6.3	5.4
	ST subsidiaries	million t-CO_2	—	—	1.3	1.2	1.1
	EN Gr	thousand t-CO_2	—	—	41.6	42.2	42.4
	EN	thousand t-CO_2	—	—	9.7	12.9	11.6
	EN subsidiaries	thousand t-CO_2	—	—	31.9	29.3	30.8
	SH Gr*4	thousand t-CO_2	31.7	35.7	36.2	35.3	29.6
	SH	thousand t-CO_2	0.5	0.5	0.5	0.5	0.4
	SH subsidiaries*4	thousand t-CO_2	31.2	35.2	35.8	34.8	29.2
Unit CO_2 emissions (numerator: Scopes 1 and 2 total; denominator: sales)*7	All	t-CO_2/ billion yen	18,684	16,898	15,463	16,193	16,470
Scope3*8*9	All	thousand t-CO_2e	13,907	16,272	16,751	16,382	14,369
Category 1 Purchased goods and services	All	thousand t-CO_2e	11,019	13,048	13,371	12,557	11,026
Category 2 Capital goods	All	thousand t-CO_2e	840	921	1,180	1,401	1,226
Category 3 Fuel and energy related activities not included in Scopes 1 or 2	All	thousand t-CO_2e	348	386	370	728	671
Category 4 Upstream transportation and delivery	All	thousand t-CO_2e	647	650	491	489	419
Category 5 Waste generated in operations	All	thousand t-CO_2e	155	87	100	57	45
Category 6 Business travel	All	thousand t-CO_2e	4	4	4	4	4
Category 7 Employee commuting	All	thousand t-CO_2e	46	54	49	49	51
Category 15 Investments	All	thousand t-CO_2e	848	1,122	1,186	1,097	927

*1 Data cover 76 companies
- JFE Steel and 30 major domestic and overseas subsidiaries
- JFE Engineering and 10 major domestic subsidiaries
- JFE Shoji and 33 major domestic and overseas subsidiaries.

*2 CO_2 Emission Factor for Purchased Electricity in FY2020:
- JFE Steel uses the emission factor of the Commitment to a Low Carbon Society of the Japan Iron and Steel Federation for energy purchased in FY2019.
- JFE Steel's domestic consolidated subsidiaries, the JFE Engineering Group, and the JFE Shoji Group apply the adjusted emission factors of each electric power company for each fiscal year.
- Overseas: based on each country's GHG protocol

*3 Data in FY2016 includes the Sendai Works of JFE Bars & Shapes Corporation.
*4 Data for past fiscal years were retroactively revised for increased accuracy.
*5 Data for JFE Steel include CO_2 emissions from non-energy sources.
*6 Starting with FY2018, data for JFE Steel's subsidiaries and JFE Engineering's subsidiary include CO_2 emissions from non-energy sources.
*7 The JFE Group changed its accounting standards from JGAAP to IFRS in FY2018.
*8 Coverage:
(Categories 1, 2, 3, 4, 5)JFE Steel, 25 JFE Steel domestic subsidiaries, JFE Engineering, and JFE Shoji
(Category 6, 7)JFE Steel, 25 JFE Steel domestic subsidiaries, JFE Engineering, 10 JFE Engineering domestic subsidiaries, and JFE Shoji
(Category 15)Japan Marine United, and 9 JFE Steel equity-method affiliates (7 domestic and 2 overseas)
*9 Sources: Green Value Chain Platform (Ministry of the Environment) and others

■ Other Greenhouse Gas

Items		Scope	Unit	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
CO_2 emissions from energy sources	CO_2 emissions (Scopes 1 and 2 total)	ST*1	million t-CO_2	55.7	56.6	53.5	54.2	47.3
		EN Gr*2	thousand t-CO_2	62.9	56.5	66.7	67.5	62.5
	Scope1	ST*1	million t-CO_2	50.8	50.5	47.3	47.9	41.9
	Unit: CO_2 emissions (denominator: crude steel production)	ST*1	t-CO_2/ t-steel	1.94	1.99	2.03	2.03	2.08
CO_2 emissions from non-energy sources		ST Gr*3	million t-CO_2	—	—	2.61	2.65	2.40
		ST	million t-CO_2	1.85	1.91	1.87	1.89	1.82
		ST subsidiaries	million t-CO_2	—	—	0.74	0.76	0.58
		J&T Recycling Co.*4	million t-CO_2	—	—	0.15	0.34	0.42

Items		Scope	Unit	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
GHG emissions other than CO_2		All	thousand t-CO_2e	93.7	94.8	88.7	103.3	96.1
	Methane (CH_4)	All (ST only)	thousand t-CO_2e	73.4	76.2	72.2	72.9	68.3
	N_2O	All	thousand t-CO_2e	20.3	18.6	16.5	30.4	27.9
		ST	thousand t-CO_2e	20.3	18.6	16.5	20.0	15.5
		J&T Recycling Co.*4	thousand t-CO_2e	—	—	—	10.4	12.4
GHG emitted during transportation*5		ST Gr	million t-CO_2	0.65	0.65	0.66	0.65	0.57
		ST	million t-CO_2	0.33	0.37	0.40	0.40	0.34
		ST subsidiaries	million t-CO_2	0.32	0.28	0.26	0.25	0.23
Contribution to CO_2 emission reductions*6		EN Gr	million t-CO_2/year	3.17	4.06	4.12	4.13	9.65
	Biomass power generation	EN Gr	million t-CO_2/year	1.30	1.97	2.12	2.12	2.74
	Waste power generation	EN Gr	million t-CO_2/year	1.61	1.64	1.53	1.53	3.37
	Others (digestion gas, geothermal, solar power, wind, waste heat recovery, fuel conversion, etc.)	EN Gr	million t-CO_2/year	0.26	0.46	0.47	0.48	3.54

*1 Data in FY2016 includes the Sendai Works of JFE Bars & Shapes Corporation.
*2 Data cover JFE Engineering and 10 consolidated subsidiaries in Japan.
*3 Data cover JFE Steel and 2 consolidated subsidiaries in Japan.
*4 J&T Recycling Co. is a domestic subsidiary of JFE Engneering.
*5 Data cover JFE Steel and 11 domestic and overseas subsidiaries, which are specified consigners designated under the Japanese Energy Saving Act.
*6 Data cover only JFE Engineering's domestic businesses up to FY2019, and from FY2020 the data cover JFE Engineering's domestic and overseas businesses and its German subsidiary Standardkessel Baumgarte GmbH (SBG).

■ Energy

Items		Scope	Unit	FY2016	FY2017	FY2018	FY2019	FY2020
Energy consumption and unit energy consumption	Energy consumption	All	PJ	—	—	—	670	592
		ST Gr	PJ	—	—	—	668.6	590.6
		ST*1	PJ	640.9	644.0	613.3	619.8	545.3
		ST subsidiaries	PJ	—	—	—	48.8	45.2
		EN Gr	PJ	—	—	—	1.3	1.2
		SH Gr	PJ	—	—	—	0.6	0.6
	Unit energy consumption (crude steel production)	ST*1	GJ/ t-steel	22.3	22.6	23.3	23.2	24.0
	Energy consumption (Crude petroleum equivalent)	EN	kl	10,665	10,960	10,886	8,788	8,000
	YOY ratio of unit energy consumption	EN	%	92.9	97.4	95.4	80.7	91.0
Recovered energy for recycling	Supplied to society	ST	%	35	37	39	39	38
	Consumed internally	ST	%	65	63	61	61	62

*1 Data from in FY2016 includes Sendai Works of JFE Bars & Shapes Corporation.

■ Modal Shift Rate

Items		Scope	Unit	FY2016	FY2017	FY2018	FY2019	FY2020
All transportation	Ship and rail	ST	%	66.1	66.1	60.2	59.6	58.4
	Truck	ST	%	33.9	33.9	39.8	40.4	41.6
Transportation of a distance of 500 km or more	Ship and rail	ST	%	94.7	92.7	91.6	90.9	91.6
	Truck	ST	%	5.3	7.3	8.4	9.1	8.4

Scope of calculation: All products and half-finished products transported in Japan

Climate Change (Supplementary Data)

■ CO_2 Emissions and Energy Consumption of JFE Steel Group Subsidiaries (FY2020)

Company name	CO_2 emissions (unit: t-CO_2)	Energy consumption (unit: GJ)
JFE MINERAL COMPANY, LTD.	284,369	5,102,698
JFE Bars & Shapes Corporation	463,613	8,855,335
Mizushima Ferroalloy Co., Ltd.	296,644	3,012,398
JFE Chemical Corp.	231,782	4,706,668
JFE LOGISTICS CORPORATION	156,613	2,249,469
JFE Material Co., Ltd.	60,496	1,107,822
JFE Galvanizing & Coating Co., Ltd.	59,593	1,252,613
JFE ROCKFIBER CORPORATION	34,483	557,574
JFE Pipe Fitting Mfg. Co., Ltd.	15,246	356,383
JFE Plastic Resource Corporation	20,853	377,933
MIZUSHIMA RIVERMENT CORP.	11,464	161,650
JFE Container Co., Ltd.	10,206	208,281
J-Logitec Co., Ltd.	8,240	120,150
Galvatex Corporation	4,504	88,212
JFE Metal Products & Engineering Inc.	8,161	198,578
JFE Welded Pipe Manufacturing Co., Ltd.	7,870	156,619
JFE Techno-wire Corporation	4,992	110,067
JFE PRECISION CORPORATION	4,783	88,015
K-PLASHEET CORPORATION	4,847	83,826
JFE LIFE CORPORATION	6,750	125,560
CHIBA RIVERMENT AND CEMENT CORP.	6,779	132,610
JFE KENZAI FENCE CO., LTD.	3,484	63,264
JFE Steel Pipe Co., Ltd.	3,043	64,927
GECOSS CORPORATION	2,985	61,455
JFE Kozai Corporation	2,855	62,550
5 overseas companies	1,207,692	15,925,097
Total	2,918,390	45,229,754

■ CO_2 Emissions from Energy Sources and Energy Consumption of JFE Engineering Group Subsidiaries (FY2020)

Company name	CO_2 emissions (unit: t-CO_2)	Energy consumption (unit: GJ)
J&T Recycling Corporation	39,686	770,206
J Farm Corporation	3,023	56,707
Fujikako, Inc.	1,606	36,102
NORTHERN JAPAN MACHINERY Corporation	1,012	16,860
Tohoku Dock Ironworks Corporation	940	17,246
JFE Environmental Service Corporation	730	12,197
Asuka Soken Co,. Ltd.	891	15,362
JFE Pipeline Engineering Corporation	362	5,939
JFE Technos Corporation	183	3,075
JFE Aqua Machine and Service Corporation	21	656
Total	48,454	934,349

Prevention of Pollution

■ Air Emissions

Items	Scope	Unit	FY2016	FY2017	FY2018	FY2019	FY2020
SOx emissions*1	ST Gr	million Nm^3	4.5	4.7	4.1	4.3	3.3
	ST	million Nm^3	4.5	4.6	4.1	4.3	3.3
	ST subsidiaries	million Nm^3	0.03	0.05	0.04	0.04	0.03
NOx emissions*1	ST Gr	million Nm^3	11.1	11.7	10.7	11.3	10.4
	ST	million Nm^3	10.9	11.5	10.5	11.1	10.3
	ST subsidiaries	million Nm^3	0.22	0.20	0.19	0.17	0.14

*1 13 JFE Steel consolidated subsidiaries in Japan.

■ Release to Waterways

Items	Scope	Unit	FY2016	FY2017	FY2018	FY2019	FY2020
COD (chemical oxygen demand)	ST	t/day	3.1	3.0	3.3	3.2	2.9
	ST subsidiaries*1	t/day	0.13	0.14	0.17	0.15	0.17
	EN*2	kg/day	6.1	5.6	6.8	8.4	8.7

*1 15 JFE Steel consolidated subsidiaries in Japan.
*2 This report uses the maximum value of each year.

■ Chemical Substances Management

Items		Scope	Unit	FY2016	FY2017	FY2018	FY2019	FY2020
PRTR-registered substances*1*2	Amount released	All*3	t	—	—	1,019	918	754
		ST Gr	t	842	897	814	766	596
		ST	t	429	516	545	481	341
		ST subsidiaries	t	413	381	269	285	255
		EN Gr	t	—	—	205	152	158
		EN	t	87	85	147	107	121
		EN subsidiaries	t	—	—	58.4	45.4	36.7
	Amount transferred	All*3	t	—	—	9,210	7,866	5,949
		ST Gr	t	7,047	8,934	9,176	7,832	5,910
		ST	t	2,212	2,726	2,533	1,865	1,694
		ST subsidiaries	t	4,835	6,208	6,643	5,967	4,216
		EN Gr	t	—	—	34	34	39
		EN	t	28	28	28	29	26
		EN subsidiaries	t	—	—	5.7	5.4	12.5

*1 Coverage:
- JFE Steel and 18 consolidated subsidiaries in Japan.
- JFE Engneeringand 4 consolidated subsidiaries in Japan.

*2 Excluding dioxins
*3 JFE Shoji is not included in the scope of the report as the company is not subject to PRTR registration.

Prevention of Pollution (Supplementary Data)

■ SOx and NOx Emissions of JFE Steel Group Subsidiaries (FY2020)

Company name	SOx emissions(unit: Nm^3)	NOx emissions(unit: Nm^3)
JFE MINERAL COMPANY, LTD.	4,258	35,642
JFE ROCKFIBER CORPORATION	0	0
Mizushima Ferroalloy Co., Ltd.	221	21,523
JFE Material Co., Ltd.	4,964	24,242
CHIBA RIVERMENT AND CEMENT CORP.	113	953
MIZUSHIMA RIVERMENT CORP.	0	625
JFE PRECISION CORPORATION	2,197	126
JFE Plastic Resource Corporation	144	284
JFE Bars & Shapes Corporation	3,397	8,985
JFE Metal Products & Engineering Inc.	53	1,364
JFE KENZAI FENCE CO., LTD.	0	0
JFE Galvanizing & Coating Co., Ltd.	1,756	11,186
JFE Container Co., Ltd.	108	0
JFE Welded Pipe Manufacturing Co., Ltd.	0	0
JFE Steel Pipe Co., Ltd.	0	0
Galvatex Corporation	0	449
JFE Pipe Fitting Mfg. Co., Ltd.	22	759
JFE Techno-wire Corporation	0	0
JFE Kozai Corporation	0	0
GECOSS CORPORATION	0	0
JFE LOGISTICS CORPORATION	0	0
J-Logitec Co., Ltd.	0	0
JFE Chemical Corp.	8,811	35,949
K-PLASHEET CORPORATION	163	0
JFE LIFE CORPORATION	0	0
Total	26,207	142,087

Efficient Use of Natural Resources

■ Natural Resources

Items			Scope	Unit	FY2016	FY2017	FY2018	FY2019	FY2020
Input	Raw materials for steel production		ST	million tonnes	70.1	71.3	66.0	67.0	58.7
		Iron ore	ST	million tonnes	43.5	43.5	40.1	41.4	35.4
		Coal	ST	million tonnes	21.0	22.0	20.6	20.3	18.1
		Lime	ST	million tonnes	5.6	5.8	5.3	5.3	5.2
	Recycled materials (steel scrap)		ST	million tonnes	0.7	1.2	1.3	1.1	0.8
	Raw materials		EN	thousand tonnes	39.1	41.8	47.3	39.4	36.9
Products supplied	Steel products		ST*1	million tonnes	28.8	28.5	26.3	26.7	22.8
	Engineering products		EN	thousand tonnes	36.1	39.7	44.5	36.6	34.7

*1 Data in FY2016 includes the Sendai Works of JFE Bars & Shapes Corporation.

■ Co-products and Wastes

Items			Scope	Unit	FY2016	FY2017	FY2018	FY2019	FY2020
Co-products	Amount generated*1		ST Gr	million tonnes	15.3	16.2	16.1	15.6	13.9
			ST	million tonnes	14.5	15.7	15.3	15.1	13.4
			ST subsidiaries	million tonnes	0.8	0.5	0.8	0.5	0.5
	Amount recycled internally		ST	million tonnes	3.7	4.2	6.0	5.0	3.3
	Internal recycle rate		ST	%	25.4	27.5	39.3	32.9	24.9
	Landfill amount*1		ST Gr	million tonnes	0.087	0.081	0.081	0.074	0.060
			ST	million tonnes	0.045	0.047	0.052	0.043	0.037
			ST subsidiaries	million tonnes	0.042	0.034	0.029	0.031	0.023
	Recycling rate		ST	%	99.7	99.7	99.7	99.7	99.7

Items		Scope	Unit	FY2016	FY2017	FY2018	FY2019	FY2020
Marine, land, and civil engineering material (using co-products)	Co-products generated	ST	million tonnes	14.5	15.4	15.3	15.1	13.4
	Used by local communities	ST	million tonnes	10.8	11.2	9.2	10.1	10.0
	Rate of local communities use	ST	%	74.3	72.2	60.4	66.8	74.8
Wastes	Amount generated*2*3	EN Gr	thousand tonnes	—	158.0	131.7	211.0	159.1
	Offices	EN	t	320.8	429.8	386.4	367.1	329.2
		Yokohama HO	t	241.7	357.1	299.9	299.0	256.9
		Tsu works	t	79.1	72.7	86.5	68.2	72.3
	Productions	EN	t	973.2	773.0	1,039.3	1,340.5	1,072.3
		Tsurumi works	t	443.4	302.3	506.6	653.8	519.8
		Tsu works	t	529.8	470.7	532.7	686.7	552.5
	Constructions	EN	t	101,812.2	88,140.4	109,045.2	145,397.7	97,387.9
	Subsidiaries	EN subsidiaries	t	—	69,835.7	22,634.4	63,876.7	60,296.7
	Landfill	EN	t	1,954.4	1,666.5	2,125.1	4,489.3	2,011.6
	Offices	EN	t	8.4	9.0	10.7	8.5	9.1
		Yokohama HO	t	3.3	4.3	4.1	3.3	2.1
		Tsuworks	t	5.1	4.7	6.6	5.2	7.0
	Productions	EN	t	329.8	289.0	353.3	312.6	351.2
		Tsurumi works	t	67.0	70.6	83.2	77.3	75.2
		Tsuworks	t	262.8	218.4	270.1	235.3	276.0
	Constructions	EN	t	1,616.2	1,368.5	1,761.1	4,168.2	1,651.3
	Recycling rate	EN	%	96.3	96.7	97.0	95.8	95.9
	Recycling rate (offices)	EN	%	96.9	97.6	96.7	97.3	96.8
		Yokohama HO	%	98.5	98.7	98.5	98.8	99.1
		Tsuworks	%	88.9	89.0	85.2	85.2	87.2
	Recycling rate (production)	EN	%	53.4	45.3	46.8	68.0	48.8
		Tsurumi works	%	78.9	61.0	68.7	79.4	72.0
		Tsuworks	%	32.5	37.0	32.1	60.9	33.8
	Recycling rate (construction)	EN	%	98.4	98.4	98.4	97.1	98.3

*1 Data cover JFE Steel and 25 consolidated subsidiaries in Japan.

*2 Data cover JFE Engineering and 10 consolidated subsidiaries in Japan.

*3 Data from FY2019 includes wastes generated at offices and productions of JFE Engneering.

■ Wastes at JFE Engineering Construction Sites

Items		Scope	Unit	FY2016	FY2017	FY2018	FY2019	FY2020
Rubble	Amount generated	EN	t	56,767	58,824	78,410	113,637	78,100
	Landfill amount	EN	t	414	94	297	1,533	484
	Recycle rate	EN	%	99.3	99.8	99.6	98.6	99.4
Sludge	Amount generated	EN	t	21,814	23,463	16,142	17,225	12,399
	Landfill amount	EN	t	98	849	199	205	135
	Recycle rate	EN	%	99.5	96.3	98.8	98.8	98.9
Industrial waste excluding rubble and sludge	Amount generated	EN	t	23,231	5,853	14,494	14,535	6,888
	Landfill amount	EN	t	1,103	425	1,265	2,430	1,032
	Recycle rate	EN	%	95.0	92.2	91.0	82.1	83.4

■ Paper Consumption at JFE Shoji

Items	Scope	Unit	FY2016	FY2017	FY2018	FY2019	FY2020
Consumption of copier papers	SH	boxes	4,904	5,100	4,832	4,675	3,116
	Tokyo	boxes	2,614	2,674	2,661	2,516	1,333
	Osaka	boxes	545	527	372	399	405
	Nagoya	boxes	305	308	217	293	157
	Branch	boxes	1,440	1,591	1,582	1,467	1,221

Efficient Use of Natural Resources (Supplementary Data)

■ Examples of Recycling and Processing at JFE Group (FY2020)

Content		Unit	Volume
Plastic containers and packaging bidding		million tonnes	0.09
Using waste plastics in the iron and steelmaking process	Used directly in the iron and steelmaking process	million tonnes	0.05
	Collected as gas and used as fuel	million tonnes	0.05
Treating fluorescent tubes		million tubes	20
Waste home appliances		million units	0.50

■ List of JFE Group's Recycling Businesses

Area	Name of company, plant, business establishment, etc.	Plant	Addresses
Sapporo	Sapporo Bio Food Recycle Corporation	Food waste recycling plant	45-53 Nakanuma-cho, Higashi-ku Sapporo-shi, Hokkaido
Sendai	J&T Recycling Corporation Sendai Plant	Sendai plastic packaging-waste sorting and baling plant Plastic material recycling plant Fluorescent tube recycling plant Recycled pallet manufacturing plant Confidential documents disposal plant	1-6-1 Minato, Miyagino-ku Sendaishi, Miyagi same as above same as above same as above same as above
	Rifu Plant	Refuse paper and plastic (RPF) manufacturing plant	6-5-14 Shirakashidai, Rifu-cho Miyagi-gun, Miyagi
Kashima	JFE Bars & Shapes Corporation	Electric furnace recycle plant Direct current arc furnace	7 Minamihama, Kamisu-shi, Ibaraki
Chiba	J&T Recycling Corporation Chiba Recycle Center	Waste gasifying and melting furnace	1 Kawasaki-cho, Chuo-ku Chibashi, Chiba
	Chiba Biogas Center	Food waste recycling plant	same as above
Tokyo	J&T Recycling Corporation Tokyo Waterfront Eco Clean	Fluidized bed gasification and melting furnace (industrial) Vertical furnace (medical)	Oumi 3-chome chisaki, Koto-ku, Tokyo same as above
Kawasaki	J&T Recycling Corporation Ohgishima Plant	Waste plastic recycling plant	10 Ohgishima, Kawasaki-ku Kawasaki-shi, Kanagawa
	Kawasaki PET Bottle Recycling Plant	Waste PET bottle recycling plant	5-1 Mizue-cho, Kawasaki-shi Kawasaki-ku, Kanagawa
	Kawasaki Eco Clean	Kiln-stoker incinerator	5-73 Ohgimachi, Kawasaki-ku Kawasaki-shi, Kanagawa (and other locations)
		Solid waste recycling plant	same as above
	JFE Plastic Resource Corporation Mizue Recycling Plant	Waste plastic recycling plant	699-23 Mizue-cho, Kawasaki-ku Kawasaki-shi, Kanagawa (and other locations)
	NF Board® manufacturing plant	NF Board® manufacturing plant	5-1 Mizue-cho, Kawasaki-ku Kawasaki-shi, Kanagawa
	JFE Urban Recycle Corporation Home Appliance Recycling plant	Consumer/office appliance recycling plant	6-1 Mizue-cho, Kawasaki-ku Kawasaki-shi, Kanagawa
Yokohama	J&T Recycling Corporation Yokohama Eco Clean	Kiln-stoker incinerator	2-1-5 Suehiro-cho, Tsurumi-ku Yokohama-shi, Kanagawa (and other locations)
		Kiln-ash melting furnace	same as above
	Chemical Works	Liquid/sludge waste intermediate-treatment plant	3-1 Benten-cho,Tsurumi-ku Yokohama-shi, Kanagawa
	Tsurumi Fluorescent Tube Recycling Plant	Dry cell battery and battery recycling plant Fluorescent tube recycling plant	2-1-8 Suehiro-cho, Tsurumi-ku Yokohama-shi, Kanagawa same as above
	Yokohama Plastics Recycling Plant	Yokohama City plastic packaging-waste sorting and baling plant	same as above
	Kanazawa Recycling Plant	Solid waste recycling plant	1-14-5 Fukuura, Kanazawa-ku Yokohama-shi, Kanagawa

Area	Name of company, plant, business establishment, etc.	Plant	Addresses
Yokohama	J Bio Food Recycle Co., Ltd. Yokohama Plant	Food waste recycling plant	2-1-5 Suehiro-cho, Tsurumi-ku Yokohama-shi, Kanagawa
Kurashiki (Mizushima)	Mizushima Eco-works Co., Ltd.	Waste gasifying and melting furnace	1-14-5 Kawasaki-dori, Mizushima, Kurashiki-shi, Okayama
	JFE Environmental Service Corporation Kurashiki Works	Waste wood carbonizing facility	1-14-1 Kawasaki-dori, Mizushima, Kurashiki-shi, Okayama
	JFE Bars & Shapes Corporation	Electric furnace recycling plant Direct current arc furnace	1-5-2 Kawasaki-dori, Mizushima, Kurashiki-shi, Okayama (and other locations)
Fukuyama	JFE Plastic Resource Corporation Fukuyama Recycling Plant	Waste plastic recycling plant	113 Minoki-cho, Fukuyamashi, Hiroshima
	J&T Recycling Corporation Fukuyama RPF Plant Fukuyama PM Recycling Plant Fukuyama Palette Plant Steel Works	RPF manufacturing plant Plastic material recycling plant Recycled pallet manufacturing plant Kiln incinerator Controlled landfill Liquid waste neutralization plant	115-1 Minoki-cho, Fukuyamashi, Hiroshima same as above same as above 1 Kokan-cho, Fukuyama-shi, Hiroshima same as above same as above
	Fukuyama Recycle Electric Generation Co., Ltd.	Refuse-derived fuel (RDF) gasifying power generation plant (commissioned operation)	107-8 Minoki-cho, Fukuyamashi, Hiroshima
Toyama	JFE Material Co., Ltd.	Rare metal recovery plant for spent catalysts	2-9-38 Shosei-machi, Imizushi, Toyama

Water Security

■ Water

Items	Scope	Unit	FY2016	FY2017	FY2018	FY2019	FY2020
Amount of water accepted*1	All	million tonnes	—	241	240	242	237
	ST Gr	million tonnes	238	241	238	241	236
	ST	million tonnes	213	220	218	221	215
	ST subsidiaries	million tonnes	24.9	20.6	20.5	19.8	20.9
	EN Gr	thousand tonnes	—	832	918	1,410	1,300
	EN	thousand tonnes	94	97	102	106	72
	EN subsidiaries	thousand tonnes	—	735	816	1,304	1,228
	SH Gr	thousand tonnes	140	166	165	149	160
	SH	thousand tonnes	—	—	—	—	—
	SH subsidiaries	thousand tonnes	140	166	165	149	160
Amount of water released*2	ST Gr	million tonnes	—	146	144	143	141
	ST	million tonnes	127	128	126	126	123
	ST subsidiaries	million tonnes	—	17.8	18.0	17.0	18.3
	EN	thousand tonnes	148	140	146	126	157
Amount of water consumption*2	ST Gr	million tonnes	3,753	3,690	3,665	3,616	3,331
	ST	million tonnes	3,414	3,410	3,376	3,323	3,066
	ST subsidiaries	million tonnes	339	280	289	293	265
Amount evaporated	ST	million tonnes	86	92	92	95	92
Ratio of amount released and evaporated	ST	%	6.3	6.5	6.5	6.6	7.0
Amount recycled*2	ST Gr	million tonnes	3,515	3,449	3,427	3,375	3,096
	ST	million tonnes	3,201	3,190	3,158	3,102	2,851
	ST subsidiaries	million tonnes	314	259	269	273	245
Recycling rate*2*3	ST	%	93.8	93.5	93.5	93.4	93.0
	ST subsidiaries	%	91	93	93	93	92

*1 Coverage:
- JFE Steel and 25 consolidated subsidiaries in Japan.
- JFE Engineering and 7 consolidated subsidiaries in Japan.
- 31 JFE Shoji domestic and overseas consolidated subsidiaries.

*2 25 JFE Steel consolidated subsidiaries in Japan.

*3 Industrial water circulated (%) = (Total amount − industrial water accepted)/total amount used × 100

■ Water Related Data by Water Intake Source and Discharge Source

Items	Scope	Unit	FY2017*1	FY2018*1	FY2019*1	FY2020
Total amount accepted	All*2	million tonnes	220.6	219.3	222.0	215.5
River/lake		million tonnes	0	0	0	0
Groundwater		million tonnes	0	0	0	0
Industrial water/waterworks		million tonnes	220.6	219.3	222.0	215.5
Ocean		million tonnes	0	0	0	0
Rainwater		million tonnes	0	0	0	0
Other intake source		million tonnes	0	0	0	0
Total amount released	All*2	million tonnes	130.2	127.5	127.9	125.0
Ocean		million tonnes	129.7	127.0	127.5	124.5
Surface water		million tonnes	0	0	0	0
Underground/well		million tonnes	0	0	0	0
Off-site water processing		million tonnes	0.4355	0.4431	0.4502	0.4796
Beneficial use/other use		million tonnes	0	0	0	0
Other discharge source		million tonnes	0	0	0	0

*1 Data for past fiscal years were retroactively revised for increased accuracy.
*2 Data cover JFE Steel and JFE Engineering.

Water Security (Supplementary Data)

■ Amount of Water Accepted and Released at JFE Steel Group Subsidiaries (FY2020)

Company name	Amount accepted (unit:tonnes)	Amount released (unit:tonnes)
JFE MINERAL COMPANY, LTD.	2,439,154	2,440,952
JFE ROCKFIBER CORPORATION	62,010	62,010
Mizushima Ferroalloy Co., Ltd.	419,063	24,709
JFE Material Co., Ltd.	4,049,364	4,049,364
CHIBA RIVERMENT AND CEMENT CORP.	17,435	17,435
MIZUSHIMA RIVERMENT CORP.	16,594	16,594
JFE PRECISION CORPORATION	437,485	437,485
JFE Plastic Resource Corporation	15,871	12,817
JFE Bars & Shapes Corporation	4,767,501	3,046,728

Company name	Amount accepted (unit:tonnes)	Amount released (unit:tonnes)
JFE Metal Products & Engineering Inc.	94,652	124,699
JFE KENZAI FENCE CO., LTD.	68,390	68,390
JFE Galvanizing & Coating Co., Ltd.	822,695	637,519
JFE Container Co., Ltd.	250,560	250,560
JFE Welded Pipe Manufacturing Co., Ltd.	43,853	43,853
JFE Steel Pipe Co., Ltd.	1,554	1,554
Galvatex Corporation	700,980	700,980
JFE Pipe Fitting Mfg. Co., Ltd.	3,742	33,672
JFE Techno-wire Corporation	80,763	80,763
JFE Kozai Corporation	13,673	13,673
GECOSS CORPORATION	68,004	62,350
JFE LOGISTICS CORPORATION	103,048	103,048
J-Logitec Co., Ltd.	3,233	3,233
JFE Chemical Corp.	5,936,163	5,616,840
K-PLASHEET CORPORATION	31,123	17,307
JFE LIFE CORPORATION	494,266	481,084
Total	20,941,176	18,347,619

■ Amount of Water Accepted at JFE Engineering Group Subsidiaries (FY2020)

Company name	Amount accepted (unit: thousand tonnes)
J&T Recycling Corporation	1,164
JFE Environmental Service Corporation	0.03
NORTHERN JAPAN MACHINERY Corporation	0.003
Tohoku Dock Ironworks Corporation	33.2
JFE Aqua Machine and Service Corporation	0.002
Fujikako, Inc.	0.02
J Farm Corporation	31.0
Total	1,228

Social Data

Responsibility to Customers

■ Customer Training (FY2019*1)

Name of training	Scope	Unit	Participants
Technical presentation by overseas Group companies (number of participating companies*2)	JFE Shoji	People (companies)	33 (15)
Training for overseas employees	JFE Shoji	People	24

*1 The table shows FY2019 results since customer training sessions were canceled in FY2020 due to the COVID-19 pandemic.
*2 Data covers 9 countries for the number of participating companies.

Occupational Health and Safety

■ Lost-work Injuries and Accidents

Items		Scope*1	Unit	2016	2017	2018	2019	2020
Lost-work Injuries and Severity (Rates)	Lost-work injuries*2	JFE Steel	—	0.21	0.17	0.17	0.28	0.23
	Severity*3		—	0.15	0.15	0.15	0.30	0.08
	Lost-work injuries*2	JFE Engineering	—	0.19	0.71	0.82	0.45	0.35
	Severity*3		—	0.30	0.02	0.02	0.62	0.01
	Lost-work injuries*2	JFE Shoji Group	—	1.16	1.22	0.60	1.00	0.76
	Severity*3		—	0.41	0.97	0.04	0.02	0.04
	Lost-work injuries*2	Manufacturing industry average	—	1.15	1.02	1.20	1.20	1.21
	Severity*3		—	0.07	0.08	0.10	0.10	0.07

Items		Scope*1	Unit	2016	2017	2018	2019	2020
Number of lost-work injuries	Lost-work injuries	JFE Group	Cases	35	42	41	49	36
	Fatal injuries		Cases	3	3	2	6	1
	Lost-work injuries	JFE Steel	Cases	22	18	18	30	23
	Fatal injuries		Cases	2	2	2	4	1
	Lost-work injuries	JFE Engineering	Cases	4	14	18	11	7
	Fatal injuries		Cases	1	0	0	2	0
	Lost-work injuries	JFE Shoji Group	Cases	9	10	5	8	6
	Fatal injuries		Cases	0	1	0	0	0
Lost-work Injuries Involving Employees	Lost-work injuries	JFE Group	Cases	14	13	13	18	15
	Fatal injuries		Cases	1	2	1	1	0
	Lost-work injuries	JFE Steel	Cases	6	4	7	10	9
	Fatal injuries		Cases	1	1	1	1	0
	Lost-work injuries	JFE Engineering	Cases	0	0	1	2	2
	Fatal injuries		Cases	0	0	0	0	0
	Lost-work injuries	JFE Shoji Group	Cases	8	9	5	6	4
	Fatal injuries		Cases	0	1	0	0	0
Lost-work injuries involving employees of contractors	Lost-work injuries	JFE Group	Cases	21	29	28	31	21
	Fatal injuries		Cases	2	1	1	5	1
	Lost-work injuries	JFE Steel	Cases	16	14	11	20	14
	Fatal injuries		Cases	1	1	1	3	1
	Lost-work injuries	JFE Engineering	Cases	4	14	17	9	5
	Fatal injuries		Cases	1	0	0	2	0
	Lost-work injuries	JFE Shoji Group	Cases	1	1	0	2	2
	Fatal injuries		Cases	0	0	0	0	0

*1 Scope of data:
- JFE Steel and JFE Engineering: parent company, business associates and contractors in Japan
- JFE Shoji : parent and consolidated subsidiaries, business associates and contractors in Japan

*2 Lost-work injuries (rate) = number of employees with lost-work injuries/total working hours × 1,000,000

*3 Severity = number of lost working days/total working hours × 1,000

■ Health and Safety Training (2020)

Items	Unit	Participants*
Training for managers and supervisors	People	331
Mental healthcare education for new hires and at rank-based training	People	749

* Total of 3 operating companies.

■ Employee Health Data

Items	Scope	Unit	2016	2017	2018	2019	2020
Metabolic syndrome rates	Insured by the JFE Group's health insurance union (age 40 and above)	%	35.4	35.9	36.0	35.6	36.5
Smoking rates		%	33.2	32.6	31.7	31.1	30.0
Rate of health examination for dependents	Age 40 and above	%	42.1	43.7	48.2	51.5*	46.3

*Data in 2019 have been revised from preliminary to final data.

■ Health Data for Employees and Their Family

Items	Scope	Unit	2016	2017	2018	2019*2	2020
Provision rate of health guidance	JFE Steel	%	17.8	36.8	56.9	64.2	53.0
	JFE Engineering	%	12.9	22.7	22.1	39.6	39.1
	JFE Shoji	%	21.9	25.0	45.2	36.0	41.6
Rate of health examination for dependents*1	JFE Steel	%	45.7	46.0	52.3	49.4	48.0
	JFE Engineering	%	46.4	47.3	54.2	52.4	47.2
	JFE Shoji	%	53.5	55.1	52.4	61.7	53.2

*1 Scope: dependents (including spouses and others) age 40 and above

*2 Data in 2019 have been revised from preliminary to final data.

Labor Practice

■ Employee Data (2020)

Category	Consolitaded/ non-consolitaded	Unit	JFE Steel	JFE Engineering	JFE Shoji
Employees	Conslidated*1	people	45,797	10,612	7,910
Male		people	40,054	9,141	5,757
Female		people	5,743	1,471	2,153
Management positions*3		people	11,717	3,508	1,625
Male		people	11,022	3,311	1,418
Female		people	695	197	207
Ratio of women in management positions		%	5.9	5.6	12.7
Employees	Non-consloitaded*2	people	16,089	3,866	1,003
Male		people	14,718	3,324	598
Female		people	1,371	542	405
Management positions*3		people	2,781	2,401	629
Male		people	2,616	2,257	592
Female		people	165	144	37
Ratio of women in management positions		%	5.9	6.0	5.9
Recruits		people	489	138	43
Male		people	452	122	24
Female		people	37	16	19
New graduates		people	448	77	40
Mid-career		people	41	61	3
Years of continuous employment (average)		year	15.8	14.4	14.0
Male		year	15.4	14.4	14.7
Female		year	18.2	14.5	12.8
Job turnover rate*4 (Total 2.9%)		%	3.1	1.5	3.7
Rehired employees		people	626	44	31
Ratio of rehired employees		%	3.9	1.1	3.1
Average annual leave taken		day/year	13.2	17.2	10.4
Average overtime		hours/ month	15.0	24.3	29.8
Employees working shorter hours for childcare (aggregated)		people	81	70	62
Temporary staffs		people	169	652	16

*1 Scope of data: Consolidated subsidiaries (JFE Steel: 149, JFE Engineering: 72, JFE Shoji: 88)
*2 As of April 1, 2021. Other figures are as of FY2020.
*3 Management positions at JFE Shoji include employees on loan.
*4 Percentage of employees who voluntarily choose to resign from the organization.

■ Recruiting (Three Operating Companies, Excluding their Subsidiaries) for New Graduates (FY2021) and Mid-career Recruits (FY2020)

Items	Unit	Career-track Positions			On-site and Clerical Positions	Total
		White-collar	Technical	Total		
Male	people	66	200	266	332	598
Female	people	20	20	40	32	72
Total	people	86	220	306	364	670
Ratio of women	%	23.3	9.1	13.1	8.8	10.7

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

Items	Scope	Unit	2016	2017	2018	2019	2020
Employment of People with Disabilities	JFE Steel	%	2.34	2.33	2.41	2.48	2.51
	JFE Engineering	%	2.01	2.14	2.39	2.23	2.37
	JFE Shoji	%	1.86	2.20	2.62	2.50	2.39

Community

■ Social Contributions (FY2020)

Activities		Scope		Unit	Achievements
Internships		JFE Group		People	1,571
			JFE Steel	People	400
			JFE Engineering	People	586
			JFE Shoji	People	585
Supporting elementary schools in Ghana and Nigeria	Masks for children	JFE Shoji		Masks	12,500
	Notebooks			Books	17,000
	Canned foods			Cans	12,500

■ JFE 21st Century Foundation (FY2020)

Grants		Projects	Value (million yen)
Technology research (accumulated)		654	1,315.8
Technology research for FY2020	Iron and steel technology research	9	18
	Global environment and global warming prevention technology research	13	26
technology research 13 26		138	207
Asian history studies for FY2020		8	12
Activities		Sets donated	
Supporting the Japan Overseas Educational Services Writing Contest and anthology donation (to elementary and middle schools and also public libraries in the regions related to steel*)		2,400	

* Donated to 663 elementary and middle schools and 73 public libraries.

Shareholders and Investors

■ Major IR Activities (FY2020)

Major communication methods, etc.	Number of sessions	participation (people)
Investors meeting, ESG briefings	5	Approx.600
Individual interviews with institutional investors and securities analysts	As needed	Approx.300
Briefings for Individual investor (at the branch offices of securities firms, etc.)	4	Approx.1,500

■ Plant Tours and Company Briefing Sessions (FY2019*)

Activities	Scope	Number of sessions	Participants
Plant tours and company briefing sessions	JFE Steel JFE Engineering Japan Marine United	23	1,800

*This table shows FY2019 results since plant tours and company briefing sessions were canceled in FY2020 due to the COVID-19 pandemic.

Governance Data

Corporate Governance

■ Corporate Governance System

As of July 1, 2021

Items	Overview of the system
Organizational design type	Company with an Audit & Supervisory Board
Number of Directors (members)	8
The number of Independent Outside Directors (members)	3
The number of female Directors (member)	1
Number of Audit & Supervisory Board Members (members)	5
The number of Independent Outside Audit & Supervisory Board Members (members)	3
The number of femal Audit & Supervisory Board Members (members)	1
Term for Directors (years)	1
Term for Outside Directors (years)	1
Corporate Officer System	Adopted
Voluntary advisory committees of the Board of Directors	Nomination Committee and Remuneration Committee

■ Directors and Audit & Supervisory Board members

As of July 1, 2021

Position		Name	Significant concurrent post	Independent executive	Number of meetings of the Board of Directors attended in FY2020	Number of meetings of the Audit & Supervisory Board attended in FY2020
Director	Inside	Koji Kakigi	Chairman of the Board of Directors of JFE 21st Century Foundation (Public Interest Incorporated Foundation)	—	15/15 (100%)	—
		Yoshihisa Kitano	Representative Director, President and CEO of JFE Steel Corporation	—	15/15 (100%)	—
		Masashi Terahata	Director of JFE Steel Corporation, Representative Director of JFE 21st Century Foundation (Public Interest Incorporated Foundation)	—	15/15 (100%)	—

Position		Name	Significant concurrent post	Independent executive	Number of meetings of the Board of Directors attended in FY2020	Number of meetings of the Audit & Supervisory Board attended in FY2020
Director	Inside	Hajime Oshita	Representative Director, President and CEO of JFE Engineering Corporation	—	15/15 (100%)	—
		Toshinori Kobayashi	Representative Director, President and CEO of JFE Shoji Corporation	—	—	—
	Outside	Masami Yamamoto	Director and Senior Advisor of Fujitsu Limited, Outside Director of Mizuho Financial Group, Inc.	○	15/15 (100%)	—
		Nobumasa Kemori	Honorary Advisor of umitomo Metal Mining Co., Ltd., Outside Director of NAGASE & CO., LTD., Outside Director of Sumitomo Realty & Development Co., Ltd.	○	15/15 (100%)	—
		Yoshiko Ando	Audit & Supervisory Board Member of Kirin Holding Company, Limited, Outside Director of Sansei Technologies, Inc.	○	12/12 (100%)	—
Audit & Supervisory Board Member	Inside	Nobuya Hara	Audit & Supervisory Board Member of JFE Steel Corporation	—	15/15 (100%)	18/18 (100%)
		Kumiko Baba	Audit & Supervisory Board Member of JFE Engineering Corporation, Audit & Supervisory Board Member of JFE Shoji Corporation	—	15/15 (100%)	18/18 (100%)
	Outside	Shigeo Oyhagi	Advisor of Teijin Limited, Outside Director of KDDI CORPORATION, Outside Director of MUFG Bank, Ltd, Outside Director of Tokyo Electric Power Company Holdings, Inc.	○	15/15 (100%)	18/18 (100%)
		Isao Saiki	Partner Lawyer of Abe, Ikubo & Katayama Law Firm	○	15/15 (100%)	18/18 (100%)
		Tsuyoshi Numagami	Professor, Graduate xchool of Business Administration, Department of Business Administration of HITOTSUBASHI UNIVERSITY	○	15/15 (100%)	18/18 (100%)

Note: The number of meetings of the Board of Directors held during FY2020 differs for Ms. Yoshiko Ando, as she was newly elected as a director at the previous year's Ordinary General Meeting of Shareholders (held on June 19, 2020).

■ Nomination Committee and Remuneration Committee

As of July 1, 2021

Items		Members	Chairperson	Number of meetings held during FY2020
Nomination Committee		6	Masami Yamamoto (Outside Director)	4
	Inside Director	2		
	Outside Director	2		
	Outside Audit & Supervisory Board Member	2		
Remuneration Committee		6	Nobumasa Kemori (Outside Director)	5
	Inside Director	2		
	Outside Director	2		
	Outside Audit & Supervisory Board Member	2		

■ Operating System

Committee	Company	Chairperson	Attendees
Group Management Strategy Committee	JFE Holdings	President	Inside Directors (including 3 operating company Presidents), Corporate Officers and full-time Audit & Supervisory Board Members
Management Committee	JFE Holdings	President	Inside Directors (excluding 3 operating company Presidents), Corporate Officers and full-time Audit & Supervisory Board Members
	Each operating company	President	Directors, major Corporate Officers and Audit & Supervisory Board Members

■ Executive Remuneration

FY2020

Executive remuneration						
Position Type	Total remuneration, etc. (thousand yen)	Total amount by remuneration type (thousand yen)				Number of Executives (members)
		Basic remuneration	Bonus	Stock remuneration		
				Linked to performance	Linked to service length	
Directors (excluding Outside Directors)	199,166	185,502	0	0	13,664	5
Audit & Supervisory Board Members (excluding Outside Audit & Supervisory Board Members)	78,335	78,335	—	—	—	2
Outside Directors/ Audit & Supervisory Board Members	91,847	91,847	—	—	—	7

Officers whose consolidated remuneration exceeded 100 million yen				
Name	Position	Company	Per company (thousand yen)	Total (thousand yen)
Koji Kakigi	Director	JFE Holdings	106,847	106,847
Yoshihisa Kitano	Director	JFE Holdings	12,000	106,847
	Director	JFE Steel	94,847	

Ratio of remuneration for each		
Basic remuneration: fixed (%)	Annual bonus: linked to short-term erformance (%)	Stock remuneration: linked to medium- to long-term performance (%)
60	20	20

Note: The ratios above are applicable only when the company's president has attained the performance target goals.

■ Internal Control System

As of April 1, 2021

Internal control system			
Items		Number of companies (companies)	Number of people assigned (members)
Internal audit	Internal audit organization	—	174
Audit & Supervisory Board	Full-time Audit & Supervisory Board Members	29	34
	Dispatched Audit & Supervisory Board Members (part-time Audit & Supervisory Board member)	29	11
Cooperation of Audit & Supervisory Board members			
Items		Number of meeting held during FY2020	
Accounting auditor		7	
Internal Audit Department		6	

Compliance (including Anti-corruption)

■ Whistleblowing

Items	Scope	Unit	FY2018	FY2019	FY2020
Cases handled by the Corporate Ethics Hotline	JFE Holdings and operating companies	Cases	80	101	87

Independent Assurance Statement

SUSA
Sustainability Accounting Co.,Ltd.

Independent Assurance Statement

October 22, 2021

Mr. Koji Kakigi
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 Company's following data during the fiscal year 2020, that were 46.6 million t-CO_2 of CO_2 emissions for Scope1, 6.5 million t-CO_2 of CO_2 emissions for Scope2 and 14.4 million t-CO_2e of CO_2 emissions for Scope3 (categories 1, 2, 3, 4, 5, 6, 7, 15), 592 PJ of energy consumption, and 237 million tonnes of water accepted (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
- 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.

Takashi Fukushima
Representative Director
Sustainability Accounting Co., Ltd.

External ESG Evaluations

FTSE4Good Index Series and FTSE Blossom Japan Index

JFE Holdings has been chosen for two consecutive years as a constituent of the FTSE4Good Index Series and FTSE Blossom Japan Index, investment indexes provided by FTSE Russell, a subsidiary of the London Stock Exchange Group. Both indexes select companies that demonstrate strong environmental, social, and governance (ESG) practices and are widely used in the creation or assessment of sustainable investment funds or other financial products. The FTSE Blossom Japan Index is an ESG investment index adopted by the GPIF, one of the world's largest pension fund managers.

FTSE4Good FTSE Blossom Japan

MSCI Japan Empowering Women (WIN) Select Index

JFE Holdings has been selected to the MSCI Japan Empowering Women (WIN) Select Index provided by U.S.-based MSCI Inc. The index is composed of companies that excel in their ESG evaluation. Top 700 constituents of the MSCI Japan Investable Market Index (IMI) are rated in a multifaceted evaluation of their initiatives on gender diversity, and the top half of high-scoring companies from each industry are selected to the index. The WIN is an ESG investment index adopted by the GPIF.

2021 CONSTITUENT MSCI JAPAN EMPOWERING WOMEN INDEX (WIN)

S&P/JPX Carbon Efficient Index

JFE Holdings is a constituent of the S&P/JPX Carbon Efficient Index, which is jointly developed, calculated and published by U.S.-based S&P Dow Jones Indices and the Japan Exchange Group. The weighting of constituents in the index is determined by the status of corporate disclosure for environmental information and the level of carbon efficiency, or carbon emissions per unit of revenue. The index is an ESG investment index adopted by the GPIF.

S&P/JPX Carbon Efficient Index

Evaluation Based on CDP 2020

Established in Britain in 2000, the Carbon Disclosure Project (CDP) is a nongovernmental organization that conducts ESG evaluations. It calls on companies to disclose ESG-related information by responding to CDP questionnaires to facilitate the ESG investment decisions of institutional investors. Currently, the CDP covers three environmental areas: climate change, water security, and forests, and companies are rated on an eight-point scale (from A to D-) for each area. The volume of information collected by the CDP has become one of the largest in the world, with currently over 300 companies responding to the questionnaires, which are widely used in various indexes by institutional investors and for socially responsible investment.

The JFE Group actively participates in CDP initiatives as a member of the CDP Reporter Service and responds to climate change and water security questionnaires every year. We made sure to disclose appropriate information for the CDP 2020 questionnaire, and as a result we received a high rating.

CDP 2020 score: climate change: B, water security: A-, supplier engagement: A-

DBJ Environmentally Rated Loan Program

The Development Bank of Japan (DBJ) Environmentally Rated Loan Program uses 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 by DBJ as a company pursuing excellent and advanced environmental initiatives in March 2016

SOMPO Sustainability Index

JFE Holdings has been chosen for ten consecutive years as a constituent of the SOMPO Sustainability Index (former: SNAM Sustainability Index), which was launched by Sompo Asset Management Co., Ltd. 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 Employees' Health Management Rated Loan Program

The DBJ Employees' Health Management Rated Loan Program is the world's first financing menu that bases loan conditions on DBJ's proprietary system for rating health management for the purpose of selecting and evaluating companies based on their performance in this area.

JFE Holdings' efforts in pursuing employee health management has been highly regarded, and it is rated as a top-ranking company under the program.

Certified as a "White 500" Organization under the 2021 Certified Health and Productivity Management Outstanding Organizations Recognition Program

JFE Engineering was selected to the White 500 list of top 500 outstanding organizations in health and productivity management in 2021. This program is jointly sponsored by Japan's Ministry of Economy, Trade and Industry (METI) and the Nippon Kenko Kaigi to recognize organizations under the large enterprise and small and medium enterprise categories that are practicing particularly excellent health and productivity management.

JFE Engineering implements continuous and effective PDCA activities by adopting a health management system and conducting company-wide health surveys to gain a chronological understanding of employee awareness of wellbeing, lifestyles and health risks. Furthermore, the Company established the JFE Engineering Health Declaration in March 2018 to internally and externally communicate its initiatives on health management. Recognition of these initiatives led to the latest certification.

This is the third time JFE Engineering has been certified as a White 500 Organization and it has been selected as an Outstanding Organization in Health and Productivity Management for four consecutive years.

Caterpillar Quality Assurance Certification

In FY2021, JFE Steel West Japan Work (Kurashiki District) and JFE Shoji completed an online audit under COVID-19, successfully upgrading its certification for the fifth consecutive year as Gold Level SQEP suppliers in 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 (2020)

Non-ESG External Evaluation

Digital Transformation Stocks 2021

JFE Holdings was selected as one of the Digital Transformation Stocks (DX Stocks) 2021 by the Ministry of Economy, Trade and Industry (METI) and the Tokyo Stock Exchange (TSE) in recognition of its active promotion of digital transformation.

For five years until 2019, METI and TSE had selected the company as a Competitive IT Strategy Company Stock because of its strategic IT investments to increase medium-to long-term corporate value and bolster competitiveness. In 2020, this stock selection was renamed to DX Stocks to reflect its current focus on digital transformation for new corporate growth. Including its selection as a Competitive IT Strategy Company Stock, the company has essentially been recognized for its efforts in this area for seven consecutive years.

External Awards

Judging Committee Special Excellence Award of the 24th Environmental Communication Awards

JFE Group CSR REPORT 2020, issued in September 2020, won the Judging Committee Special Excellence Award of the 24th Environmental Communication Awards, hosted jointly by the Ministry of the Environment and Global Environmental Forum. This is the second consecutive year that the JFE Group has been recognized by these Awards.

Environmental Communication Awards recognize outstanding environmental reports targeting multi-stakeholders with the goal of promoting environmental communication between parties involved in the business and to further invigorate environmental initiatives among various media, such as CSR reports, integrated reports, and environmental management reports. For the 24th awards, 147 reports were submitted for judgement under the environmental report category and 114 reports under the environmental management report category. The JFE Group was recognized as one of four recipients of the Judging Committee Special Excellence Award under the environmental reporting category. The award ceremony was held online on February 17, 2021.

Please see the following for further details.

➤ **JFE Group CSR REPORT 2020 receives Judging Committee Special Excellence Award of the 24th Environmental Communication Awards (Japanese only)** (https://www.jfe-holdings.co.jp/release/2021/02/210218.html)

2nd ESG Finance Awards Japan, Special Award in the Environmentally Sustainable Company Category

JFE Group CSR REPORT 2020, issued in September 2020, received the Special Award in the Environmentally Sustainable Companies category of the 2nd ESG Finance Awards Japan sponsored by the Ministry of the Environment . This is the first time the JFE Group has received this award.

ESG Finance Awards Japan was founded for the purpose of commending institutional investors, financial institutions, intermediaries and companies that have made an outstanding impact on the environment and society by proactively engaging in ESG finance as well as environmental and social projects, and to share their advanced initiatives with the general public. The Environmentally Sustainable Companies category was established to recognize investment decisions based on an understanding of the impact of environmental elements on corporate value and to promote corporate management that incorporates environmental elements and disclosure of the status of related initiatives. The Special Award was recently created to recognize companies for outstanding initiatives particularly with respect to their size and industry characteristics. The awarding ceremony was held online on February 24, 2021.

Please see the following for further details.

➤ **JFE Group Received the Special Award in the Environmentally Sustainable Companies category of the 2nd ESG Finance Awards Japan (Japanese only)** (https://www.jfe-holdings.co.jp/release/2021/02/210225.html)

World Steel Association 2020 Steel Sustainability Champions

JFE Steel was recognized by the World Steel Association as a 2020 Steel Sustainability Champions.

Once a year, the World Steel Association commends member companies for demonstrating leadership in developing a sustainable steel industry and society and showing outstanding results in enhancing sustainability. JFE Steel, which became the first in the Japanese steel industry to receive the World Steel Association's Steelie Award (Innovation of the year) *, has been developing innovative technology for reducing environmental impact. In addition, JFE Steel actively discloses its basic policies and measurement data on sustainability in areas such as the environment and occupational health and safety through publications including the JFE Group CSR REPORT 2020 to its stakeholders. Recognition of these efforts led to the the Award.

* ➤ **JFE Steel won the Steelie Award 2020 from the World Steel Association for developing a resource-saving, silicon-gradient material for high-speed motors** (https://www.jfe-steel.co.jp/en/release/2020/201029.html)

Please see the following for further details.

➤ **JFE Steel Recognized as 2020 Steel Sustainability Champion**
(https://www.jfe-steel.co.jp/en/release/2021/210414.html)

Second Prize, IT Japan Award 2021

JFE Steel won second prize in the IT Japan Award 2021 organized by the Nikkei Computer magazine in recognition of its efforts on the blast furnace CPS*1 and "J-mAlster™*2 " .

The IT Japan Award was introduced in 2007 as a means of recognizing companies that show outstanding results based on the construction and effective use of information systems and to widely share the learnings from their success. Selected from articles published in the Nikkei Computer magazine over the past year (from May 2020 to April 2021), the award is presented for excellent cases of IT use from the perspectives of contribution to management innovation and business process reengineering, originality of system construction and use, and level of innovative technology and methodology.

*1 ➤ **JFE Steel Introducing Data Science Technology at All Steelworks Blast Furnaces— Conversion to cyber-physical systems expected to enhance productivity —** (https://www.jfe-steel.co.jp/en/release/2019/191105.html)

*2 ➤ **JFE Steel adopts IBM Watson to significantly to shorten the failure recovery time—Making safe and flexible use of cutting-edge technology in a hybrid cloud environment (Japanese only)**
(https://www.jfe-steel.co.jp/release/2019/03/190307.html)

Please see the following for further details.

➤ **JFE receives second prize in the IT Japan Award 2021 (Japanese only)**
(https://www.jfe-steel.co.jp/release/2021/06/210608.html)

External Awards for Research and Development

■ Awards for Technologies and Product Developments (FY2020)

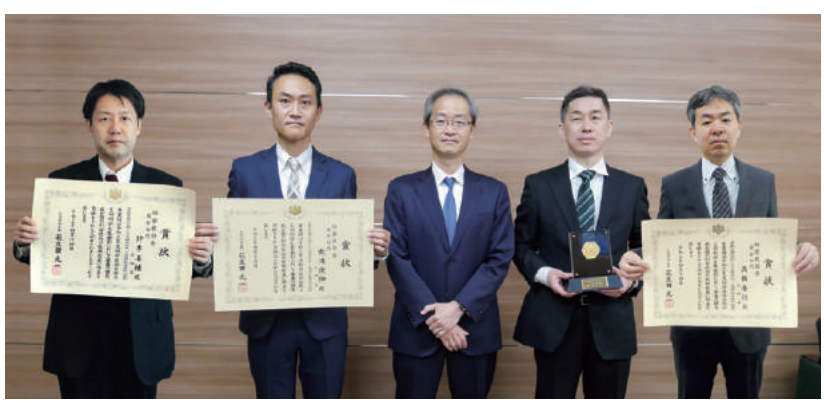
	Prize/Award	Project	Sponsor
JFE Steel	Steelie Awards 2020	Development of resource saving type Si gradient steel sheet for high-speed motors	World Steel Association
	FY2021 Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology (Prizes for Science and Technology, Development Category)	Development of production technology for hot-dip galvanized steel sheets by control of atmospheric conditions	Ministry of Education, Culture, Sports, Science and Technology
	53rd (FY2020) The Ichimura Prize in Industry for Outstanding Achievement	Chromium Ore Smelting Reduction Process Using Hydrocarbon Fuel Burner	Ichimura Foundation for New Technology
	FY2020 Prize of the Chairman of ECCJ for Energy Conservation Best Practices at Workplaces, Energy Conservation Grand Prize Award	Development of energy supply and demand guidance utilizing data science	The Energy Conservation Center, Japan
	KEIDANREN Recommended Company Newsletter Review 2020, Overall Prize	JFE Steel Magazine	Company Newsletter Center, KEIDANREN Business Services
	55th Japan Society for the Promotion of Machine Industry President's Award (Machine Promotion Award)	Surface inspection equipment based on twin-illumination and subtraction technique	Japan Society for the Promotion of Machine Industry
	FY2020 Japan Institute of Invention and Innovation Chairperson's Award (National Commendation for Invention)	Invention of concave and convex defect inspection equipment by magnetic flux leakage testing method	Japan Institute of Invention and Innovation
	New Global Niche Top 100 Companies	High brittle crack arrest steel plate for super-large container ships	Ministry of Economy, Trade and Industry
JFE Engineering	46th Prize of Director-General, Industrial Science and Technology Policy and Environment Bureau, METI, for Excellent Environmental Equipment Award	Automated incinerator for general waste incorporating AI and data analysis technology	The Japan Society of Industrial Machinery Manufacturers
	IT Excellence Award 2020	JFE Engineering's initiatives for promoting DX –Striving to normalize change through digitization	Japan Institute of Information Technology

Steelie Awards 2020

FY2020 Japan Institute of Invention and Innovation Chairperson's Award

53rd (FY2020) Ichimura Prize in Industry for Distinguished Achievement

FY2020 ECCJ for Energy Conservation Best Practices at Workplaces, Energy Conservation Grand Prize Award



FY2021 Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology (Prizes for Science and Technology, Development Category)

Third-party Comments

Yoshinao Kozuma

Emeritus Professor
Sophia University

1. Seventh Medium-term Business Plan

In the Seventh Medium-term Business Plan , which began in FY2021, the JFE Group clearly stated its strategic policy of pursuing sustainable growth over the medium- to long-term by establishing economic sustainability grounded in environmental and social sustainability. It also aims to achieve its mission of playing an essential role in ensuring society's sustainable development and creating safe and comfortable lives for people everywhere . This indicates that the Group has established a management structure that regards sustainability as the foundation for its business strategies and represents a powerful commitment to its vision of pursuing further growth in a sustainable society. While the JFE Group has already been making steady progress in its CSR management, I feel this major advance from its Sixth Medium-term Business Plan to pursue compatibility with a sustainable society ushers in a new phase of sustainable management for the Group.

2. JFE Group Environmental Vision for 2050

The JFE Group Environmental Vision for 2050 is clearly the pillar of the Group's environmental sustainability efforts. Just in the previous fiscal year, the JFE Group announced its target of reducing CO_2 emissions from the steel business by at least 20% from FY2013 levels. It has already progressed further this fiscal year by declaring its Environmental Vision for 2050, under which it intends to reduce CO_2 emissions by 18% from FY2013 levels by the end of FY2024 and achieve carbon neutrality by 2050. Publicly moving up the target reduction volume and period within such a short time span has created a sense of urgency to achieve the goals of the Group's climate policy. In addition, the Group is demonstrating leadership in resolving climate change issues by means of carbon-recycling blast furnaces and CCU that require its highly original technological expertise, indicating it is doing much more than simply collaborating with the industry to achieve the goals of the climate policy.

3. Human Rights Due Diligence

In terms of social sustainability, key points are eliminating accidents at workplace by facilities themselves as well as safety educations and rule compliance for achieving zero severe accidents and initiatives on human rights due diligence. The global community has come to expect businesses to pursue both of these efforts to demonstrate respect for human rights, and in particular, a movement is rapidly developing in Europe to create a regulatory framework for human rights due diligence. The JFE Group's fast development of an internal system for due diligence is a significant accomplishment in terms of risk management.

4. Future Challenges

Compared to the environmental data, which is increasingly being disclosed on a consolidated basis, social data remains mainly non-consolidated, and this is a point for improvement. In particular, lost-work injury and accidents data, employment ratios for people with disabilities, and job turnover rates are often used as key indicators for labor initiatives and are also necessary for evaluating the effectiveness of human rights due diligence. In regard to the corporate website, while it is periodically upgraded, the volume of information has grown to massive proportions over the years, and further consideration is needed to facilitate its use.

Mariko Kawaguchi

Specially appointed professor of Graduate School of Social Design Studies, Rikkyo University

This is my fifth year of offering third-party comments. These five years would be viewed as a turbulent period for capitalism when we look back from some time in the future. During this period, the SDG concept gained broad public acceptance, the decarbonization of society became a common global goal, and many environmental issues moved from the peripheries of business into mainstream issues of the highest priority. In particular, addressing climate change has emerged as a prerequisite for economic activity. The preservation of biodiversity also gained recognition as a vital issue this year. Meanwhile, the COVID-19 pandemic has directed a spotlight on social concerns such as the human rights of workers and disparities in wealth.

Under these circumstances, the JFE Group deserves to be highly commended for actively pursuing a decarbonization strategy by turning the demerits of its carbon-intensive steelmaking business to its advantage. Two years ago, the Group became a pioneer among Japanese companies to formulate a scenario in accordance with TCFD recommendations, thereby providing a model for the decarbonization strategies of numerous Japanese companies. Moreover, the JFE Group created a CO_2 reduction road map last year for realizing carbon neutrality. This year, it presented a super-long-term vision for 2050 and declared its intention to achieve carbon neutrality by 2050. Concurrently, it announced a new medium-term business plan that upholds the ambitious target of reducing CO_2 emissions by 18% from its steel business by FY2024, the final year of the plan.

Generally speaking, the emphasis on a super-long-term vision is embodied in the declaration of the Group's commitment to that vision. On the other hand, the medium-term plan presents feasible targets. The steelmaking industry uses fossil fuel as a raw material, and it was thought that the decarbonization of this industry would be even more difficult to achieve than for the energy sector. The reduction plan expressed in the JFE Group's medium-term business plan signifies the powerful message that the path to the decarbonization of steelmaking has now become clear.

Along with pursuing new technologies such as the carbon-recycling blast furnaces, hydrogen-based direct reduction ironmaking , and low carbon technology mentioned in the message from the CEO, I expect the Group to further accelerate the promotion of energy conservation, where it has been making steady progress, as well as its low-carbon strategy for its business portfolio, including its electric arc furnace and renewable energy businesses, at the same time. Declaring your pursuit of decarbonization within the steelmaking industry, which had been seen as a carbon-intensive business, will stimulate other industries and society as a whole toward reducing carbon emissions. I have high hopes that the JFE Group will exercise even stronger leadership.

Based on these observations, I'd like to point out a few areas where I hope to see the JFE Group demonstrate its leadership. The first area is adaptation which is another aspect of climate change. Intensified natural disasters such as flooding and storm surges due to super-sized hurricanes and typhoons, as well as large-scale wildfires, are causing severe damage to urban living, distribution, energy infrastructure, farmland, and forests around the world. We are at a point where society as a whole must adapt to the intensifying natural disasters associated with climate change. The construction of resilient systems that can withstand such disasters is a matter of utmost urgency. The development of resilient buildings and other urban infrastructure is a pressing social issue that also offers a solid business opportunity. I

would like to see the JFE Group strengthen its effort to promote its climate change initiatives based on the dual pillars of decarbonization and resilience.

My next concern is resolving social issues in the supply chain. In general, mining sites for rare metals and non-ferrous metals are known to damage ecosystems and water systems by considerably changing the landscape. They also cause significant impact on the communities and human rights of local residents, making it a highly material social issue. Regarding the supply chain, this current report only focuses on the Group's procurement policy. I believe it is essential for a leading environmental company to formulate and disclose concrete policies and targets for the social and environmental risks inherent in its supply chain with regard to major raw materials such as iron ore and coal.

In this report, steel is described as recyclable and the most sustainable material that exists around the world. The report also includes the Group's initiatives for establishing a circular economy through its engineering business. I interpreted this to mean that it is possible to develop a win-win business model addressing both recycling and decarbonization by combining steel and engineering.

I expect the JFE Group to demonstrate its leadership by more clearly presenting a business strategy that incorporates decarbonization and recycling as a higher level concept of individual technological strategies while paying due consideration for diversity such as gender and race so as to steadily raise the effectiveness of the Group's vision for 2050.

Editorial Policy

Basic Approach

This report provides stakeholders with a comprehensive account of the JFE Group's CSR-related initiatives and data and elicits feedback toward enhancing the Company's activities and information disclosure. The 2021 report was compiled by adding the following content.

- Formulation of the Seventh Medium-term Business Plan and the JFE Group Environmental Vision for 2050, determination of material issues of corporate management and designation of KPIs
- Setting of medium- to long-term CO_2 reduction targets for the steel business toward achieving carbon neutrality by 2050
- Enhancement of the information on climate change risks and opportunities by reviewing the structure of the contents in line with TCFD recommendations, including scenario analysis
- Updates to provide the latest information on the development and provision of JFE Group eco-friendly processes and products
- Designation of policies and processes for initiatives on human rights due diligence that were introduced in FY2021
- Provide more information on the establishment of the risk management system

CSR Report Composition and Format

A comprehensive report on the JFE Group's CSR activities and quantitative ESG data

Scope of Report

Reporting Period

FY2020 (April 1, 2020 to March 31, 2021)
Reports on some activities undertaken before or after this period are included.

Organization 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 Corporation, but also includes reports on activities of other companies in the JFE Group (406 companies, of which 327 are consolidated subsidiaries and 79 are equity-method affiliates). Quantitative information on the environment includes data from the following JFE Group operating companies.

JFE Steel Group: JFE Steel Corporation and 30 consolidated subsidiaries (total: 31 companies)

25 domestic companies:
JFE MINERAL COMPANY, LTD., Mizushima Ferroalloy Co., Ltd., JFE Material Co., Ltd., CHIBA RIVERMENT AND CEMENT CORP., MIZUSHIMA RIVERMENT CORP., JFE PRECISION CORPORATION, JFE Plastic Resource Corporation, JFE Bars & Shapes Corporation, JFE Metal Products & Engineering Inc., JFE Galvanizing & Coating Co., Ltd., JFE Container Co., Ltd., JFE Welded Pipe Manufacturing Co., Ltd., JFE Steel Pipe Co., Ltd., Galvatex Corporation, JFE Pipe Fitting Mfg. Co., Ltd., JFE Techno-wire Corporation, JFE Kozai Corporation, JFE LOGISTICS CORPORATION, JFE Chemical Corporation, JFE LIFE CORPORATION, GECOSS CORPORATION, JFE ROCKFIBER CORPORATION, JFE KENZAI FENCE CO., LTD., J-Logitec Co., Ltd., K-PLASHEET CORPORATION

5 overseas companies:
Nova Era Silicon, JFE Steel Galvanizing (Thailand) Ltd., Thai Coated Steel Sheet Co., Ltd., Philippine Sinter Corporation, PT. JFE STEEL GALVANIZING INDONESIA

JFE Engineering Group: JFE Engineering Corporation and the following 11 consolidated domestic subsidiaries (12 companies in total)

11 domestic companies:
J&T Recycling Corporation, JFE Environmental Service Corporation, NORTHERN JAPAN MACHINERY Corporation, Tohoku Dock Ironworks Corporation, JFE Aqua Machine and Service Corporation, Fujikako, Inc., Asuka Soken Co., Ltd., JFE Pipeline Engineering Corporation, JFE Technos Corporation, J Farm Corporation, JFE Business Support YOKOHAMA Corporation

JFE Shoji Corporation Group: JFE Shoji Corporation and the following 33 domestic and overseas consolidated subsidiaries (steel-processing companies) (total: 34 companies)

19 domestic subsidiaries:
JFE Shoji Electrical Steel Co., Ltd. JFE Shoji Coil Center Corporation, JFE Shoji Kohnan Steel Center Co., Ltd., Shoji Tinplate Center Corporation, Aichi Kanzai Kogyo Corporation, Kyusyu-Tech Corporation, JFE Shoji Kohnan Steel Center Co., Ltd. Shin Nihon Kogyo Corporation, Taisei Kogyo Corporation, Toyo Kinzoku Corporation, Tochigi Shearing Corporation, Naigai Steel Corporation, Nagano Can Corporation, Niigata Steel Corporation, Nihon Jiseizai Kogyo Co., Ltd., Hokuriku Kogyo Corporation, Hokuriku Steel Co., Ltd., Mizushima Steel Corporation, Mizushima Metal Products Corporation

14 overseas subsidiaries:
Dongguan JFE Shoji Steel Products Co., Ltd., Guangzhou JFE Shoji Steel Products Co., Ltd., Zhejiang JFE Shoji Steel Products Co., Ltd., Jiangsu JFE Shoji Steel Products Co., Ltd., JFE Shoji Steel Philippines, Inc., Central Metals (Thailand) Ltd., Steel Alliance Service Center Co., Ltd., JFE Shoji Steel Vietnam Co., Ltd., JFE Shoji Steel Hai Phong Co., Ltd., JFE Shoji Steel Malaysia Sdn. Bhd., PT. JFE Shoji Steel Indonesia, JFE Shoji Steel India Private Limited, Vest Inc., JFE Shoji Steel de Mexico, S.A. de C.V.

Reference Guidelines

GRI Sustainability Reporting Standards 2016, 2018, 2019, and 2020
Ministry of the Environment (Japan): Environmental Reporting Guidelines 2018
Ministry of the Environment (Japan): Environmental Accounting Guidelines 2005
Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)

Publication Date

Website: October 2021, PDF file: October 2021
(previous report: September 2020, next report: scheduled for September 2022)

Related Reports

The following information is available at:

➤ https://www.jfe-holdings.co.jp/en/

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.

Guideline Content Indices

GRI Standard Content Index

This report is prepared with reference to the GRI Sustainability Reporting Standards 2016/2018/2019/2020

Note: We refer to JFE GROUP REPORT 2021 (Integrated Report), Securities Report from April 1, 2020 to March 31, 2021) and Corporate Governance Report as of June 25, 2021.

■ GRI 102: General Disclosures 2016

Disclosure		Pages	
		Report	Other
1. Organizational profile			
102-1	Name of the organization	—	➤ Overview of JFE Holdings (https://www.jfe-holdings.co.jp/en/company/info/index.html)
102-2	Activities, brands, products, and services	—	JFE GROUP REPORT (Integrated Report): pp.35-38
102-3	Location of headquarters	—	➤ Overview of JFE Holdings (https://www.jfe-holdings.co.jp/en/company/info/index.html)
102-4	Location of operations	—	➤ About JFE Group (https://www.jfe-holdings.co.jp/en/company/g-about/index.html)
102-5	Ownership and legal form	—	➤ Overview of JFE Holdings (https://www.jfe-holdings.co.jp/en/company/info/index.html)
102-6	Markets served	—	➤ Overview of JFE Holdings (https://www.jfe-holdings.co.jp/en/company/info/index.html) ➤ About JFE Group (https://www.jfe-holdings.co.jp/en/company/g-about/index.html)
102-7	Scale of the organization	➤ Social Data (P.220)	JFE GROUP REPORT (Integrated Report): pp.13-14, pp.27-28, pp.39-49, pp.91-92, pp.98
102-8	Information on employees and other workers	➤ Social Data (P.220)	JFE GROUP REPORT (Integrated Report): pp.98
102-9	Supply chain	➤ JFE Group Value Chain (P.32)	—
102-10	Significant changes to the organization and its supply chain	Not applicable	—
102-11	Precautionary Principle or approach	➤ Environmental Management (P.49) ➤ Scenario Analysis in Line with the TCFD Recommendations (P.77) ➤ Risk Management (P.193)	—

Disclosure		Pages	
		Report	Other
102-12	External initiatives	➤ Steel Industry Initiatives (P.90) ➤ Biodiversity (P.125) ➤ Human Rights (P.160) ➤ Community (P.166)	—
102-13	Membership of associations	➤ Steel Industry Initiatives (P.90)	—
2. Strategy			
102-14	Statement from senior decision-maker	➤ Message from the CEO (P.1)	—
102-15	Key impacts, risks, and opportunities	➤ Message from the CEO (P.1) ➤ JFE Group Value Chain (P.32) ➤ Material Issues of Corporate Management(Materiality) (P.16) ➤ Scenario Analysis in Line with the TCFD Recommendations (P.77)	—
3. Ethics and integrity			
102-16	Values, principles, standards, and norms of behavior	➤ Corporate Vision/Business Conduct (P.4)	—
102-17	Mechanisms for advice and concerns about ethics	➤ Compliance (P.189)	JFE GROUP REPORT (Integrated Report): pp.83
4. Governance			
102-18	Governance structure	➤ Corporate Governance (P.178)	—
102-19	Delegating authority	➤ CSR Structure (P.26)	—
102-20	Executive-level responsibility for economic, environmental, and social topics	➤ CSR Structure (P.26)	—
102-21	Consulting stakeholders on economic, environmental, and social topics	➤ CSR Structure (P.26) ➤ Compliance (P.189)	—
102-22	Composition of the highest governance body and its committees	➤ Corporate Governance (P.178)	JFE GROUP REPORT (Integrated Report): pp.87-88, pp.78-80, pp.89-90
102-23	Chair of the highest governance body	—	Corporate Governance Report: pp.8
102-24	Nominating and selecting the highest governance body	➤ Corporate Governance (P.178)	JFE GROUP REPORT (Integrated Report): pp.78-80
102-25	Conflicts of interest	➤ Corporate Governance (P.178)	Corporate Governance Report: pp.2
102-26	Role of highest governance body in setting purpose, values, and strategy	—	—
102-27	Collective knowledge of highest governance body	—	—
102-28	Evaluating the highest governance body's performance	➤ Corporate Governance (P.178)	—

Disclosure		Pages	
		Report	Other
102-29	Identifying and managing economic, environmental, and social impacts	➤ CSR Structure (P.26) ➤ Environmental Management (P.49)	—
102-30	Effectiveness of risk management processes	➤ Risk Management (P.193)	—
102-31	Review of economic, environmental, and social topics	➤ CSR Structure (P.26)	—
102-32	Highest governance body's role in sustainability reporting	➤ CSR Structure (P.26)	—
102-33	Communicating critical concerns	➤ Compliance (P.189)	—
102-34	Nature and total number of critical concerns	➤ Compliance (P.189)	—
102-35	Remuneration policies	➤ Corporate Governance (P.178)	JFE GROUP REPORT (Integrated Report): pp.82
102-36	Process for determining remuneration	➤ Corporate Governance (P.178)	JFE GROUP REPORT (Integrated Report): pp.82
102-37	Stakeholders' involvement in remuneration	—	—
102-38	Annual total compensation ratio	—	—
102-39	Percentage increase in annual total compensation ratio	—	—
5. Stakeholder engagement			
102-40	List of stakeholder groups	➤ CSR Structure (P.26)	—
102-41	Collective bargaining agreements	—	—
102-42	Identifying and selecting stakeholders	—	—
102-43	Approach to stakeholder engagement	➤ CSR Structure (P.26)	—
102-44	Key topics and concerns raised	➤ Third-part Comments (P.240)	—
6.Reporting practice			
102-45	Entities included in the consolidated financial statements	➤ Editorial Policy (P.243)	—
102-46	Defining report content and topic Boundaries	➤ Editorial Policy (P.243)	—
102-47	List of material topics	➤ Material Issues of Corporate Management(Materiality) (P.16)	—
102-48	Restatements of information	➤ Climate Change (P.55) ➤ Environmental Data (P.198)	—
102-49	Changes in reporting	➤ Editorial Policy (P.243)	—
102-50	Reporting period	➤ Editorial Policy (P.243)	—
102-51	Date of most recent report	➤ Editorial Policy (P.243)	—
102-52	Reporting cycle	➤ Editorial Policy (P.243)	—

Disclosure		Pages	
		Report	Other
102-53	Contact point for questions regarding the report	➤ Submit Comments on the JFE Group CSR Report (Japanese Only) (https://www.jfe-holdings.co.jp/csr/pdf/form_er2021j.html)	➤ Contact Us (https://www.jfe-holdings.co.jp/en/contact.html)
102-54	Claims of reporting in accordance with the GRI Standards	Reference	—
102-55	GRI content index	This table	—
102-56	External assurance	➤ Independent Assurance Statement (P.231)	—

■ GRI103：Management Approach 2016

Disclosure		Pages	
		Report	Other
GRI- 103: Management Approach			
103-1	Explanation of the material topic and its Boundary	➤ Material Issues of Corporate Management(Materiality) (P.16)	—
103-2	The management approach and its components	➤ Material Issues of Corporate Management(Materiality) (P.16) ➤ CSR Structure (P.26) ➤ Supply Chain Management (P.46) ➤ Environmental Management (P.49) ➤ Climate Change (P.55) ➤ Scenario Analysis in Line with the TCFD Recommendations (P.77) ➤ Prevention of Pollution (P.120) ➤ Efficient Use of Resources (P.113) ➤ Water Security (P.117) ➤ Biodiversity (P.125) ➤ Responsibility to Customers (Provide Quality Products and Enhance Customer Satisfaction) (P.131) ➤ Occupational Health and Safety (P.138) ➤ Labor Standards (Recruit and Nurture Diverse Human Resources) (P.148)	—
103-3	Evaluation of the management approach		

■ GRI200: Economic topics

Disclosure		Pages	
		Report	Other
GRI- 201: Economic Performance 2016			
201-1	Direct economic value generated and distributed	➤ Environmental Management (P.49) ➤ Community (P.166)	Securities Report: pp.2-3 (Transition of Key Management Indicators, etc.), pp.14 (Status of Employees), pp.51 (Dividend Policy), pp.85 (Consolidated Income Statement)
201-2	Financial implications and other risks and opportunities due to climate change	➤ Scenario Analysis in Line with the TCFD Recommendations(P.77) ➤ Environmental Management (P.49)	—
201-3	Defined benefit plan obligations and other retirement plans	—	Securities Report: pp.126 (Postemployment benefits)
201-4	Financial assistance received from government	—	—
GRI- 202: Market Presence 2016			
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	—	—
202-2	Proportion of senior management hired from the local community	—	—
GRI- 203: Indirect Economic Impacts 2016			
203-1	Infrastructure investments and services supported	➤ Environmental Management (P.49) ➤ Community (P.166)	—
203-2	Significant indirect economic impacts	➤ Message from the CEO (P.1) ➤ JFE Group Value Chain (P.32) ➤ Material Issues of Corporate Management(Materiality) (P.16)	—
GRI- 204: Procurement Practices 2016			
204-1	Proportion of spending on local suppliers	—	—
GRI- 205: Anti-corruption 2016			
205-1	Operations assessed for risks related to corruption	—	—
205-2	Communication and training about anti-corruption policies and procedures	➤ Compliance (P.189)	—
205-3	Confirmed incidents of corruption and actions taken	—	—
GRI-206： Anti-competitive Behavior 2016			
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	—	—
GRI-207： Tax 2019			
207-1	Approach to tax	➤ Tax Trancparency (P.197)	—
207-2	Tax governance, control, and risk management	—	—
207-3	Stakeholder engagement and management of concerns related to tax	—	—
207-4	Country-by-country reporting	—	—

■ GRI300: Environmental topics

Disclosure		Pages	
		Report	Other
GRI-301:Materials 2016			
301-1	Materials used by weight or volume	➤ Environmental Data (P.198)	—
301-2	Recycled input materials	➤ Efficient Use of Resources (P.113) ➤ Environmental Data (P.198)	—
301-3	Reclaimed products and their packaging	➤ Efficient Use of Resources (P.113) ➤ Environmental Data (P.198)	—
GRI-302:Energy 2016			
302-1	Energy consumption within	➤ Climate Change (P.55) ➤ Environmental Data (P.198)	—
302-2	Energy consumption outside of the organization	—	—
302-3	Energy intensity	➤ Climate Change (P.55) ➤ Environmental Data (P.198)	—
302-4	Reduction of energy consumption	➤ Climate Change (P.55) ➤ Environmental Data (P.198)	—
302-5	Reductions in energy requirements of products and services	➤ Steel Industry Initiatives (P.90)	—
GRI-303: Water and Effluents 2018			
303-1	Interactions with water as a shared resources	➤ Water Security (P.117)	—
303-2	Management of water discharge-related impacts	➤ Prevention of Pollution (P.120) ➤ Environmental Data (P.198)	—
303-3	Water withdrawal	➤ Water Security (P.117) ➤ Environmental Data (P.198)	—
303-4	Water discharge	➤ Environmental Data (P.198)	—
303-5	Water consumption	➤ Water Security (P.117) ➤ Environmental Data (P.198)	—
GRI- 304: Biodiversity 2016			
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	—	—
304-2	Significant impacts of activities, products, and services on biodiversity	➤ Biodiversity (P.125)	—
304-3	Habitats protected or restored	—	—
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	—	—

Disclosure		Pages	
		Report	Other
GRI-305: Emissions 2016			
305-1	Direct (Scope 1) GHG emissions	➤ Climate Change (P.55) ➤ Environmental Data (P.198)	—
305-2	Energy indirect (Scope 2) GHG emissions	➤ Climate Change (P.55) ➤ Environmental Data (P.198)	—
305-3	Other indirect (Scope 3) GHG emissions	➤ Climate Change (P.55) ➤ Environmental Data (P.198)	—
305-4	GHG emissions intensity	➤ Climate Change (P.55) ➤ Environmental Data (P.198)	—
305-5	Reduction of GHG emissions	➤ Climate Change (P.55) ➤ Environmental Data (P.198)	—
305-6	Emissions of ozone-depleting substances (ODS)	—	—
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	➤ Prevention of Pollution (P.120) ➤ Environmental Data (P.198)	—
GRI 306: Waste 2020			
306-1	Waste generation and significant waste-related impacts	➤ Environmental Data (P.198)	—
306-2	Management of significant waste-related impacts	➤ Efficient Use of Resources (P.113) ➤ Environmental Data (P.198)	—
306-3	Waste generated	➤ Efficient Use of Resources (P.113) ➤ Environmental Data (P.198)	—
306-4	Waste diverted from disposal	➤ Efficient Use of Resources (P.113) ➤ Environmental Data (P.198)	—
306-5	Waste directed to disposal	➤ Efficient Use of Resources (P.113) ➤ Environmental Data (P.198)	—
GRI-307: Environmental Compliance 2016			
307-1	Non-compliance with environmental laws and regulations	➤ Environmental Management (P.49)	—
GRI- 308: : Supplier Environmental Assessment 2016			
308-1	New suppliers that were screened using environmental criteria	—	—
308-2	Negative environmental impacts in the supply chain and actions taken	—	—

■ GRI400: Social topics

Disclosure		Pages	
		Report	Other
GRI- 401: Employment 2016			
401-1	New employee hires and employee turnover	➤ Labor Standards (Recruit and Nurture Diverse Human Resources) (P.148) ➤ Social Data (P.220)	—
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	—	—
401-3	Parental leave	➤ Social Data (P.220)	—
GRI- 402: Labor/Management Relations 2016			
402-1	Minimum notice periods regarding operational changes	—	—
GRI- 403: Occupational Health and Safety 2018			
403-1	Occupational health and safety management system	➤ Occupational Health and Safety (P.138)	—
403-2	Hazard identification, risk assessment, and incident investigation	➤ Occupational Health and Safety (P.138)	—
403-3	Occupational health services	➤ Occupational Health and Safety (P.138)	—
403-4	Worker participation, consultation, and communication on occupational health and safety	➤ Occupational Health and Safety (P.138)	—
403-5	Worker training on occupational health and safety	➤ Occupational Health and Safety (P.138)	—
403-6	Promotion of worker health	➤ Occupational Health and Safety (P.138)	—
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	➤ Occupational Health and Safety (P.138)	—
403-8	Workers covered by an occupational health and safety management system	—	—
403-9	Work-related injuries	➤ Social Data (P.220)	—
403-10	Work-related ill health	➤ Occupational Health and Safety (P.138)	—
GRI-404: Training and Education 2016			
404-1	Average hours of training per year per employee	—	—
404-2	Programs for upgrading employee skills and transition assistance programs	➤ Labor Standards (Recruit and Nurture Diverse Human Resources) (P.148)	—
404-3	Percentage of employees receiving regular performance and career development reviews	—	—

Disclosure		Pages	
		Report	Other
GRI-405: Diversity and Equal Opportunity 2016			
405-1	Diversity of governance bodies and employees	➤ Labor Standards (Recruit and Nurture Diverse Human Resources) (P.148) ➤ Social Data (P.220)	—
405-2	Ratio of basic salary and remuneration of women to men	—	—
GRI- 406: Non-discrimination 2016			
406-1	Incidents of discrimination and corrective actions taken	—	—
GRI- 407: Freedom of Association and Collective Bargaining 2016			
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	—	—
GRI- 408: Child Labor 2016			
408-1	Operations and suppliers at significant risk for incidents of child labor	—	—
GRI- 409: : Forced or Compulsory Labor 2016			
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	—	—
GRI- 410: : Security Practices 2016			
410-1	Security personnel trained in human rights policies or procedures	—	—
GRI- 411: Rights of Indigenous Peoples 2016			
411-1	Incidents of violations involving rights of indigenous peoples	—	—
GRI-412: Human Rights Assessment 2016			
412-1	Operations that have been subject to human rights reviews or impact assessments	—	—
412-2	Employee training on human rights policies or procedures	➤ Human Rights (P.160)	—
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	—	—
GRI- 413: Local Communities 2016			
413-1	Operations with local community engagement, impact assessments, and development programs	➤ Community (P.166)	—
413-2	Operations with significant actual and potential negative impacts on local communities	Not applicable	—

Disclosure		Pages	
		Report	Other
GRI- 414: : Supplier Social Assessment 2016			
414-1	New suppliers that were screened using social criteria	—	—
414-2	Negative social impacts in the supply chain and actions taken	➤ JFE Group Value Chain (P.32)	—
GRI- 415: Public Policy 2016			
415-1	Political contributions	—	—
GRI- 416: Customer Health and Safety 2016			
416-1	Assessment of the health and safety impacts of product and service categories	➤ Responsibility to Customers (Provide Quality Products and Enhance Customer Satisfaction) (P.148)	—
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	—	—
GRI- 417: Marketing and Labeling 2016			
417-1	Requirements for product and service information and labeling	—	—
417-2	Incidents of non-compliance concerning product and service information and labeling	Not applicable	—
417-3	Incidents of non-compliance concerning marketing communications	—	—
GRI-418: Customer Privacy 2016			
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	—	—
GRI-419: Socioeconomic Compliance 2016			
419-1	Non-compliance with laws and regulations in the social and economic area	—	—

Comparison with Environmental Reporting Guidelines 2018 (Ministry of the Environment, Japan)

Chapter 1: Basic Information of Environmental Reporting	
Items	Contents
1. Basic requirements for environmental reporting	
(1) Boundary	➤ Editorial Policy (P.243)
(2) Reporting period	➤ Editorial Policy (P.243)
(3) Reporting standards and guidelines	➤ Editorial Policy (P.243) ➤ Guideline Content Indices (P.247)
(4) Overview of the environmental report	➤ Editorial Policy (P.243)
2. Trends in key performance indicators	
(1) Trends in major performance indicators	➤ Material Issues of Corporate Management(Materiality) (P.16)

Chapter 2: Items to Be Included in Environmental Reporting	
Items	Contents
1. Top Management Commitments	
(1) Top management commitments to the JFE Group's response to material environmental issues	➤ Message from the CEO (P.1)
2. Governance	
(1) JFE Group governance structure	➤ CSR Structure (P.26)
(2) Manager responsible for material environmental issues	➤ Environmental Management (P.49) ➤ Scenario Analysis in Line with the TCFD Recommendations (P.77)
(3) Roles of the board of directors and board of executive officers in the management of material environmental issues	➤ Environmental Management (P.49) ➤ Scenario Analysis in Line with the TCFD Recommendations (P.77)
3. Stakeholder Engagement	
(1) Corporate policies to stakeholders	➤ Environmental Management (P.49)
(2) Overview of stakeholder engagement activities conducted in the reporting period	➤ JFE Group Value Chain (P.32) ➤ Environmental Communication (P.129) ➤ CSR Structure (P.26)
4. Risk Management	
(1) Environment-related risk identification, assessment, and management processes	➤ CSR Structure (P.26) ➤ Scenario Analysis in Line with the TCFD Recommendations (P.77) ➤ Risk Management (P.193)
(2) Positioning of the above processes in the JFE Group's overall risk management	➤ CSR Structure (P.26) ➤ Risk Management (P.193)

Chapter 2: Items to Be Included in Environmental Reporting	
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5. Business Model	
(1) JFE Group business model	➤ JFE Group Value Chain (P.32) JFE GROUP REPORT (Integrated Report): pp.35-38
6. Value Chain Management	
(1) Value chain overview	➤ JFE Group Value Chain (P.32)
(2) Green procurement policy, objectives, and results	➤ Supply Chain Management (P.46)
(3) Status of eco-friendly products and services	➤ Development and Provision of Eco-friendly Processes and Products (P.94)
7. Long-term Vision	
(1) Long-term vision	➤ Message from the CEO (P.1) ➤ Climate Change (P.55) ➤ Scenario Analysis in Line with the TCFD Recommendations (P.77)
(2) Time period covered by the long-term vision	➤ Message from the CEO (P.1) ➤ Climate Change (P.55) ➤ Scenario Analysis in Line with the TCFD Recommendations (P.77)
(3) Reasons why that time period was selected	➤ Climate Change (P.55) ➤ Scenario Analysis in Line with the TCFD Recommendations (P.77)
8. Strategy	
(1) JFE Group business strategy for contributing to the achievement of a sustainable society	➤ Message from the CEO (P.1) ➤ Material Issues of Corporate Management(Materiality) (P.16) ➤ Scenario Analysis in Line with the TCFD Recommendations (P.77) ➤ Steel Industry Initiatives (P.90)
9. Methodology for Identifying Material Environmental Issues	
(1) Procedure by which the JFE Group identified its material environmental issues	➤ Material Issues of Corporate Management(Materiality) (P.16) ➤ Scenario Analysis in Line with the TCFD Recommendations (P.77)
(2) List of identified material environmental issues	➤ Material Issues of Corporate Management(Materiality) (P.16) ➤ Scenario Analysis in Line with the TCFD Recommendations (P.77)
(3) Reasons that the identified environmental issues were judged material	➤ Material Issues of Corporate Management(Materiality) (P.16) ➤ Scenario Analysis in Line with the TCFD Recommendations (P.77)
(4) Boundaries of the material environmental issues	➤ JFE Group Value Chain (P.32) ➤ Material Issues of Corporate Management(Materiality) (P.16) ➤ Scenario Analysis in Line with the TCFD Recommendations (P.77)

Chapter 2: Items to Be Included in Environmental Reporting	
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10. JFE Group Material Environmental Issues	
(1) Policies and/or action plans	➤ Corporate Vision/Business Conduct (P.4) ➤ JFE Group Value Chain (P.32) ➤ Material Issues of Corporate Management(Materiality) (P.16) ➤ Scenario Analysis in Line with the TCFD Recommendations (P.77)
(2) Targets and results of policies/action plans based on performance indicators	➤ Material Issues of Corporate Management(Materiality) (P.16) ➤ CSR Structure (P.26)
(3) Methodologies used for calculating each performance indicator	➤ Material Issues of Corporate Management(Materiality) (P.16)
(4) Aggregation scope of data for each performance indicator	➤ Material Issues of Corporate Management(Materiality) (P.16) ➤ Editorial Policy (P.243)
(5) Financial impact of risks and opportunities, and calculation methodologies if the financial impact is significant	➤ Environmental Management (P.49) ➤ Scenario Analysis in Line with the TCFD Recommendations (P.77) ➤ Environmental Data (P.198)
6) Assurance report by an independent third party	➤ Independent Assurance Statement (P.231)

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(1) Scope 1 emissions	➤ Climate Change (P.55) ➤ Environmental Data (P.198)
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(3) Scope 3 emissions	➤ Climate Change (P.55) ➤ Environmental Data (P.198)
Emission Intensity	
(1) Greenhouse gas emission intensity	➤ Climate Change (P.55) ➤ Environmental Data (P.198)
Energy Usage	
(1) Breakdown of energy usage and overall energy usage	➤ Climate Change (P.55) ➤ Environmental Data (P.198)
(2) Renewable energy usage as a percentage of overall energy usage	—

Reference: Major Environmental Issues and Their Performance Indicators	
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2. Water Resources	
(1) Water resource inputs	➤ Water Security (P.117) ➤ Environmental Data (P.198)
(2) Water intensity	—
(3) Water discharge	➤ Environmental Data (P.198)
(4) Status of water stress, if the entity has sites or supply chains located in areas with water stress	➤ Water Security (P.117)
3. Biodiversity	
(1) Impact of business activities on biodiversity	➤ Biodiversity (P.125)
(2) Status and extent of the dependency of the JFE Group's business activities on biodiversity	➤ Biodiversity (P.125)
(3) Business activities that contribute to biodiversity conservation	➤ Biodiversity (P.125)
(4) Status of cooperation with external stakeholders	➤ Biodiversity (P.125)
4. Resource Circulation	
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(1) Volume of nonrenewable resource inputs	➤ Environmental Data (P.198)
(2) Volume of renewable resource inputs	➤ Environmental Data (P.198)
(3) Volume of recycled materials used	➤ Environmental Data (P.198)
(4) Rate of recycled and reused resources (= volume of recycled materials used/volume of resource inputs)	➤ Efficient Use of Resources (P.113) ➤ Environmental Data (P.198)
Resource Waste	
(1) Total production of waste	➤ Efficient Use of Resources (P.113) ➤ Environmental Data (P.198)
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5. Chemical Substances	
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(2) Volume of chemical substance emissions	➤ Prevention of Pollution (P.120) ➤ Environmental Data (P.198)
(3) Volume of chemical substances transferred	➤ Prevention of Pollution (P.120) ➤ Environmental Data (P.198)
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(1) Status of legal compliance	➤ Environmental Management (P.49)
Air quality conservation	
(1) Air-pollutant emissions volume, emission concentration in air pollution regulations	➤ Prevention of Pollution (P.120) ➤ Environmental Data (P.198)
Water pollution	
(1) Water pollution load, emission concentration in emissions regulations	➤ Prevention of Pollution (P.120) ➤ Environmental Data (P.198)
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(1) Status of soil pollution	➤ Environmental Management (P.49)

TCFD Content Index

Recommended Disclosures	Overview of TCFD Recommendations	Contents
【Governance】 Disclose the organization's governance around climaterelated risks and opportunities.	a. Describe the board's oversight of climate-related risks and opportunities	➤ Corporate Governance (P.178) ➤ Risk Management (P.193) ➤ Climate Change (Governance) (P.59)
	b. Describe management's role in assessing and managing climate-related risks and opportunities	
【Strategy】 Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy and financial planning where such information is material.	a. Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term	➤ Seventh Medium-term Business Plan (Major Strategies of the Seventh Medium-term Business Plan) (P.13) ➤ JFE Group Value Chain (P.32) ➤ Climate Change (JFE Group Environmental Vision for 2050) (P.56) ➤ Climate Change (JFE Group's Climate Change Strategy) (P.61) ➤ Scenario Analysis in Line with the TCFD Recommendations (P.77)
	b. Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning	
	c. Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	
【Risk Management】 Disclose how the organization identifies, assesses, and manages climate-related risks.	a. Describe the organization's processes for identifying and assessing climate-related risks	➤ Risk Management (P.193) ➤ Environmental Management (P.49) ➤ Climate Change (Risk Management) (P.70)
	b. Describe the organization's processes for managing climate-related risks	
	c. Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organization's overall risk management	
【Metrics and Targets】 Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities.	a. Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process	➤ Seventh Medium-term Business Plan (Major Strategies of the Seventh Medium-term Business Plan) (P.13) ➤ Material Issues of Corporate Management(Materiality) (P.16) ➤ Climate Change (Metrics and Targets) (P.71)
	b. Disclose Scopes 1 and 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions and related risks	➤ Climate Change (Metrics and Targets) (P.71) ➤ Environmental Data (P.198)
	c. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets	➤ Material Issues of Corporate Management(Materiality) (P.16) ➤ Climate Change (JFE Group Environmental Vision for 2050) (P.56) ➤ Climate Change (Metrics and Targets) (P.71)