JFE Group

CSR REPORT 2020

JFE

Revision History

Dec. 23 2020 First Edition

Contents

Message from the CEO

September 2020

Koji Kakigi

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

Contributing to the Creation of a Sustainable Society by Leveraging the World's Most Innovative Technology to Resolve Climate Change Issues and Address Other Global Challenges

Where We Stand and What We Intend to Do

The JFE Group is committed to its corporate vision, "contributing to society with the world's most innovative technology," and by leveraging its comprehensive strengths gained through a broad range of businesses centered on iron and extending to steel, engineering, and trade, it has provided solutions that contribute to the sustainable development of society amid a rapidly changing business environment.

We face a severe economic environment as the US-China trade dispute, which has persisted since last year, along with other global trends toward protectionism, become more deeply entrenched, leading to stagnating steel demand and falling export steel prices. At the same time, the price of iron ore remained high as China expands its crude steel production, making it difficult for us to secure profit. Moreover, given the declining birthrate, an aging society, and falling population in Japan, we expect steel demand to decline over the medium to long term. In addition, the current global pandemic of COVID-19 has restricted economic activities around the world. The resulting sharp plunge in the global economy and slowing economic activities in Japan represent unprecedented challenges.

(Continued from the previous page.)

I believe the JFE Group must flexibly and effectively adapt to these immense changes in the business environment and demonstrate two qualities of sustainability: economic sustainability by creating economic value through sustainable growth and environmental and social sustainability by contributing to the resolution of social issues. We must become a resilient enterprise capable of consistently providing value over the long term.

Becoming a Truly Strong Enterprise through Efforts to Restructure the Steel Business and Address Climate Change

Given the continued uncertainty and severe environment, we have decided to take action on structural reform to create an optimal production framework within Japan. In our steel business, we will halt one blast furnace at the East Japan Works as part of our attempt to build a strong business structure capable of generating stable profit under any circumstances. At the same time, we will actively promote our ESG initiatives in environmental, social, and related aspects by positioning 2020 as the turning point.

As an enterprise engaged in iron and steel manufacturing, which is associated with emitting massive volumes of CO_2, the issue of climate change is a critical managerial concern from the perspective of business continuity. In May 2019, the JFE Group endorsed the final recommendations report released by the Task Force on Climate-related Financial Disclosures (TCFD) in 2017, which called for disclosing such information as a company's climate change strategies, and we included information such as our scenario analysis in our CSR report issued in September 2019. 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. Applying these to steel manufacturing has successfully reduced CO_2 emission intensity to the lowest level worldwide. In our disclosures consistent with TCFD recommendations, we explained our progress in developing innovative iron-making processes such as COURSE50 and ferro coke as well as our initiatives to realize zero-carbon steel. We also described our broad contributions to addressing climate change by explaining how we are reducing CO_2 emissions through the construction and operation of renewable energy plants in our engineering business and responding to the promotion of national resilience across the three business domains.

In 2020 the JFE Group set two ambitious targets: **(1) reduce CO_2 emissions in fiscal 2030 by 20% or more compared to fiscal 2013 in the steel business, which accounts for most of the JFE Group's CO_2 emissions, and (2) strive to be carbon neutral within the JFE Group as soon as possible after 2050, in line with the social transformation to establish carbon-free infrastructure over the long term.** With regard to the aforementioned structural reorganization of the steel business, we are trying to enhance economic sustainability by becoming a slim, stronger company with higher profitability. At the same time, by reinforcing initiatives against climate change, we intend to improve environmental sustainability, a critical concern the Group faces in its various ESG-related challenges. We plan to increase overall and sustainable corporate value through these efforts. This year will be the turning point for our business based on having made these major decisions, and we will take our first big step forward.

Risk Response in the Value Chain and Follow-up on KPIs to Resolve Material CSR Issues

In order to maintain the sustainability of the Group as a whole, it is extremely important to recognize the CSR challenges of the Group's global business and respond to the associated risks and opportunities. In this report, we treat our steel, engineering, and trading companies as well as all our stakeholders including suppliers and clients as a single value chain and organize and examine CSR challenges associated with each of them, particularly to confirm that we have not overlooked any risks or responses.

(Continued from the previous page.)

From the perspective of diverse stakeholders, the JFE Group has identified material CSR issues in the Group's business activities and set up KPIs for each operating company as a means of evaluating each of their initiatives. In FY2019, along with disclosing the initiatives, results, and evaluations of the previous year, we partially revised the KPI to strengthen initiatives to be taken during and after FY2020. The new KPIs will clarify the positioning of each material issue in management terms while ensuring that they are appropriate indices for measuring achievement and progress. They are also quantified insofar as possible to allow efficient implementation of PDCA cycles. Going forward, we will continue to regularly review each issue as well as the appropriateness of each index and enhance their effectiveness to further reinforce CSR management and strengthen the Group's sustainability.

Contributing to the Sustainable Development of Society

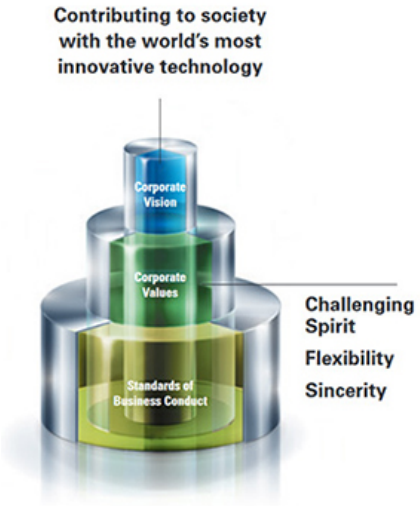
A female full-time Audit & Supervisory Board member was appointed at the JFE Group in 2019, followed by the appointment of the first female outside director in June 2020. We expect that the exchange of diverse opinions will enhance in achieving effective Group governance. We are also actively hiring female employees and mid-career talent to maximize the potential of employees with diverse values and background.

Under the JFE Group's corporate vision of contributing to society with the world's most innovative technology, we will deliver solutions that leverage our comprehensive strength and thereby strive to maintain the Group's sustainable growth, increase our corporate value, and ensure the development of a sustainable society.

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.

(Continued from the previous page.)

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.

JFE Group Value Chain

The JFE Group's value chain encompasses upstream and downstream activities across the globe. In conducting business, we seek to accurately identify and steadily respond to: (1)*1 the social challenges that the Group needs to address and (2)*2 the risks and opportunities that the Group must resolve through its business operations.

We will continue to implement further countermeasures throughout our value chain and strengthen the sustainability of the entire Group.

*1: Corresponds to social challenges in the Overview of the Value Chain
*2: Corresponds to risks and opportunities in the Overview of the Value Chain

Overview of the Value Chain

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.

● Social ◆ Environment

Social Challenges

- ● Exercise fair procurement
- ● Complete abolition of child labor and forced labor
- ● Prohibit the use of conflict materials
- ● Respect human rights
- ● Implement workstyle reform
- ◆ Transition to decarbonized society (climate change actions)
- ◆ Conservation of natural resources

Risks

<Common>

- ● Occurrence of accidents, including industrial accidents
- ● Potential human rights risks
- ● Labor risks
- ◆ Disruptions to the supply chain caused by climate change-related disasters, natural disasters such as earthquakes, and COVID-19

<Raw material: iron ore>

- ◆ Increased environmental impact (raw material procurement)

<Raw material: coal>

- ◆ Increased environmental impact (raw material procurement)
- ◆ Introduction of a carbon tax

<Machinery>

- ◆ Increased environmental impact (machinery procurement)

Opportunities

- ●◆ Develop a system to ensure stable procurement by expanding CSR procurement

Initiatives

- ●◆ Publicly release information on the Purchasing and Procurement Policies to suppliers and request that they take action
- ● Confirm that suppliers are not using conflict materials
- ◆ Reduce CO_2 emission during transportation by improving logistics efficiency
- ◆ Secure an alternative source of supply and distribute

<For more information:>

➤ Supply Chain Management (P. 37)
➤ JFE Group's Response to the TCFD (P. 74)

Manufacturing, Production, and Shipping

Employees | Local communities near manufacturing sites

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.

● Social ◆ Environment

Social Challenges

- ● Ensure occupational health and safety
- ● Provide stable supply of products
- ● Ensure quality
- ● Achieve co-existence and mutual prosperity with local communities
- ● Respect human rights
- ● Implement workstyle reform
- ● Ensure information security
- ◆ Transition to decarbonized society (climate change actions)
- ◆ Conservation of natural resources
- ◆ Reduction of waste
- ◆ Prevention of water resource exhaustion

Risks

- ● Lose credibility with customers due to issues related to production and quality
- ● Culture of passing down technical skills is dying out
- ● Occurrence of accidents, including industrial accidents
- ● Potential human rights risks
- ● Labor risks
- ● Labor shortage
- ● Cyber security risks
- ◆ Physical and transitional impact of climate change (CO_2 emissions, water risk, etc.)
- ◆ Heightened decarbonization needs in iron and steelmaking process
- ◆ Risk of floods associated with rising sea levels
- ◆ Risk of drought in the water intake area, risk of pollution in the discharge area
- ◆ Shortage of disposal sites for waste generated by facilities and offices
- ◆ Tighter environmental regulations

Opportunities

- ● Ensure competitiveness through stable production and stable quality
- ● Construct favorable relationships with local communities
- ● Secure excellent human resources through workstyle reform
- ◆ Expand electric furnace steelmaking and electric furnace engineering businesses
- ◆ Develop eco-friendly innovative technologies and ensure competitiveness

Initiatives

- ● Testing, inspections and quality audits
- ● Strategic investment and renovation of facilities including R&D
- ● Production site tours for stakeholders
- ◆ Increase the efficiency of the iron and steelmaking process, develop and introduce super innovative technology
- ◆ Develop eco-friendly products
- ◆ Develop and install energy-saving equipment for environmental protection
- ◆ Recycle industrial water by water purification
- ◆ Conduct 3R (reducing, reusing, and recycling) activities
- ◆ Implement measures against flood and drought

For more information:

- Environmental Management (P. 39)
- Development and Provision of Eco-friendly Processes and Products (P. 46)
- Climate Change (P. 63)
- JFE Group's Response to the TCFD (P. 74)
- Efficient Use of Resources (P. 100)
- Water Security (P. 103)
- Customer Responsibility (P. 111)
- Community (P. 138)

Sales and Usage Employees Customers

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 electromagnetic steel plates 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.

● Social ◆ Environment

Social Challenges

- ● Compete fairly
- ● Respect human rights
- ● Implement workstyle reform
- ● Ensure information security
- ◆ Transition to decarbonized society (climate change actions)
- ◆ Conservation of natural resources

Risks

- ● Legal risks such as violations of antitrust law or competition law
- ● Occurrence of accidents, including industrial accidents
- ● Potential human rights risks
- ● Labor risks
- ● Cyber security risks
- ◆ Increased environmental impact during product use

Opportunities

- ● Secure excellent human resources through workstyle reform
- ◆ Renewed interest in recyclability of steel
- ◆ Contribute to reduced CO_2 emissions by providing high-performance steel such as high tensile strength steel sheets and electromagnetic steel plates

Initiatives

- ● Conduct compliance training
- ◆ Reduce CO_2 emissions during product use
- ◆ Promote a shift in transportation modes
- ◆ Provide eco-friendly products

<For more information:>

- Climate Change (P. 63)
- Development and Provision of Eco-friendly Processes and Products (P. 46)
- Compliance (including Anti-corruption) (P. 158)

Collecting Steel Scrap Employees Customers Society

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

● Social ◆ Environment

Social Challenges

- ● Respect human rights
- ● Implement workstyle reform
- ● Ensure information security
- ◆ Transition to decarbonized society (climate change actions)
- ◆ Conservation of natural resources
- ◆ Prevention of resource depletion
- ◆ Increase the volume of scrap generated

Risks

- ● Occurrence of accidents, including industrial accidents
- ● Potential human rights risks
- ● Labor risks
- ● Cyber security risks
- ◆ Decline in the grade of obsolete scrap
- ◆ Rising price and difficulty of obtaining obsolete scrap

Opportunities

- Increased use of scrap
- Expand the scrap distribution business

Initiatives

- Efficient transportation for collecting steel scrap
- Efficient use of resources based on increased use of scrap

<For more information:>

- Climate Change (P. 63)
- Efficient Use of Resources (P. 100)

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.

Planning, Development, and Design Employees Customers

● Social ◆ Environment

Social Challenges

- ● Maintenance of social infrastructures, aging of facilities
- ● Disaster prevention and mitigation, national resilience
- ● Respect human rights
- ● Implement workstyle reform
- ● Ensure information security
- ◆ Transition to decarbonized society (climate change actions)
- ◆ Resource restriction
- ◆ Conservation of natural resources
- ◆ Reduce waste plastic
- ◆ Reduce food waste

Risks

- ● Lose credibility with customers due to issues related to production and quality
- ● Potential human rights risks
- ● Labor risks
- ● Labor shortage
- ● Cyber security risks
- ◆ Tighter environmental regulations

Opportunities

- ●◆ Implement requested functions
- ●◆ Need for cost reduction and energy saving
- ● Expand ESG investment
- ◆ More sophisticated needs in the energy-environment area
- ◆ Increased need for renewable energy solutions
- ◆ Increased demand for CCU/CCS facilities
- ◆ Increased response to climate change related disasters (disaster prevention and mitigation, disaster waste processing)
- ◆ Increased demand for plastic recycling
- ◆ Increased demand for food waste power generation

Initiatives

- ●◆ Pursue research and development
- ●◆ Design products that meet quality requirements, regulations, cost reduction, and energy-saving requirements
- ● Deliver solutions that meet customer needs
- ● Secure competitiveness by creating a new business model that contributes to addressing social problems (plastics and food products)
- ● Use big data and AI in design
- ◆ Plan for construction and operation of a power plant that utilizes renewable energy as well as the sales of electricity

<For more information:>

- Development and Provision of Eco-friendly Processes and Products (P. 46)
- Climate Change (P. 63)
- Customer Responsibility (P. 111)
- Business Model (JFE GROUP REPORT 2020 pp. 19–20) (https://www.jfe-holdings.co.jp/en/investor/library/group-report/)

Procurement Suppliers

● Social ◆ Environment

Social Challenges

- ● Fair procurement
- ● Complete abolition of child labor and forced labor
- ● Respect human rights
- ● Implement workstyle reform
- ● Ensure information security
- ◆ Transition to decarbonized society (climate change actions)
- ◆ Conservation of natural resources

Risks

- ● Potential human rights risks
- ● Labor risks
- ● Labor shortage
- ● Cyber security risks
- ◆ Increased environmental impact (material procurement)
- ◆ Disruptions to the supply chain caused by climate change-related disasters, and natural disasters such as earthquakes
- ◆ Risk of drought in the water intake area, risk of pollution in the discharge area

Opportunities

- ●◆ Development of stable procurement though expansion of CSR procurement.

Initiatives

- ●◆ Making public the procurement policy and requesting the commitment of suppliers
- ●◆ Requesting suppliers to take action in CSR initiatives
- ◆ Promote green procurement

<For more information:>

➤ Supply Chain Management (P. 37)
➤ JFE Group's Response to the TCFD (P. 74)

Production and Construction Employees Business associates

● Social ◆ Environment

Social Challenges

- ● Ensure quality
- ● Ensure occupational safety and health
- ● Respect human rights
- ● Implement workstyle reform
- ● Ensure information security
- ◆ Transition to decarbonized society (climate change actions)
- ◆ Conservation of natural resources
- ◆ Issues regarding waste reduction
- ◆ Preserve living environments

Risks

- ● Culture of passing down technical skills is dying out
- ● Occurrence of accidents, including industrial accidents
- ● Potential human rights risks
- ● Labor risks
- ● Labor shortage
- ● Cyber security risks
- ◆ Effects of meteorological disasters
- ◆ Violation of environmental regulations and laws
- ◆ Environmental accidents
- ◆ Pollution of the environment

Opportunities

- ● Saving labor through new technology

Initiatives

- ● Introduce a labor-saving construction method
- ◆ Promote waste recycling

<For more information:>

▸ Efficient Use of Resources (P. 100)

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.

Maintenance and Operations | Employees | Customers

● Social ◆ Environment

Social Challenges

- ● Improve productivity
- ● Disaster prevention and mitigation
- ● Ensure occupational safety and health
- ● Respect human rights
- ● Implement workstyle reform
- ● Ensure information security
- ◆ Transition to decarbonized society (climate change actions)
- ◆ Reduce CO_2 emissions
- ◆ Conservation of natural resources
- ◆ Issues regarding waste reduction

Risks

- ● Cyber security risks
- ● Culture of passing down technical skills is dying out
- ● Occurrence of accidents, including industrial accidents
- ◆ Meteorological disasters affecting operations
- ◆ Risk of floods associated with rising sea levels
- ◆ Risk of drought in the water intake area, risk of pollution in the discharge area
- ◆ Violation of environmental regulations and laws
- ◆ Environmental accidents

Opportunities

- ● Expand the business scale through privatization of public services
- ● Need for remote monitoring and automation due to a lack of human resources
- ◆ Need for improving operational efficiency and reducing environmental impact

Initiatives

- Use AI and IoT to develop technologies for remote monitoring and automation as well as prediction of mechanical breakdowns

<For more information:>

- Development and Provision of Eco-friendly Processes and Products (P. 46)

- Optimize operations by analyzing incinerator combustion conditions, reduce environmental impact

Value of Steel

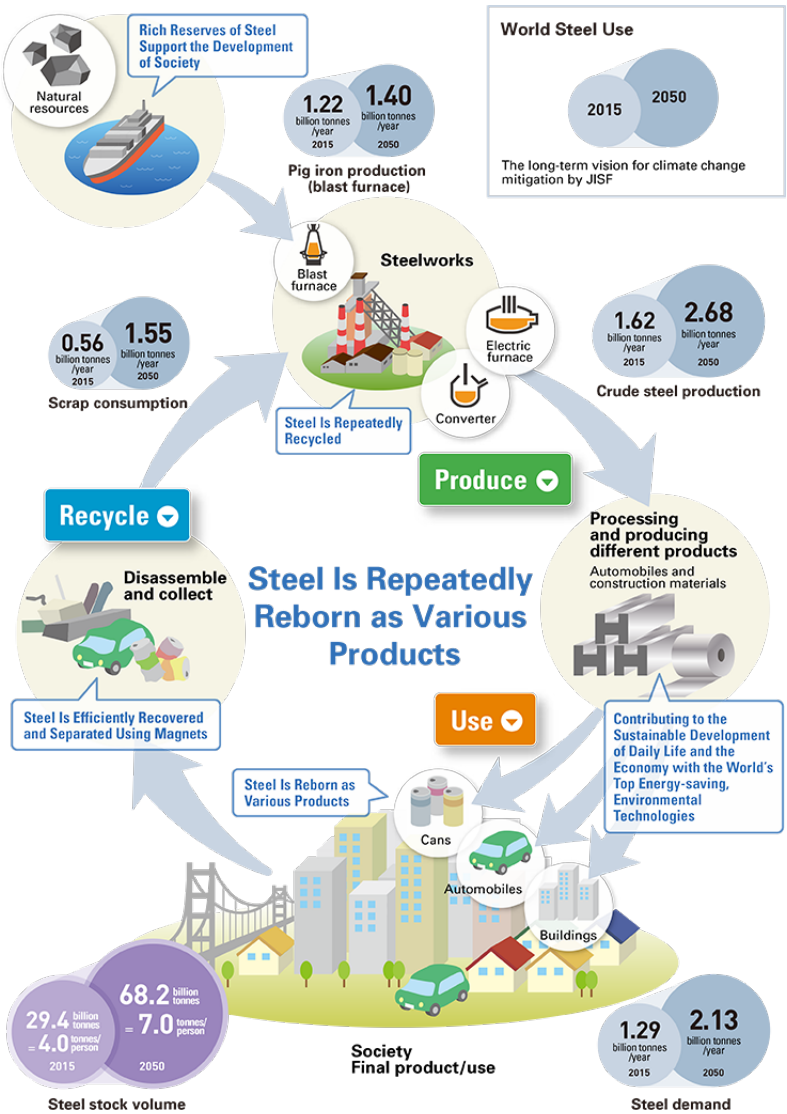
Iron makes up approximately 30% of the Earth's mass. Because of its rich reserves, steel can be mass produced at very low cost. Compared to other materials, the environmental impact of its production is extremely low and it has excellent recyclability. Steel can be recycled repeatedly and reborn as various 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.

* 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)

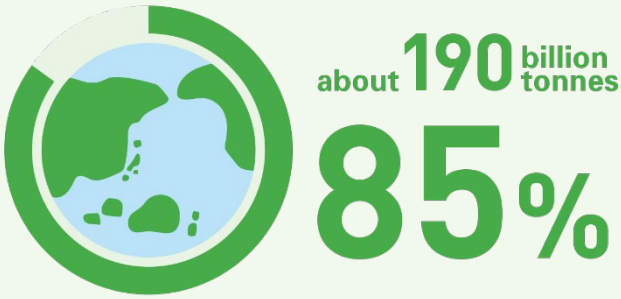


Produce High Economic Efficiency and Low Environmental Impact

Earth, a Planet of Iron (Abundant Resources)

As much as 85% of the Earth's metal resources are iron ore (190 billion tonnes).
Source: Mineral Commodity Summaries (2016)

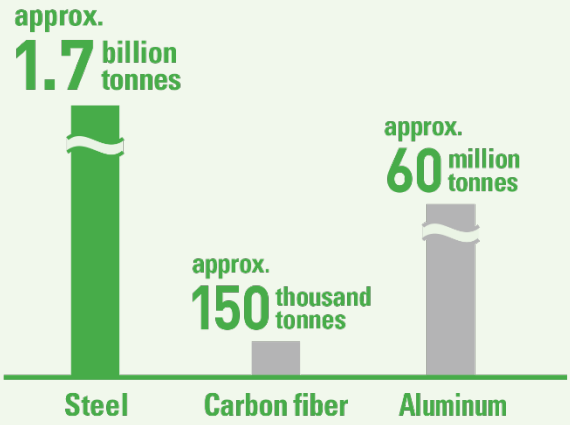
Recoverable Reserves of Iron Ore on the Earth



Mass Production at Low Cost

Iron is a material with rich reserves and a long history of development. It can be mass produced at reasonable price and supplied stably, thereby contribute to the sustainable growth of society.

Global Demand(2017)



Created by JFE Holdings with documents from Mizuho Bank Industry Research Division and economic forecasts by Fuji Kenzai Co., Ltd.

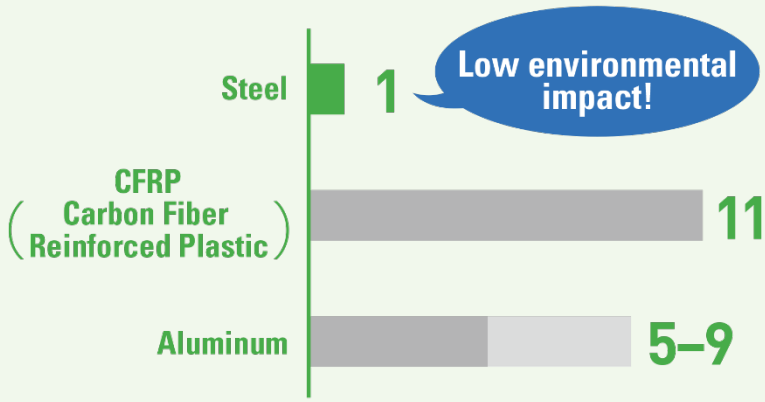
Price*

Research: JFE Holdings
* Cost of producing one unite 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*1 is 1/5 to 1/9 of that of aluminum and approximately 1/11 of that of carbon fiber. 。

GHG Emissions at the Manufacturing Stage*2

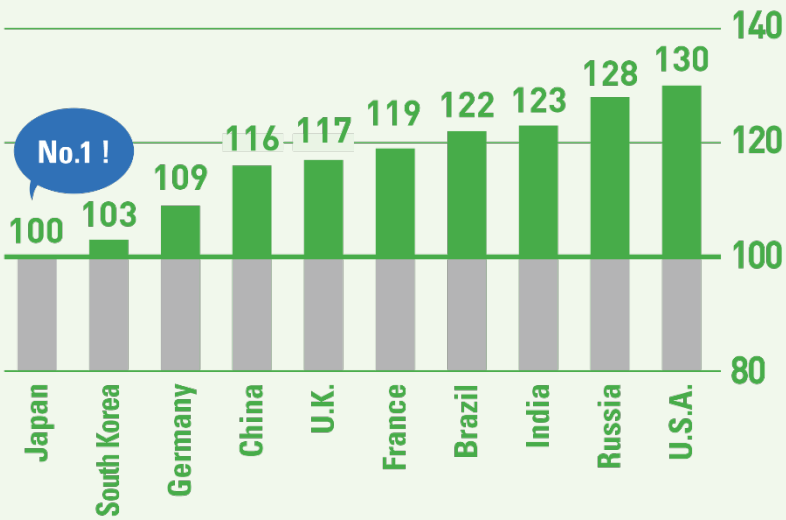


Source: Steel Recycling Institute
*1 From mining raw materials to factory shipment.
*2 Comparison with other materials' GHG emissions per unit weight, with steel as 1.

Japan's Steel Industry Keeps the Top 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)



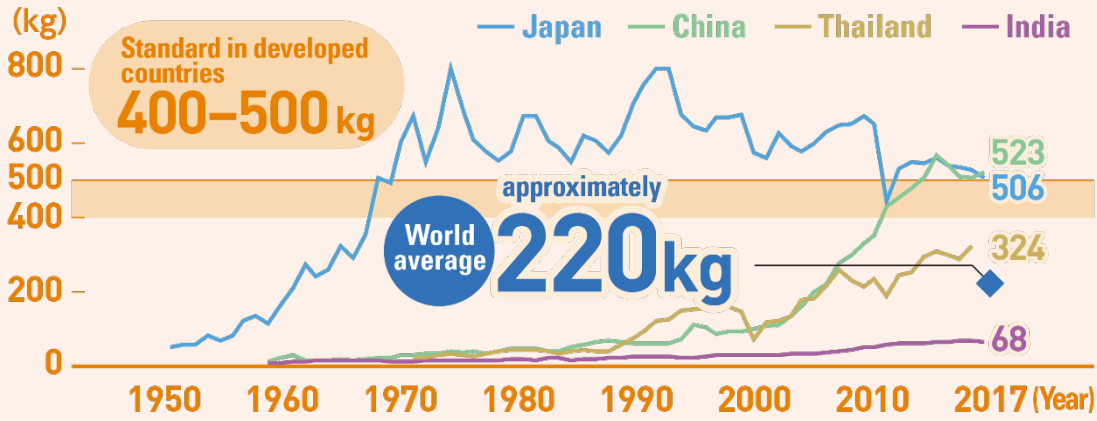
Source：Research Institute of Innovative Technology for the Earth(RITE)

Use Foundation of Daily Life and Society

The Potential to Grow on a Global Scale

Global average of annual consumption of steel is approximately 220 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)

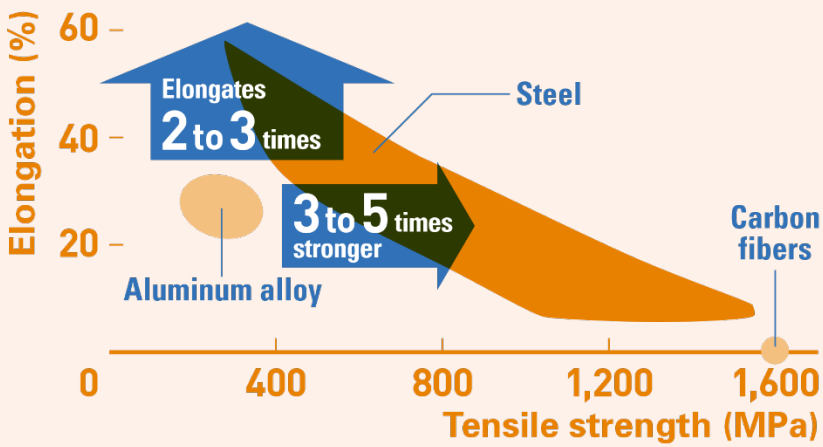


Source: World Steel Association

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

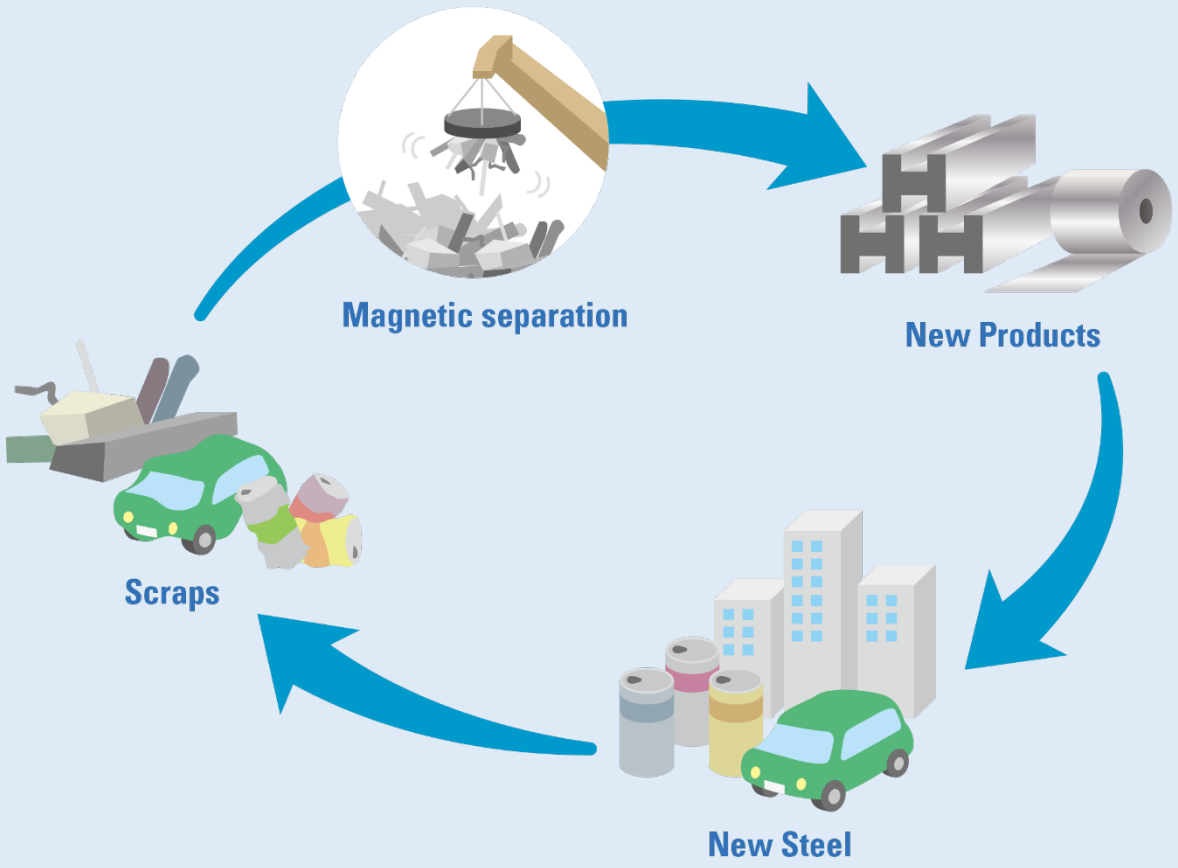
Steel is a highly recyclable material that can be easily recovered and separated using magnets. It can be efficiently recovered, separated, and recycled into high-quality, high-functioning products over and over again through closed-loop recycling.

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.

Closed-loop Recycling



* 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.

Material CSR Issues

Identifying material CSR issues

The JFE Group identified material CSR issues that strongly impact where and how it should invest its resources, making every effort to minimize negative societal impact and maximize the societal value as only the JFE Group can.

The following table summarizes five areas of focus and 13 specific issues identified as material CSR issues. The JFE Group will respect human rights as a fundamental aspect of its business and activities contributing to society and will advance its efforts to address these material CSR issues based on fair and transparent corporate governance. Such initiatives will demonstrate the Group's vision of "Contributing to society with the world's most innovative technology" and will contribute to its sustainable growth as well as the sustainability of society.

Contribution to the Sustainability Development Goals (SDGs) through Business Activity

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

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

Areas of Focus		Details	Scope of Influence	Material CSR Issues	Relevant SDGs
Activity	Provide quality products (customer satisfaction)	• Provide products and services based on advanced technologies - Continue stable supply of safe, high-quality products - Solve customer problems	JFE Group Customers Society	Stably supply products Ensure quality Pursue research and development Respond to customer needs	7 9 10 11 12 13 17
	Protect the global environment	• Mitigate environmental impact • Contribute to the creation of a recycling-oriented society • Utilize Group technologies to develop products that contribute to environmental protection	JFE Group Local communities near manufacturing sites Customers Society	Develop and provide eco-friendly products Mitigate climate change Protect the global atmosphere Pursue resource recycling	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 and create rewarding workplaces	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 associates	Pursue diversity and inclusion Strengthen human resources development	4 5 8 9 10
Basis of activity	Thoroughly enforce compliance		JFE Group Suppliers Political authorities Society	Ensure adherence to corporate ethical standards and compliance	10 16

Increased corporate value and sustainable growth

Goals

Help realize sustainable societies

Corporate Governance (Ensure Fairness, Objectivity and Transparency)

Respect and Maintain Awareness of Human Rights

Process for Identifying Material Issues

STEP1 Identification

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

- GRI G4 Sustainability Reporting Guideline
- ISO 26000
- Sustainability Development Goals (SDGs)
- ESG survey via external assessment organization
- Internal documents on employee satisfaction surveys, etc.
- Benchmark surveys conducted to the three businesses

35 Core Issues

Economy

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

Environment

14. Environment management
15. Financial benefits through environmental investment
16. Eco-friendly products
17. Global warming mitigation
18. Energy efficiency improvement
19. Efficient use of water resources
20. Air pollutant emissions control
21. Resource recycling
22. Biodiversity
23. Renewable energy
24. Chemical substances management and release control

Society

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

STEP2 Prioritization (Group-wide Meeting)

The 35 core issues identified in STEP 1 are prioritized through two criteria:
(1) Vertical axis: Stakeholder expectations
(2) Horizontal axis: Relevance to business (societal impact)
(1) We identified 13 issues in 5 focus areas by measuring the impact of decision-making on stakeholders for (1), and holding a Group-wide review meeting for (2).

Group-wide Meeting to Prioritize Material CSR Issues Held on November 29, 2016

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

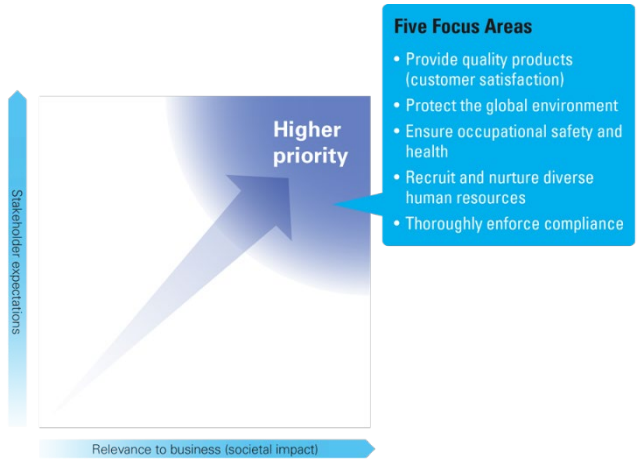


STEP3 Validation

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

- Confirmation and examination by each operating company
- Examination and approval by the JFE Group CSR Council*

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



STEP4 Review and Set KPIs

We reviewed material CSR issues identified in FY2016 and set KPIs in FY2017.

- Review
  - Review by the JFE Group CSR Council
  - Examine comments by third-party experts on the CSR report

- Set KPIs
  Set KPIs in accordance with the following process and implement PDCA cycles
  - Review at each operating company
  - Submit draft KPIs to the JFE Group Environmental Committee for deliberation
  - Examination and approval by the JFE Group CSR Council

KPIs for Material Issues

KPIs for Material CSR Issues -Results for FY2019 and Revision to be Applied on and after FY2020

The JFE Group has 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.

The Group will efficiently implement PDCA cycles and promote effective CSR management by setting KPIs that take into consideration the business characteristics of each operating company.

■KPIs for Material CSR Issues
Results for FY2019 and Revision to be Applied on and after FY2020

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 result will be that of the operating company that showed the lowest performance.

Area of Focus		Material CSR Issue	Operating Company	Targets/KPIs	Initiatives and Results for FY2019	Assessment	Targets/KPIs for FY2020
Activity	Provide quality products (customer satisfaction)	Stable supply of products	ST	(1) Maintain stable operations to ensure stable product supply (2) Make steady progress on strengthening the manufacturing base, including measures to stabilize blast furnace operation	• Operation of facilities at each steelworks and district were stable as a result of steady progress in strengthening the manufacturing infrastructure, which led to improvement of the y-o-y on-time delivery rate	○	(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
			EN	• Secure a stable number of certificated managing engineers	• Stable number of managing engineers was secured while achieving high sales revenue	○	• Secure a stable number of certificated managing engineers
			SH	• Make consistent investment in processing and distribution operations	• Investments necessary to realize stable product supply were all carried out during this fiscal year **Details of investments (amount resolved):** ▸Reinforcement: 1.7 billion yen ▸Renovation and security: 2.0 billion yen ▸System: 1.8 billion yen	○	• Make consistent investment in processing and distribution operations
		Ensure quality	ST	• Make steady progress on capital investments to improve the level of quality assurance and product testing in line with the Sixth Medium-term Business Plan	• Approval for investments for full automation of the four critical items set in the Sixth Medium-term Business Plan was mostly acquired during FY2019 (tensile test: 96.7%, molten steel analysis: 100%, automotive steel sheet thickness measurement: 100%, coating weight measurement: 100%)	○	• Make steady progress on capital investments to improve the level of quality assurance and product testing; achieve full automation of the four critical items: tensile test, molten steel analysis, steel sheet thickness measurement, and coating weight measurement
			EN	• No major quality problems	• No major quality problems	○	• No major quality problems
			SH	• Conduct quality audits on group companies Continue conducting quality audits at least once a year for the 30 group companies in Japan and overseas that engage in manufacturing (maintain 100% audit performance rate)	• Conduct quality audits at 30 group companies in Japan and overseas in accordance with the quality audit plan; audit for six companies was postponed to FY2020 from the end of FY2019 in view of COVID-19; audit performance rate: 80% (14 companies in Japan, 10 overseas)	○	• Conduct quality audits on group companies Continue conducting quality audits to 32 group companies in Japan and overseas that engage in manufacturing (expand the number of companies subject to audit from 30 to 32)
		Pursue research and development	ST	• Make steady progress in research and development as set out in the Sixth Medium-term Business Plan	• R&D expense equivalent to the previous fiscal year was spent to put the new product into market as planned • Optimal operation technology leveraging data science technology was implemented company-wide	○	• Pursue strategic research and development ▸By developing data science application technology, in FY2020 aim to inaugurate the JFE Digital Transformation Center (JDXC), promote an AI application at blast furnaces, promote a DS application at three sintering plants in Fukuyama, and apply J-dscom*1* to all hot strip lines ▸Number of new products and new technologies to be developed in FY2020: over 20 (target accumulated total of 135 for the period from FY2015 to FY2020) *JFE Detecting-anomaly-Signs & COlor-Mapping system
			EN	• Make consistent or increased investment in research and development	• Investment was maintained/increased FY2017: 3.8 billion yen FY2018: 4.1 billion yen FY2019: 4.7 billion yen (15% increase from FY2018)	○	• 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
		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) Office heads, managers, and newly appointed employees took the course within two years (2) Provided feedback on CS survey results	○	(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
			EN	• Use data collected from customer surveys to enhance customer satisfaction	• Feedback was provided using construction evaluation forms for public works and quality management system customer surveys for private work	○	• Use data collected from customer surveys to enhance customer satisfaction
			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 and the participation of overseas employees in joint training in Japan; skill training: 4 courses, 130 participants; national staff training: 24 participants	○	• 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

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Area of Focus		Material CSR Issue	Operating Company	Targets/KPIs	Initiatives and Results for FY2019	Assessment	Targets/KPIs for FY2020
Activity	Protect the global environment	Develop and provide eco-friendly products	ST	• Make steady progress in developing new products and technologies, as set out in the Sixth Medium-term Business Plan	• Commercialized 16 eco-friendly products as planned: LALAC-HS (weathering steel for high-salinity environment), BRITE-ACE® (Tin free steel for a welded can with excellent high-speed weldability), FM800 (nickel-free alloyed steel powder), etc.	○	• Expand eco-friendly products and technological offerings: 15 or more in FY2020 (target accumulated total of 105 for the period from FY2015 to FY2020)
			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
		Mitigate climate change	ST	(1) CO_2 reduction target defined in the JISF's "Commitment to a Low Carbon Society" (2) Continue to invest in energy conservation	(1) Continuing to work in line with the plan to achieve the CO_2 reduction target defined in the JISF's "Commitment to a Low Carbon Society" (2) Made steady progress in energy conservation investment	○	• 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
			EN	(1) Contribute to climate change mitigation through our products and services ▸Promote waste-fueled power generation ▸Promote biomass power generation ▸Reduce energy use at water and sewage treatment plants ▸Promote geothermal, solar photovoltaic, and wind power generation ▸Distribute renewable energy-generated power (2) Reduce the carbon footprint of factories and offices	(1) Exceeded the target of two offerings a year, providing three waste-to-energy power generation plants and three biomass power generation plants; CO_2 reduction achieved through our plants sold (currently in operation): 4.13 million t-CO_2/year (2) Exceeded the target of 1% or more y-o-y reduction, achieving 13.7% reduction (FY2018: 13,100 t/year, FY2019: 11,300 t/year)	○	(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
		Protect the global atmosphere	ST	(1) Continue to 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) Maintained low emissions of NOx and SOx through thorough combustion management (2) VOC emissions: 51% decrease (3) Benzene emissions: 93% decrease (4) Dichloromethane emissions: 71% decrease	○	(1) Continue to 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)
			EN	• Continue to work on keeping NOx and SOx emissions at low levels	• Maintained low emissions as the amount discharged was significantly less than the total annual volume restriction equivalent; NOx: 178 Nm^3 (18,000 Nm^3); SOx: 40 Nm^3 (100 Nm^3) Note: The amount in parenthesis represents the total annual volume restriction equivalent.	○	• Continue to work on keeping NOx and SOx emissions at low levels **Numerical targets** (to maintain the emission below the total annual volume restriction equivalent): NOx: 18,000 Nm^3 SOx: 100 Nm^3
		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: 93.4% (2) Recycling rate of co-products: 99.7%	○	(1) Maintain the efficient use of water Recirculated water usage rate: 90% or more (2) Recycling rate of co-products: 99% or more
			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 (2) Recycle at least 98.0% of recyclable wastes generated at the Yokohama head office (3) Promote recycling business (plastics, foods, home appliances, fluorescent lamps, etc.)	(1) Recycling rate at construction sites ▸Recycled 99.7% of rubble ▸Recycled 98.8% of sludge ▸Recycled 85.0% of industrial waste (2) 98.8% (3) Promote J&T Recycling Corporation's food waste recycling business	○	(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 (2) Recycle at least 98.0% of recyclable wastes generated at the Yokohama head office
			SH	• Global recycling of steel scraps Increase scrap transaction to exceed the volume for FY2017 (FY2020 target: +3% from FY2017)	• Increased scrap transaction to exceed the volume for FY2017 (+2.8%); contributed to the expansion of a recycling-oriented society by focusing on expanding domestic and overseas supplier bases as well as increasing Japanese exports and overseas transactions	○	• Global recycling of steel scraps Increase scrap transaction to exceed the volume for FY2017 (FY2020 target: +3% from FY2017)

(Continued from the previous page.)

Area of Focus		Material CSR Issue	Operating Company	Targets/KPIs	Initiatives and Results for FY2019	Assessment	Targets/KPIs for FY2020
Activity	Ensure occupational safety and health	Prevent workplace accidents	All Group	• Workplace fatalities: zero occurrences	• Number of workplace fatalities for FY2019: ST 4 EN 2 SH 0	×	(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 floor or hand rail for work in high places and wear safety belt (2) Do not allow people 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 made to instill 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
		Ensure the health of employees and their families	All Group	• Provision rates of health guidance (by FY2020): ST 35% EN 35% SH 40%	• Provision rates of health guidance: ST 56.9% EN 28.9% SH 36.8%	△	• Provision rates of health guidance: ST 60% (by FY2023) EN 35% (by FY2020) SH 40% (by FY2020)
				• Rate of health examination for spouses: 60% (by FY2020)	• Rate of health examination for spouses: ST 48.2% EN 51.7% SH 51.0%	△	• Rate of health examination for spouses: 60% (by FY2020)
	Recruit and nurture diverse human resources	Pursue diversity and inclusion	All Group	• 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): 27% Career-track (technical position): 7% On-site position: 10% EN Career-track (white-collar position): 14% Production/construction position (technical): 14% SH Career-track (white-collar position): 25.5%	×	• 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
				• Females in managerial positions: five times the 2014 August figure by 2025	• Females in managerial positions: 3.5 times the 2014 August figure	△	• Females in managerial positions: five times the 2014 August figure by 2025
		Strengthen human resources development	All Group	• Improve technical skills and conduct high-quality training programs	• ST Training programs held Total program hours: 1,197,045 • EN Developed human resources through various training programs ▸Rank-based training: 389 participants ▸Overseas project human resources development program: 20 participants • SH Improve technical skills and conduct high-quality training programs (100% attendance from the target audience of rank-based training)	○	• Training hours per person ST Over 40 hours in each year EN Over 20 hours in each year SH Over 20 hours in each year • SH 100% attendance from the target audience of rank-based training
				• 100% attendance from the target audience for human rights awareness training	• Human rights awareness training attendance rate: ST 99.98% EN 100% SH 100%	△	• 100% attendance from the target audience for human rights awareness training
Basis of activity	Thoroughly enforce compliance	Ensure adherence to corporate ethical standards and compliance	All Group	• Steady execution of training to foster and maintain a sense of compliance (100% achievement)	• ST Conducted rank-based compliance training (100% achievement) • EN ▸Conducted rank-based compliance training and law-specific training (classroom instruction: total of 4,165 participants, e-learning: total of 17,897 participants) ▸Conducted hotline training and awareness-building activity (hotline training: 29 participants including group companies) • SH Conducted training to foster and maintain a sense of compliance (100% achievement) Compliance training: 13 bases in Japan (677 participants), 16 bases overseas (337 participants) Rank-based compliance training (237 participants) E-learning (3,487 participants)	○	• Steady execution of training to foster and maintain a sense of compliance (100% achievement)
				• Improve employee awareness of ethics reflected in the Corporate Ethics Awareness Survey • Conduct the Corporate Ethics Awareness Survey for all employees	• Conduct the Corporate Ethics Awareness Survey for all employees • ST Compliance awareness increased by four points from the previous survey (65% → 69%) Question: Do you think the Company's system and compliance initiatives have been improving, and has your own awareness increased as well? • EN Recognition of the hotline system increased by 14 points from the previous survey (63% → 77%) • SH Employee compliance awareness was confirmed to have increased in general compared to the previous survey; work is needed to address power harassment and increase recognition of the whistleblowing and hotline system	○	• Improve employee awareness of ethics reflected in the Corporate Ethics Awareness Survey

CSR Structure

JFE 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 (JFE Group CSR Council, Group Management Strategy Committee, and Board of Directors)

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. Three independent, cross-Group committees have been established under the council, JFE Group Compliance Committee, JFE Group Environmental Committee, and JFE Group Internal Control Committee to discuss specific topics as well as to oversee and direct the Group's CSR initiatives. Topics regarding CSR policies and initiatives discussed at the meetings of the Group CSR Council and deemed important to management will also be deliberated at the Group Management Strategy Committee and reported to the Board of Directors. The board oversees the Group's CSR activities by discussing the key matters reported.

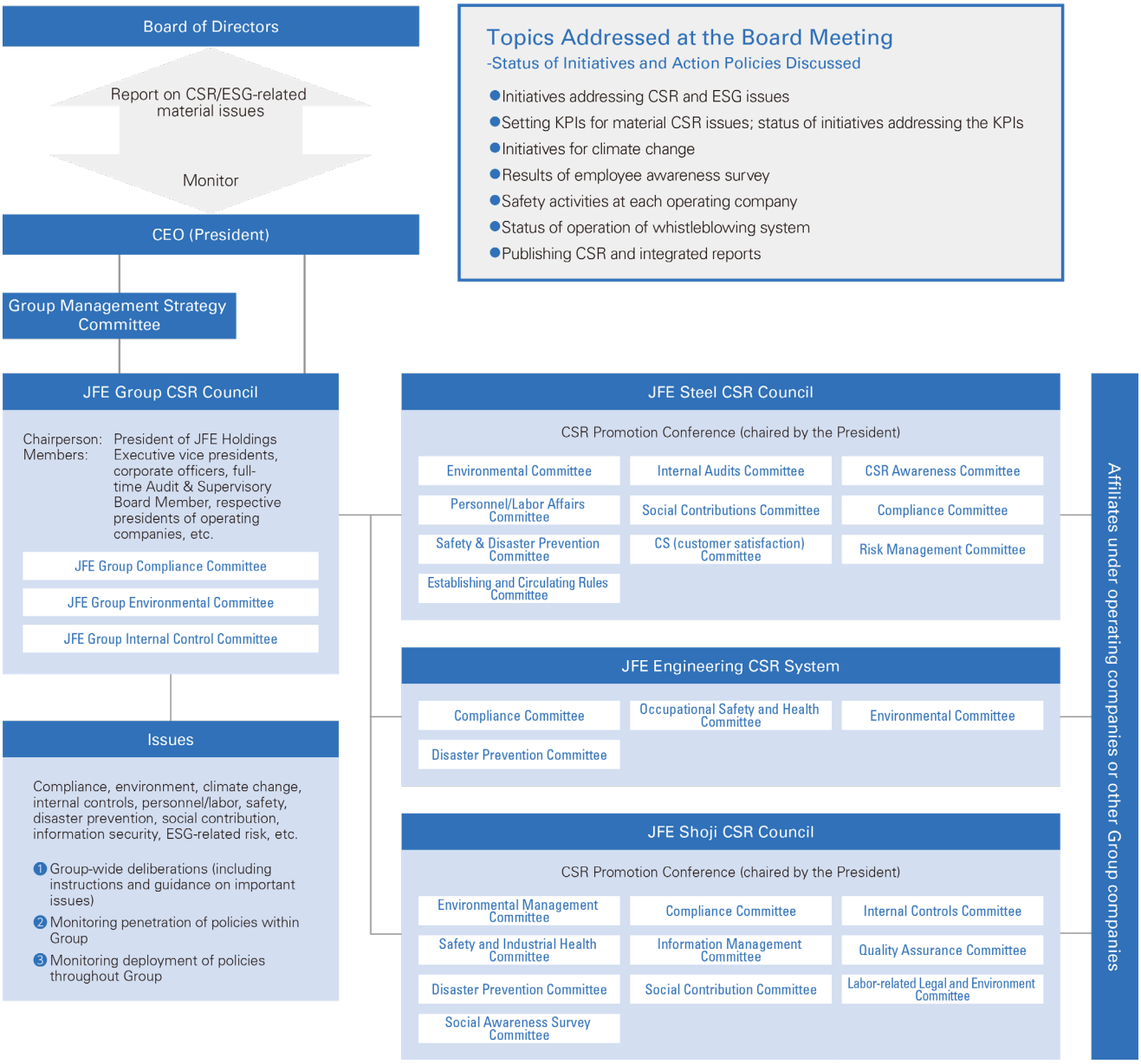
JFE Group CSR Council Activities

The Group CSR Council meets approximately once every three months to discuss policies related to the Group's CSR initiatives, including instruction and guidance on material issues, to monitor the penetration of the policies within the Group, and to share information and carry out horizontal communication regarding examples of our responses to issues and problems. The council deals with a broad scope of issues, including those related to compliance, the environment, climate change, human resources, labor issues, safety, disaster prevention, social contribution, addressing antisocial forces, and ESG-related risks.

Cooperation with Operating Companies

Entities with functions similar to those of the Group CSR Council are set up at each operating company as well and coordinate the promotion of Group-wide CSR initiatives. 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 establishment of committees in areas such as compliance and environmental committees.

■ CSR Structure



Confirmation and Improvement through the Employee Awareness Survey

The JFE Group regularly conducts a Corporate Ethics Awareness Survey 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 2019 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. The survey results were reported to the Board of Directors and JFE Group CSR Council, and each company worked on reflecting the information in their specific initiatives.

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. 37)	• Procurement Policy and Initiatives for Each Business • Promoting Green Procurement	
Addressing ESG Issues		
Environmental Management (P. 39)	• Environmental Management System • Environmental Education	
Climate Change (P. 63)	• Saving Energy and Reducing CO_2 in Iron and Steelmaking Process • Initiatives for Reducing CO_2	
Prevention of Pollution (P. 95)	• Controlling Air Emissions • Preventing Water Pollution • Management of Chemical Substances	
Efficient Use of Resources (P. 100)	• Reducing Generation and Emission of Co-products and Reusing Co-products • Promoting Recycling • Resource Recycling Solution	

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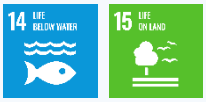
Water Security (P. 103)	・Efficient Use of Water	
Biodiversity (P. 106)	• Biodiversity Initiatives • Commitments to External Initiatives • Products and Technologies to Preserve Biodiversity	
Environmental Communication (P. 109)	• Disclosing Environmental Data • Disclosure and Exchange of Information	
Customer Responsibility (P. 111)	• Quality Initiatives • Quality Improvement and Enforcement of Quality Assurance Systems • Improving Customer Satisfaction • Responsible Export Practices	
Occupational Health and Safety (P. 117)	• Occupational Health and Safety • Employee Health	
Labor Standards (P. 124)	• Workstyle Reform • Operational Reform • Workforce Diversity Promotion • Developing Dynamic Work Environments	
Human Rights (P. 135)	• Respecting Human Rights Initiatives • Respecting the Rights of Workers	
Community (P. 138)	• Local Activities • Support for External Organizations • Support for Youth Development • JFE 21st Century Foundation	

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Shareholders and Investors (P. 147)	• Proactive Information Disclosure	
Compliance (including Anti-corruption) (P. 158)	• Adherence to Ethical Standard; Legal Compliance	
Tax Transparency (P. 164)	• Basic Policy	

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.

■ JFE Group's Major Stakeholders

Approach	Major Communication Methods, etc.	Others	
		Frequency (per year)	Scale, etc.
Shareholders/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 resolutions, etc.)	1	Approx. 150,000 shareholders
	Investors meeting (financial results, medium-term business plan, etc.)	5	Approx. 500 persons in total
	Individual meeting (financial results, medium-term business plan, etc.)	As needed	Approx. 400 persons in total
	Briefings (at the branch offices of securities firms, etc.)	11	Approx. 800 persons
	Plant tours for shareholders (steel, engineering, shipbuilding bases, etc.)	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	1	Approx. 40,000 copies
	Information via websites (for shareholders and investors), etc.	As needed	
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 support for quality assurance	As needed	Conducted at each operating company
	Interviews and questionnaires, such as that on customer satisfaction	As needed	Conducted at each operating company
	Information via websites (product information), etc.	As needed	

(Continued from the previous page.)

Clients			
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 purchasing activities	As needed	Conducted at each operating company
	Briefing and discussions	As needed	Conducted at each operating company
	Information via website, etc.	As needed	
Employees			
With the recognition of top management that creating workplaces to provide dignity and job satisfaction for all is essential for maximizing the potential of individuals, we have formulated the Basic Policy on Human Resource Management and Health Declaration and are conducting various activities toward attaining the goals.	Communications through daily operations and in the workplace	As needed	
	Internal newsletters and intranet	As needed	
	Various labor-management committees	2 to 4	Management and labor unions at each operating company
	Corporate Ethics Hotline	As needed	101 calls in FY2019
	Various training sessions	As needed	Position-specific, compliance, human rights, etc.
	Family days (visits by employee families, lunch at employees' cafeterias, etc.)	As needed	Conducted at each operating company
	Corporate Ethics Awareness Survey	1 (every 3 years)	At the company and operating companies

(Continued from the previous page.)

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' associations, events, etc.	As needed	
	Events at manufacturing bases (festivals, etc.)	Approx. once in each region	Approx. 270,000 persons a year
	Plant tours	As needed	100,000 or more persons a year
	Clean-up activities (vicinity of manufacturing bases, regional cleaning, etc.)	As needed	
	Sports promotion (baseball or jogging workshops, various sports competitions, etc.)	As needed	
	Others (education at 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 (http://www.jfe-21st-cf.or.jp/eng/) (various research support, regional activity support, etc.)	As needed	

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 Policy on Procurement

JFE Steel upholds its Basic Policy on Procurement to conduct purchasing activities with fairness and sincerity and thereby continue earning supplier trust as a good business partner.
JFE Steel's basic purchasing and procurement policies are summarized below.

- Basic Policy on Procurement (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.

- Purchasing and Procurement Policies (Japanese Only)
  (https://www.jfe-eng.co.jp/information/basic_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

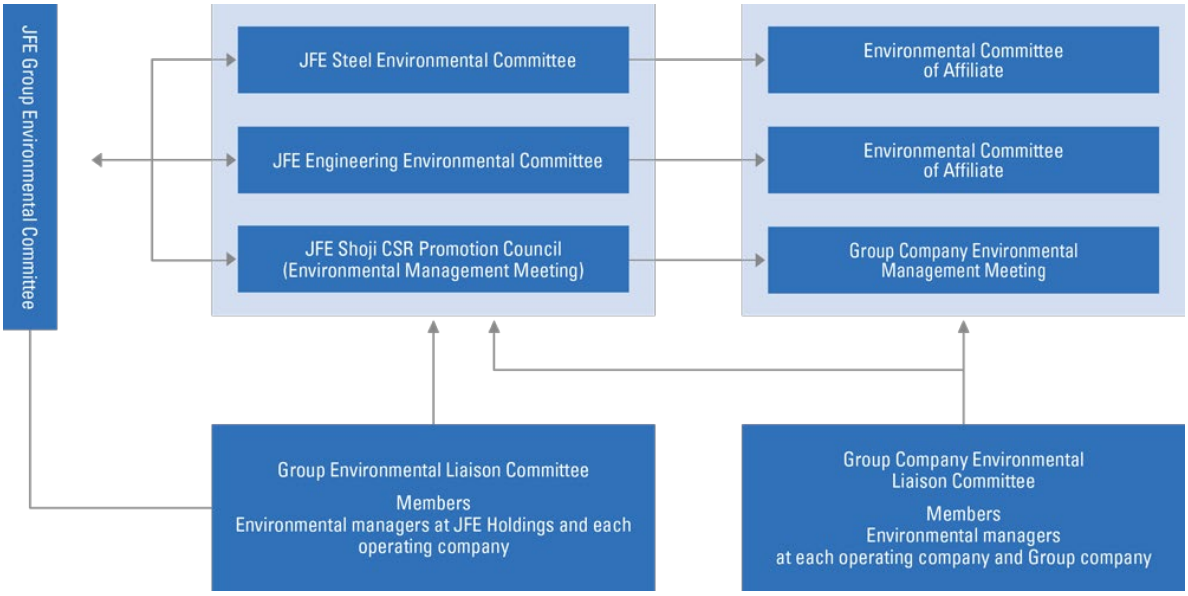
Framework for Environmental Management

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.
For the Group CSR System, please refer to the following information.

➤ CSR Structure: JFE CSR System (P. 29)

■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 75% of 41,305 employees at 80 companies covered in this report and 58% covered for total sites. In FY2019, there was no material breach of any environmental law or regulation involving fines by any operating company, and the total amount of fines and penalties was zero 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's Environmental Management System, which encompasses all employees, works to minimize environmental impact at production sites and branch offices and contribute to environmental protection through all products and services. The major strategies for FY2020 are (1) promote environmental contribution through products for mitigating global warming and climate change, (2) promote effective energy conservation and resource recycling that reflect the actual circumstances of each site and operation, 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.
For quantitative data related to ISO 14001, please refer to the following information.

➤ ESG Data: Environmental Data (P. 165)

Environmental Audits

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. For group companies, companies are grouped by risk assessments of equipment, etc., using self-checks based on checklists, part of an extensive audit conducted every one to five years.

Environmental audit of JSGI in Indonesia

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 Environmental Auditing Department conducts internal environmental audits at all of its affiliate companies that are ISO 14001-certified annually. Non-certified group companies are also audited once every three years by the Audit Department.
For quantitative data related to environmental audits, please refer to the following information.

➤ ESG Data: Environmental Data (P. 165)

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, the Safety and Environment Department and other departments worked together to create and implement an education program with details tailored to the specific needs of each department.

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. 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.

➤ ESG Data: Environmental Data (P. 165)

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. Such investments, which are categorized as environmental costs, cover equipment, facilities, and related expenditures for environmental protection and impact reduction.

Environmental Investment and Expenses

Environmental capital investment totaled 46.8 billion yen and expenses amounted to 113.1 billion yen in FY2019. Capital expenditure included 26.7 billion yen for measures to prevent global warming (measures to address climate change), 11.0 billion yen for air pollution countermeasures, and 4.1 billion yen for water pollution prevention. Environmental capital investment as a percentage of overall capital investment was roughly 19%.

Environmental expenses for environmental activities included 34.1 billion yen for air pollution countermeasures, 27.6 billion yen for global warming countermeasures (measures to address climate change) and 18.3 billion yen for industrial water recycling. Environmental R&D expenses came to 11.3 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 532.1 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 727.6 billion yen in environmental protection since 1973.

Results of Environmental Activities

Environmental protection costs include efforts to lower unit-based CO_2 emissions to prevent global warming and measures to reduce final-disposal waste and conserve natural resources through recycling. Other benefits include reduced discharges of airborne and waterborne substances with pollution loads and compliance with statutory regulations concerning exhaust gas emissions and discharged water.

The monetary value of energy savings realized through environmental capital investments and expenses in FY2019 is about 4.6 billion yen.

■ Breakdown of Environmental Costs

Main Items		FY2019	
		Investment (billion yen)	Cost (billion yen)
Management	Impact monitoring and measurement, and EMS expenses and education	0.1	2.6
Global warming countermeasures	Saving and efficiently using energy	26.7	27.6
Conservation of natural resources	Recycling industrial water	3.9	18.3
	Recycling and waste management of internally generated materials, etc.	0.06	5.1
Environmental protection	Air pollution countermeasures	11	34.1
	Water pollution countermeasures	4.1	11.3
	Prevention of soil contamination, noise, vibration, and subsidence	0.04	0.6
Other	Charges, etc.	-	1.5
R&D	Technologies for protecting the environment, saving energy, and preventing global warming	1	11.3
Societal activities	Support for nature preservation and forestation, information disclosure, exhibitions, and public relations	-	0.7
Total		46.8	113.1

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.

➤ ESG Data: Environmental Data (P. 165)

Development and Provision of Eco-friendly Processes and Products

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

➤ Development and Provision of Eco-friendly Processes and Products (P. 46)

Material Flow

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

- Material Flow (P. 61)

Related Links

- JFE Steel's Website: Environmental Initiatives (Japanese only)
  (https://www.jfe-steel.co.jp/research/environment.html)
- JFE Engineering's Website: 360°　JFE Engineering
  (https://www.jfe-eng.co.jp/en/360_jfe_engineering/#env)
- JFE Shoji's Website: Environment Management (https://www.jfe-shoji.co.jp/en/csr/environment/)

Development and Provision of Eco-friendly Processes and Products

JFE Steel

Ferro Coke

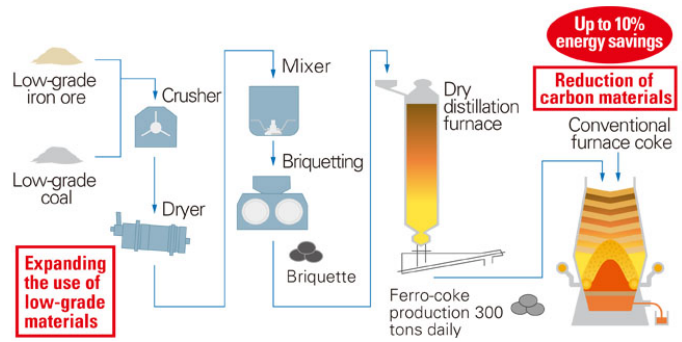
Ferro coke, an innovative raw material for blast furnaces, is made by mixing low-grade coke and iron ore. The ultra-fine metallic iron inside ferro coke acts as a catalyst and accelerates the reduction reaction rate in the blast furnace, significantly reducing the amount of coke required.

Since FY2017, JFE Steel has been conducting the New Energy and Industrial Technology Development Organization (NEDO)'s project, "the development of environmental technology for steelmaking process / technological development of iron making process utilizing ferro coke."

As part of the project, a medium-scale facility with the capacity to produce 300 tonnes of ferro coke per day is currently being constructed in the Fukuyama district of the JFE Steel West Japan Works, covering 12,600 square meters. The facility is designed to handle all steps involved in the production of ferro coke, from crushing and drying to molding and dry distillation. It is also capable of recycling ferro tar, a byproduct of ferro coke production, as a binding agent for briquetting.

Facility construction is scheduled for completion in September 2020. It will begin operations in October and demonstrate the effect of using ferro coke in blast furnaces over a long period. We expect to reduce energy consumption in the iron making process by 10% by 2023 and in turn achieve a significant reduction in CO_2 emissions.

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



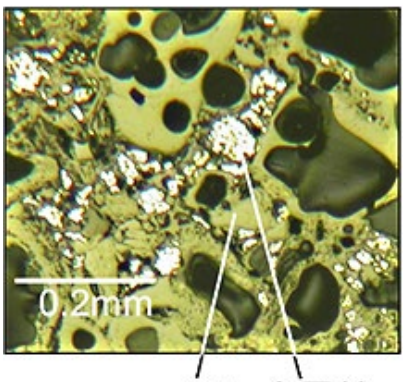
Medium-scale Ferro Coke Production Facility

■Ferro Coke

・Briquette

・Ferro coke

・Cross section of ferro coke



Coke Metallic iron

Introducing Data Science Technology at All Steelworks Blast Furnaces

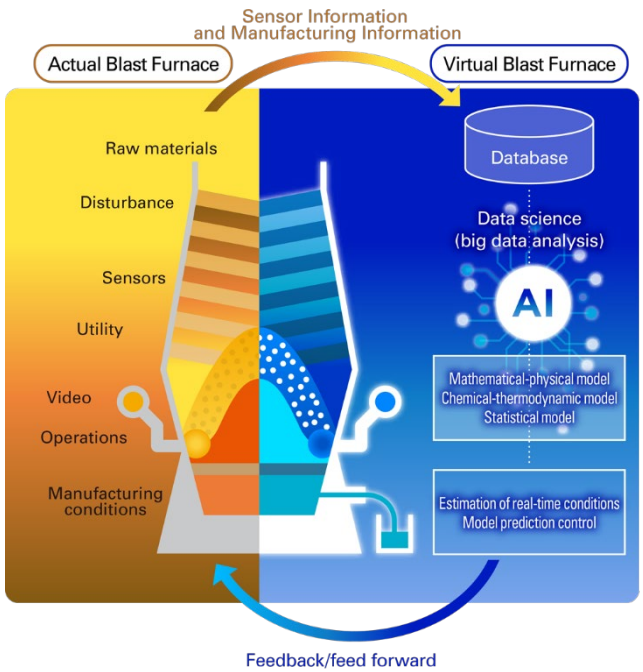
JFE Steel is introducing advanced data science technology (DS) at our blast furnaces.

To reduce CO_2 emissions from our steelworks, it is extremely important that blast furnaces, which remove oxygen in iron ore for the production of iron, operate stably and at high efficiency. However, attaining this level of operation is challenging because it is not possible to directly view the inside of the furnace and because operating conditions can change moment by moment depending on the raw materials used.

Consequently, JFE Steel is now deploying data science technology to convert its eight blast furnaces in Japan to cyber-physical systems (CPS) managed with computer-based algorithms. The conversion applies artificial intelligence to analyze sensor data collected from the physical manufacturing process and then creates a virtual (cyber) process in digital space using proprietary techniques, after which the two processes are linked in real time. The virtual process enables the visualization of the blast furnace's internal state to predict future conditions, allowing the blast furnace to operate stably, which in turn reduces CO_2 emissions.

In the longer term, JFE Steel intends to extend CPS conversion to other processes to realize innovative productivity and greater stability across all steel manufacturing operations.

■ Blast Furnace CPS Concept



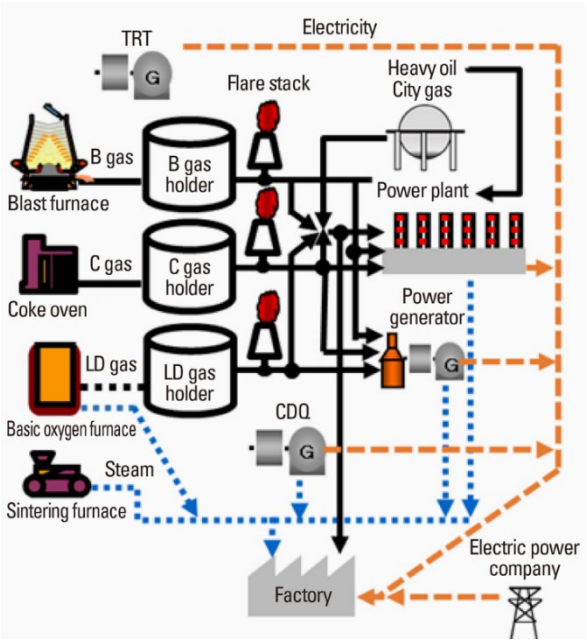
Introducing a Guidance System to Manage Fuels and Electricity Consumptions in Steelworks -Optimization of Consumption Based on Cyber-physical Systems

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 rolled out 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.

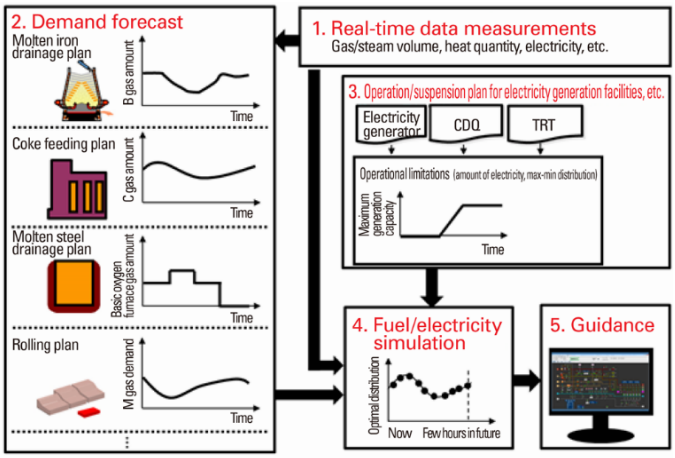
In steelworks, gases, electricity and steam that are generated as byproducts by upstream processes are consumed within the same premises. We also purchase fuel and electricity from external sources to meet actual demands. To efficiently utilize fuel and electricity, many different factors need to be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

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) considers operational and contractual limitations, (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



Technology Development for Realizing Zero-Carbon Steel

JFE Steel Corporation, together with Nippon Steel Corporation, Kobe Steel, Ltd. and Japan Research and Development Center for Metals Foundation applied to NEDO's public project "technology development for realizing zero-carbon steel" and were selected as the participating members as of June 11.

(Continued from the previous page.)

Based on the knowledge gained from a previous project, “the development of environmental technology for steelmaking process / development of hydrogen reduction and other technologies (phase II - step 1)” (COURSE50), we will conduct research over the project duration of FY2020–2021, which will involve assessing current challenges and creating a research and development roadmap for the research and development toward zero-carbon steel. These activities can serve as the foundation for future research and development and help to accelerate them. JFE Steel will be involved in holistically assessing various technologies, including the latest blast furnace technology and hydrogen reduction technology.

Conserving Energy by Reducing Energy Loss from Molten Steel Vessels

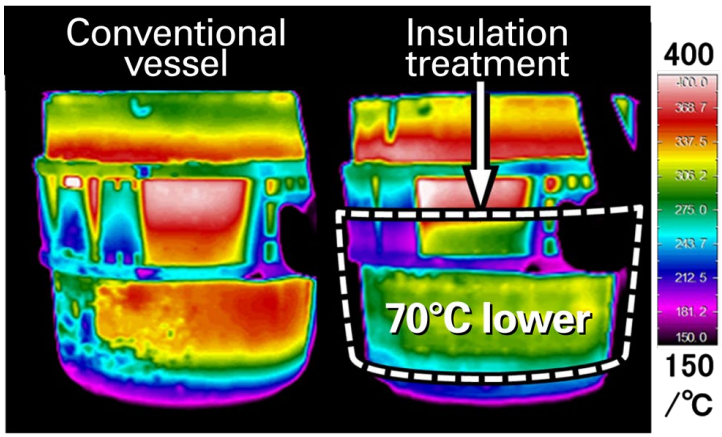
The vessels used in steelmaking to carry hot metal and molten steel are made of iron with inner walls covered in refractories. However, because the surface temperature of these vessels can exceed 300 degrees Celsius across such a large surface area, the vessel loses a significant amount to heat. To overcome this, we have developed a new technology that uses high-quality insulation material to lower the surface temperature and prevent radiation heat transfer.

After optimizing the insulation material layout, we conducted tests using production vessels over a long period and confirmed that the heat loss from the vessel surface was reduced to 55–75% of conventional vessels. Applying the technology to all of our molten metal vessels could achieve energy savings (in crude oil equivalent) of 21,000 kl annually, which equates to the annual consumption of 26,000 per the average household*.

The energy saving quality of this technology is highly regarded, and it received the ECCJ Chairman’s Award (The Energy Conservation Center, Japan Chairman's Award) in Energy Conservation Grand Prize 2019’s Best Practice Category.

* Calculated using a 31.3 GJ/household, the actual energy supply-demand data for FY2018 provided by the Agency for Natural Resources and Energy

■ Insulating Effect of High-quality Insulation Material



Anode Material for All-polymer Battery, a Next-generation Lithium-ion Battery (JFE Chemical Corporation)

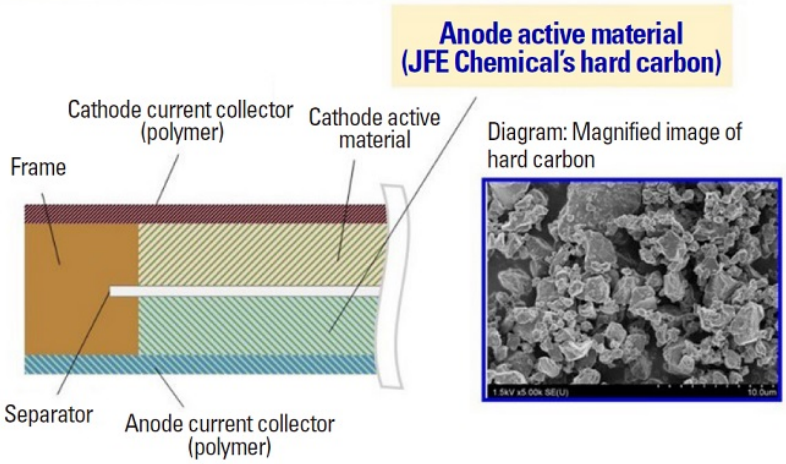
Electric vehicles and renewable energy are key pillars for realizing a decarbonized society in the future, and the further advance of these technologies will depend on the development of high-quality lithium-ion batteries. The all-polymer battery is a next-generation lithium-ion battery. It realizes greater safety, durability and energy density and will significantly reduce production costs and ensure high reliability under abuse. This innovative battery overcomes the shortcomings of conventional lithium-ion batteries and is expected to stabilize the use of solar power generation and other renewable energies while accelerating the pace of transition toward a decarbonized society. APB Corporation is a start-up company engaged in the development, manufacturing and sales of all-polymer batteries.

(Continued from the previous page.)

JFE Chemical, JFE Group's driving force in its chemical businesses, has been involved in mass-producing and selling anode materials for lithium-ion batteries using pitch derived from coal-tar, a steel manufacturing byproduct. Recently, the company invested in the above mentioned APB Corporation and agreed to supply them with hard carbon, a critical anode material for all-polymer batteries.

Using the technologies and know-how that it has accumulated over the years, JFE Chemical will work with APB Corporation and contribute to the mass-production of all-polymer batteries through the production and supply of hard carbon, which features low expansion and shrinkage and is suitable for the anode material of all-polymer batteries.

■ Structure of All-polymer Battery (Single Cell)



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 diversity.

Breakwater armor block

Coastal construction work using artificial stones made from steel slag hydrated matrix

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 FY2019, JFE Steel supplied approximately 6.8 million tonnes of granulated blast furnace slag to cement production, equivalent to a reduction of approximately 4.83 million tonnes of CO_2 emissions.

In addition, we are focusing on blue carbon (carbon removed from the atmosphere by ocean ecosystems), which has been a field of active research in recent years. We are involved in creating seagrass beds using steel slag products, measuring the amount of carbon absorbed and fixed by the seagrass beds and testing steel slag products as beds for seaweeds and corals.

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

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

Coral attached to Marine Block™

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 seweres and exposure to anti-freeze. Its effectiveness in reducing enviromental 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 a stronger nation.

Precast concrete products for extending road width

Restoring Marine Ecosystems Using Steel Slag Products

Marine Stone™, a gravel-type steel slag product, is a habitat forming material that suppresses hydrogen sulfide, which arises from an unhealthy seabed and improves water and sediment quality in enclosed coastal waters. 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.

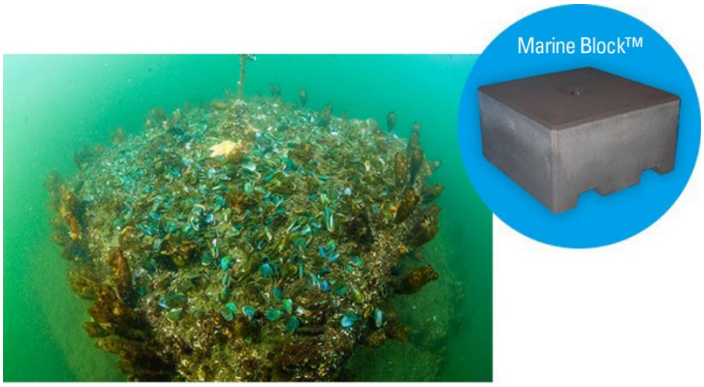
Hiroshima Prefecture has used a total of 38,000 tonnes of Marine Stone™ in its Fukuyama Port Marine Environment Creation Project (inner harbor area). Its marine environment improvement property was confirmed to still be effective in 2019, four years after its initial placement.

Inner harbor area of Fukuyama Port, Hiroshima Prefecture, at low tide, where Marine Stone™ is laid out. The entire area is covered by seaweed and the marine ecosystems restored!

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 sea organisms while also facilitating the natural cleansing of seabeds and 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 new agreement, we will continue to work toward improving the marine environment.

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



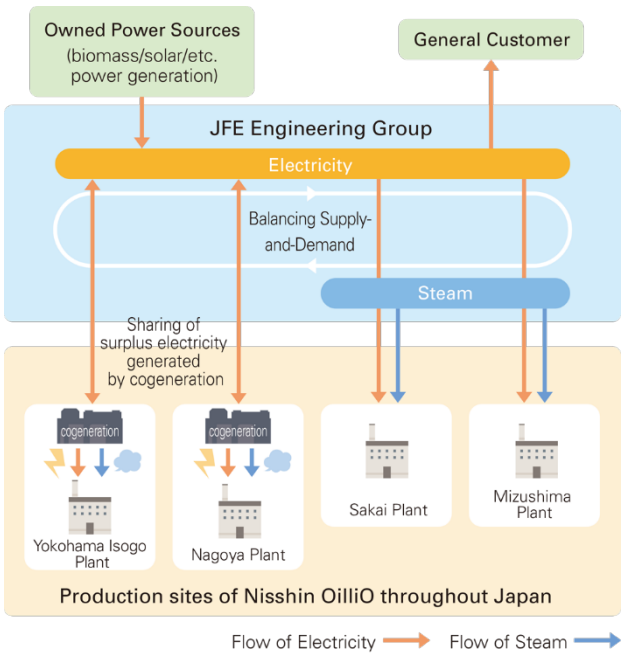
Marine Block™ covered by marine bivalves (Yokohama Bay area)

JFE Engineering

JFE-METS (Multisite Energy Total Service) Receives the Minister of Economy, Trade and Industry Award in Energy Conservation Grand Prize 2019

Typically, energy optimization is considered and addressed at a site level. JFE-METS is a new energy optimization service that offers energy optimization across multiple sites, for example, for an entire company or region. It offers a holistic energy conservation solution by analyzing what the customer's energy consumption currently looks like, installing and operating the most appropriate energy facilities that work across all their sites on their behalf and managing overall energy demand, including offsite locations.

■ Example of JFE-METS



Commercialization of the New Sewage Sludge Treatment Technology OdySSEA —an Innovative Technology Satisfying Both a Large Reduction in Greenhouse Gas (GHG) and High-efficiency Power Generation

In a joint project with the Japan Sewage Works Agency (president: Toshihiro Tsujihara, head office: Bunkyo-ku, Tokyo) and Kawasaki City extending over the two-year period of FY2017-2018, JFE Engineering carried out demonstration research combining a high-efficiency power generation technology that utilizes unused waste heat from a sewage sludge incineration facility and a technology that simultaneously reduces nitrous oxide (N_2O) and nitrogen oxides (NOx) by optimizing the air injection method. The demonstration research was also selected in the B-DASH Project[*1] of Japan's Ministry of Land, Infrastructure, Transport and Tourism (MLIT).

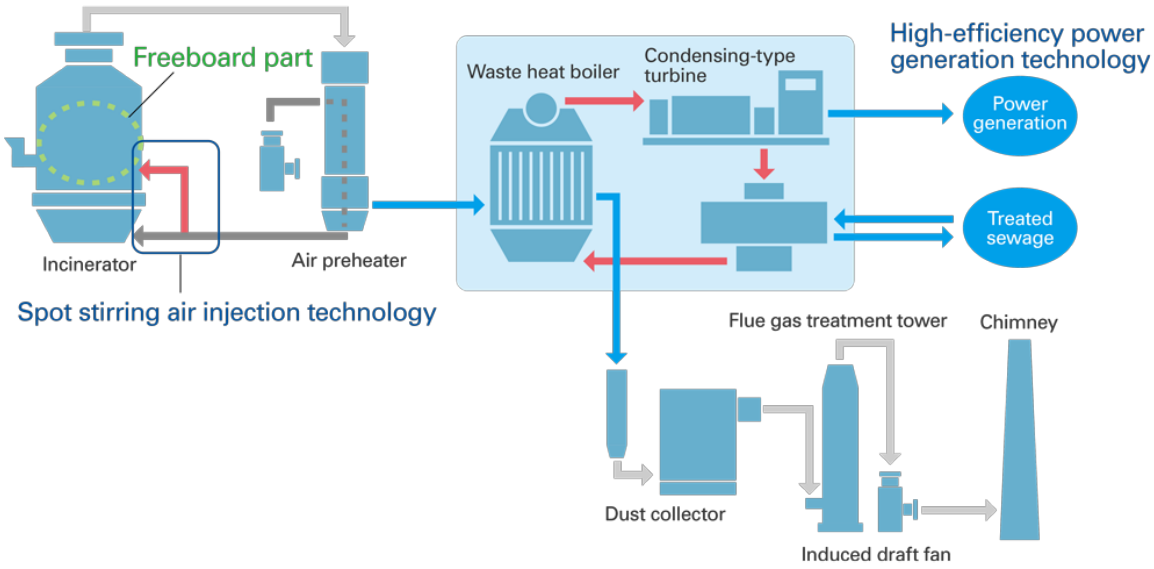
In this demonstration research, JFE Engineering verified that high-efficiency power generation is possible even in small-scale incinerators with a capacity on the order of 60 wet-t/d by introducing a newly developed condensing-type steam turbine and a system that utilizes treated sewage water for cooling. This confirmed that the OdySSEA technology realizes so-called complete electric energy self-sufficiency, in which the amount of generated power exceeds the power consumption of the facility.[*2]

(Continued from the previous page.)

This research also confirmed that NOx generation can be suppressed while simultaneously promoting decomposition of N_2O by efficiently burning sewage by concentrated spot stirring injection of air into the furnace from the optimum position and stirring the air in the furnace. While compact in size, OdySSEA realizes high performance, achieving reductions of more than 50 % in both N_2O and NOx.

*1 B-DASH is an abbreviation for the “Breakthrough by Dynamic Approach in Sewage High Technology Project” of the Ministry of Land, Infrastructure, Transport and Tourism (MLIT).
*2 Under conditions of an incineration rate of 140 wet-t/d and 73% water content.

■ System



Realization of Fully Automatic Operation of Waste Incinerator by New System Incorporating Operators’ Know-how

In waste treatment facilities, the stable operation of the incinerator is performed by an automatic combustion control system (ACC). However, because waste incinerators handle wastes of different sizes, shapes and materials, operation must be monitored by the operators from the central control room of the facility or from JFE Engineering’s Global Remote Center*, with manual interventions as necessary.

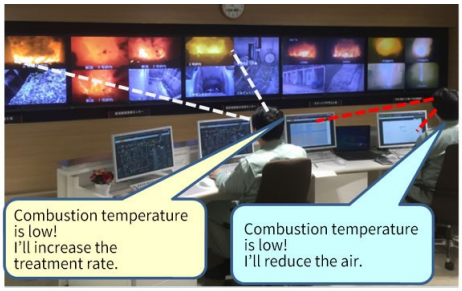
JFE Engineering has been working on advancing its ACC technology and on developing a system that automates the manual intervention operations, which are conventionally performed by operators. In October 2018, a new system that fully automated incinerator operation was rolled out in the Niigata City Shinden Clean Center and began its demonstration run.

The system successfully ran without requiring any manual interventions by the operators and maintained a combustion state more stable than a conventional system for more than two weeks. The stability of steam generated by the boiler also improved, leading to an increase in the amount of electricity generated. In the future, we will continue to run and monitor the incinerator operation using this system to verify its long-term stability and at the same time work on commercializing the system and installing it in waste treatment facilities delivered by JFE Engineering and to newly constructed plants.

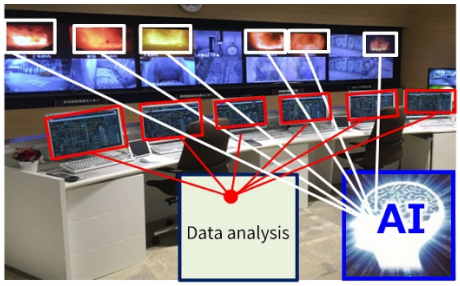
JFE Engineering will continue to work on these advanced initiatives toward achieving total plant automation. As a company that creates and supports the foundations for life, we will make full use of our abundant knowledge and leading-edge technologies to contribute to the formation of a recycling society and preservation of the global environment.

(Continued from the previous page.)

* Global Remote Center (GRC): A centralized monitoring center for various types of plants, which began operation at the JFE Engineering Yokohama head office in March 2018. GRC performs remote monitoring and operation support for object plants throughout Japan through a 24-hour system.

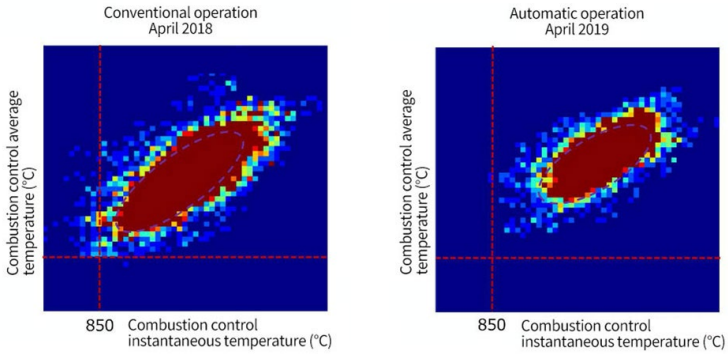


Conventional operation
(manual interventions by operators)



Operation using the new system
(fully automated)

Example tool of the newly developed system
(screens that visualize the AI analysis performed on flame images)



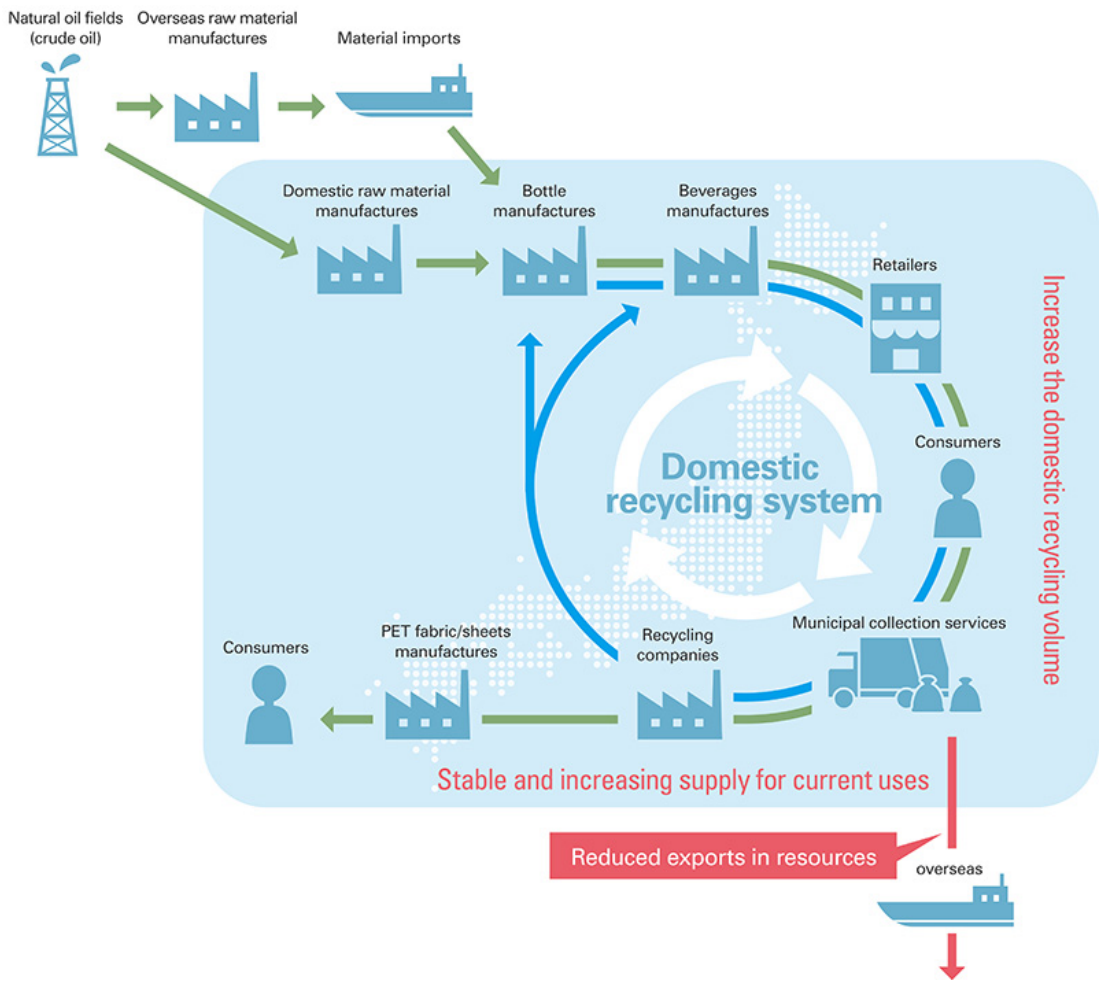
The distribution area of controlled combustion temperature is more than 20% smaller
→ combustion is more stable and generation is also more stable

Construction of a New Recycled PET Resin Manufacturing Factory to Realize Bottle-to-Bottle Recycling

In response to the marine pollution caused by plastic wastes, beverage manufactures have declared their intention*1 to shift completely from using petroleum-based PET bottles to PET bottles made from recycled PET resin*2 by FY2030. Following this trend, Kyoei Industry Co., Ltd., which was the first in Japan to establish the bottle-to-bottle*3 mechanical recycling system*4, and J&T Recycling Corporation, which has been supplying ingredient materials to the company for many years, have set up a new joint venture company in an effort to realize the system and build a new recycled PET resin manufacturing factory, the largest of its kind in Japan. The factory is to become the first recycling base for the JFE Engineering Group and Kyoei Industry Group in the Chubu/Kansai region.

*1 Declaration of Plastic Resources Recycling by the Soft Drinks Industry in November 2018
*2 Recycled PET resin is the raw material recovered from recycled PET bottles. The PET bottles are crushed, washed and dried to form flakes, which are then melted to even out quality and shaped into granular forms called pellets; resins are manufactured by extracting moisture from these pellets.
*3 The creation of a new PET bottle from recycled bottles
*4 Recovered resin obtained through material recycled (returning used products to material status via pulverization, cleansing and other processing) is processed for a regulated period under a high temperature and low pressure to remove impurities from the regenerated materials.

■ Bottle-to-Bottle Recycling



Resource Recycling Businesses of JFE Engineering

For more on the resource recycling businesses, please refer to the following information.

- JFE Engineering's Website: Recycling (https://www.jfe-eng.co.jp/en/products/recycle/rec01.html)

Promotion of Renewable Energy

JFE Engineering has established an array of electrical power generation plants that use renewable sources such as waste, biomass, solar and geothermal and has been commissioned to manage their operations. In response to the increasing number of corporations becoming more environmentally aware in recent years, its subsidiary, Urban Energy Corporation, introduced the special electricity tariff Zero Emission Plan in July 2018 for corporations and organizations, which supplies them with 100% renewable energy. JFE Engineering will continue its electricity retail business using its renewable energy sources through Urban Energy Corporation and contribute to renewable energy dissemination.

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

- Urban Energy Corporation' Website: Electricity Retail Business (Japanese only)
  (https://u-energy.jp/service/retail.html)

Regional Electricity Retail Businesses in Partnership with the Local Municipal Governments

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.

It sources its electricity from waste-fueled and other renewable-energy power generation plants that it has built and distributes the electricity to local areas and public facilities, thus promoting local production and consumption of electricity. Through these regional electricity businesses, JFE Engineering intends to promote renewable energy, reduce electricity cost for public facilities, and expand the region's industrial infrastructure.

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

- Urban Energy Corporation's Website: Regional Electricity Supply Business (Japanese only)
  (https://u-energy.jp/service/municipality.html)

Waste Incinerator that Uses a Counter Current Combustion Method

Massive demand for waste incinerators has recently emerged to cope with such concerns as reducing environmental impact, improving the efficiency of electricity generation, and lowering operational costs.

JFE Engineering became the first in the world to adopt the counter current combustion method, developed by deriving from high temperature air combustion technology, for waste incinerators, and it successfully reduced NOx concentration in exhaust gas by 20% to 30%, compared to the conventional method, while maintaining the same carbon monoxide (CO) concentration level. This eliminates the need for equipment to reduce the NOx concentration in exhaust gas and makes possible a more compact facility requiring less maintenance. In addition, the steam that had previously been consumed by denitration equipment can now be fed to turbines to generate electricity.

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

- JFE Engineering's website: Won the Minister of Economy, Trade and Industry Prize in the 44th Excellent Environmental Instrument Award (Japanese only)
  (https://www.jfe-eng.co.jp/news/2018/20180625.html)

JFE Shoji

Building a 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 as well as in the various types of motors used inside cars, which could be as many as 50 to 100 motors per car. We expect improvements in efficiency, smaller size and lighter weight.

In addition, in order to minimize energy loss while distributing electricity from source to factories and homes, continuous improvement, not just at JFE, is required in transformers, where the most loss of electricity occurs, to make them more efficient.

JFE Steel's electrical steel sheets significantly contribute to improving the efficiency of manufacturing motors and transformers. In addition to supplying these high-quality products to customers, JFE Shoji has the necessary infrastructure to ensure the stable supply of processed products tailored to each customer's requirements.

Customers who require high-quality electrical steel sheets, such as motor manufacturers and transformer manufacturers, typically operate manufacturing facilities across the globe. We are aligning ourselves to this trend and establishing a global quad-polar organization that includes Japan, America, China and ASEAN. This enables us to respond to the specific needs of customers, which in turn will contribute to tackling climate change.

Biomass Fuel

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.

■ Shipping Bases for Palm Kernel Shells

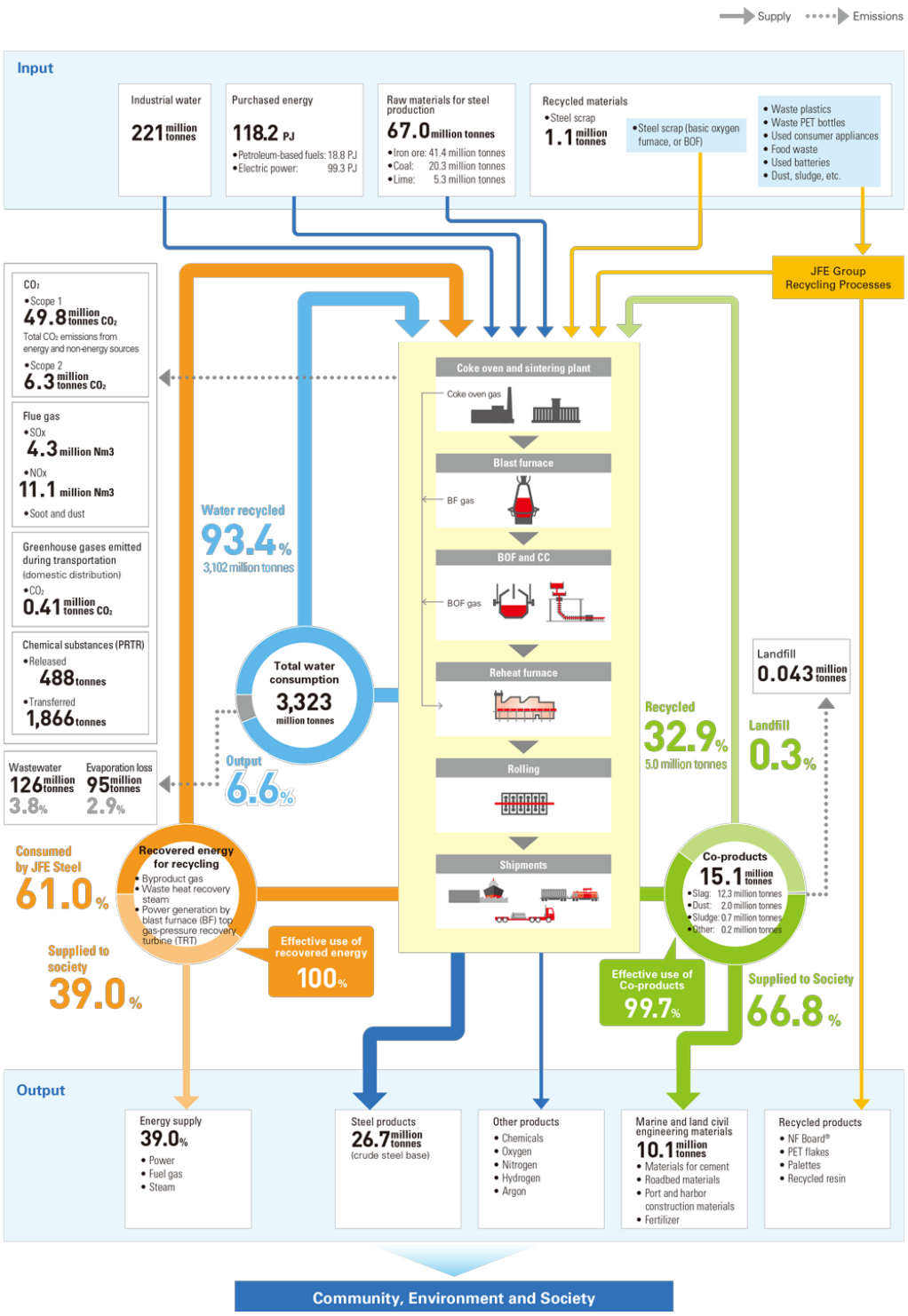
Expansion of Scrap Trading Helps in the Development of a Recycling Society

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 societies in Asia.

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 93.4% of the water it uses for production and uses 99.7% of its co-products, such as ironsteel 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	**39,400** tonnes
Energy	
•Electric power purchased	**26.3** GWh
•Class A heavy oil	**150** kl
•Kerosene	**8.5** kl
•Light oil	**235** kl
•Gasoline	**13.8** kl
•City gas	**453,300** tonnes
•LPG	**111.4** tonnes
Water	**106,000** tonnes

JFE Engineering

- **Tsurumi Works**
- **Tsu Works**

Output and Emissions

Products	**36,600** tonnes
CO_2	**9,700** tonnes CO_2
•Scope 1	**3,000** tonnes CO_2
•Scope 2	**6,700** tonnes CO_2
Waste generated	**1,800** tonnes
•Industrial wastes	**1,500** tonnes
•General wastes	**313** tonnes
Wastewater (ocean only)	**126,000** tonnes
Others (PRTR)	**136** tonnes

Climate Change (Climate Change Mitigation)

Basic Policy

As an enterprise engaged in iron and steel manufacturing, which emits massive volumes of CO_2, 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. Applying these to steel manufacturing has successfully reduced CO_2 emission intensity to the lowest level worldwide.

Furthermore, 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 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 address climate change issues by deploying the technologies we have fostered across the globe.

The JFE Group's Medium- to Long-term Vision

Aiming to Reduce CO_2 Emissions by 20% or More by FY2030 and To Be Carbon Neutral After 2050

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 this year to be a landmark year to further reinforce our efforts to tackle the issues of climate change, and we are actively promoting initiatives for reducing CO_2 emissions with the targets set up as follows:

■ JFE Group's Target for Reducing CO_2 Emission

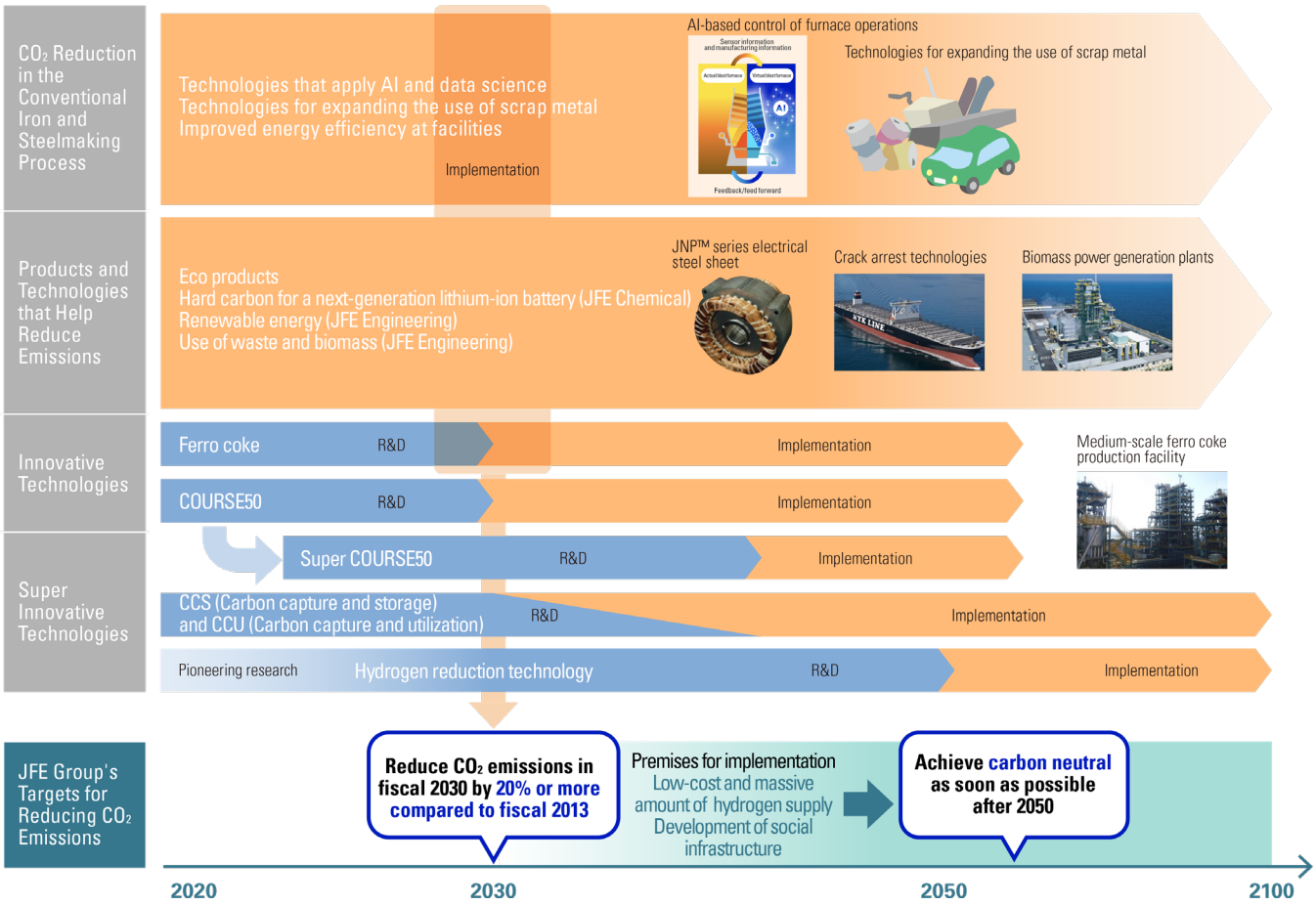
Towards 2030

- In the steel business, which accounts for most of the JFE Group's CO_2 emissions, we are exploring feasible scenarios with the aim of reducing CO_2 emissions in fiscal 2030 by 20% or more compared to fiscal 2013, maximizing the use of the best available technologies and innovations.
- JFE continues to share the Japan Iron and Steel Federation's commitment to a low-carbon society and to play an active role. At the same time, JFE has launched a new project team to reduce our CO_2 emissions as much as possible for an individual company, and will start examining various measures to achieve our targets.

Towards 2050

- In line with the social transformation to establish carbon-free infrastructure over the long term, JFE will strive to be carbon neutral within the JFE Group as soon as possible after 2050.
- JFE is carrying out research and development to be ready to show a lineup of carbon neutral technologies in its business processes well ahead of 2050.

Roadmap for Reducing CO_2 Emissions toward Realizing Carbon Neutral at the JFE Group



Examples of the JFE Group's initiatives for achieving carbon neutral operations are as follows.

CO_2 Reduction in the Conventional Iron and Steelmaking Process

Technologies that apply AI and data science

- Introducing Data Science Technology at All Steelworks Blast Furnaces (P. 47)
- Introducing a Guidance System to Manage Fuels and Electricity Consumptions in Steelworks (P. 48)

Technologies for expanding the use of scrap metal

- Ecological and Economical Arc Furnace (ECOARC™) (https://steelplantech.com/en/product/ecoarc)

Improved energy efficiency at facilities

- Conserving Energy by Reducing Energy Loss from Molten Steel Vessels (P. 49)

Products and Technologies that Help Reduce Emissions

Eco Products

- JNSF Core™ and J-STAR (https://www.jfe-holdings.co.jp/en/csr/pdf/2019/2019_09.pdf)
- Steel Slag Hydrated Matrix (P. 50)
- Use of Granulated Blast Furnace Slag to Reduce CO_2 Emission (P. 51)
- Precast Concrete Products (P. 52)

Hard carbon for next-generation lithium-ion batteries

- Anode Material for All-polymer Battery, a Next-generation Lithium-ion Battery (P. 49)

Renewable Energy

- Promotion of Renewable Energy (P. 58)
- Regional Electricity Retail Businesses in Partnership with the Local Municipal Governments (P. 58)
- JFE-METS (P. 54)

Use of Waste and Biomass

- Waste Incinerator that Uses a Counter Current Combustion Method (P. 58)
- Fully Automatic Operation of Waste Incinerator (P. 55)

Innovative Technologies and Super Innovative Technologies

Ferro coke

- Ferro Coke Demonstration Plant (P. 46)

COURSE50

- COURSE50 (https://www.jisf.or.jp/course50/index_en.html)

CCS (carbon capture and storage) and CCU (carbon capture and utilization)

- Initiatives on CCU and CCS (NEDO Project) (P. 70)

Initiatives by industry groups

- The Japan Iron and Steel Federation “Commitment to a Low Carbon Society” (https://www.jisf.or.jp/en/activity/climate/documents/tekkowg_ppt_en.pdf)
- The Japan Iron and Steel Federation “Challenge Toward Zero-Carbon Steel” (https://www.jisf.or.jp/en/activity/climate/documents/JISFLong-termvisionforclimatechangemitigation.pdf)
- Keidanren (Japan Business Federation) “Challenge Zero” (https://www.challenge-zero.jp/en/)

JFE Group's Response to the TCFD

For more information, please refer to the following information.

➤ JFE Group's Response to the TCFD (P. 74)

Steel Industry Initiatives

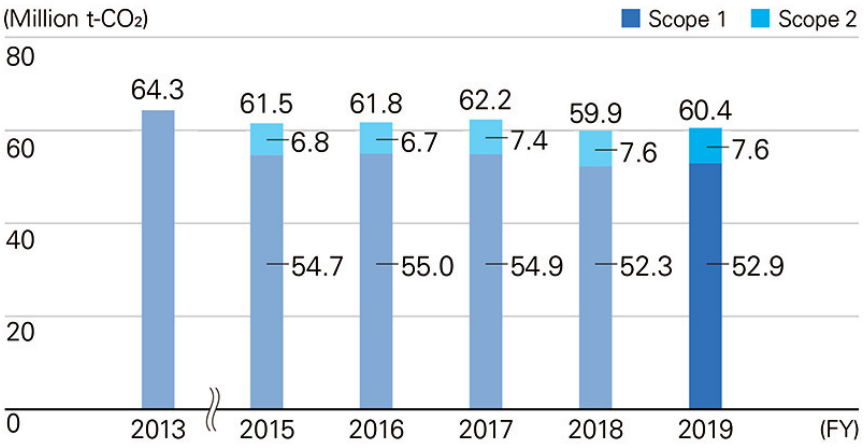
For more information, please refer to the following information.

➤ Steel Industry Initiatives (P. 90)

CO_2 Emissions of the JFE Group

JFE's CO_2 emissions are mainly generated by its steel business. However, beyond reducing CO_2 emissions from steel production process, each company sets specific targets corresponding with their operations to further save energy and reduce CO_2 emissions.

■ 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.

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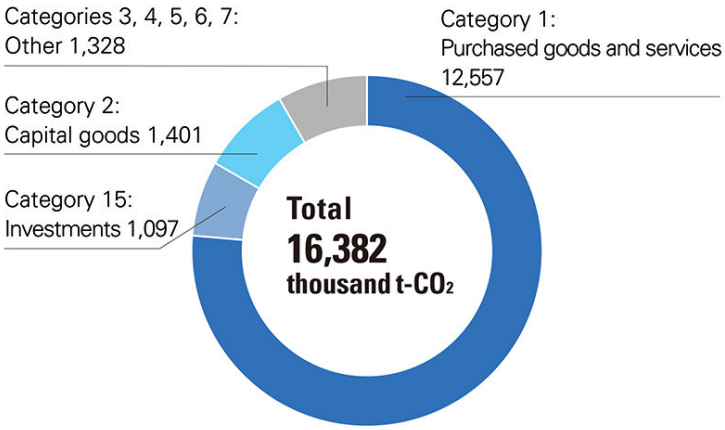
■ Scope 3 Emissions of the JFE Group (FY2019)



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, please refer to the following information.

➤ ESG Data: Environmental Data (P. 165)

Energy Savings and CO_2 Reduction in Iron and Steelmaking

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.

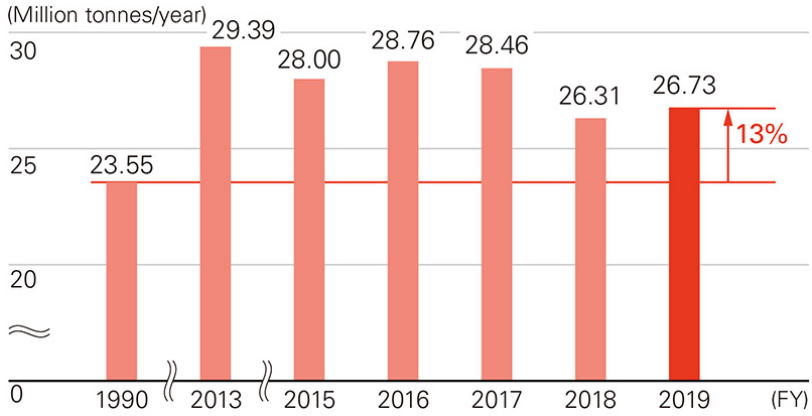
Energy Consumption and CO_2 Emissions in FY2019

Energy consumption and CO_2 emissions in iron and steelmaking are greatly influenced by production volume. To accurately assess the effects of improvements due to operational technologies and capital investments, JFE Steel is working to reduce its intensity (energy consumption and CO_2 emissions per unit of production) and related energy-conservation activities.

JFE Steel's crude steel production was 26.73 million tonnes in FY2019, up 1.6% from FY2018 and up 13% from FY1990. However, thanks to ongoing energy-saving activities, energy consumption was down 8% and CO_2 emissions were down 10% from FY1990.

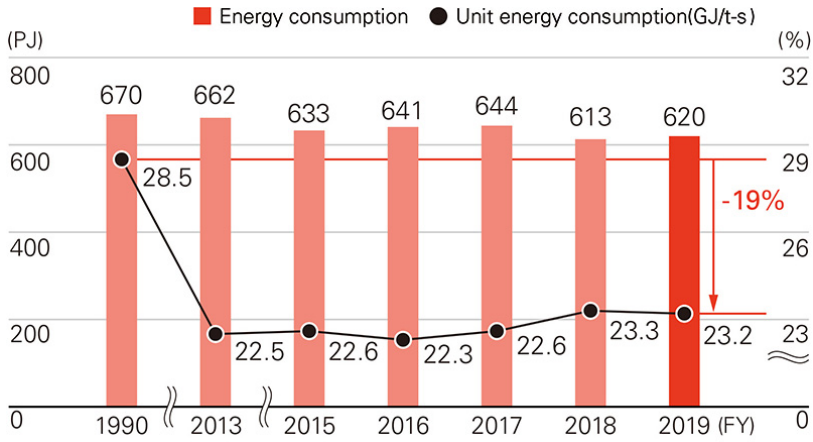
The company's energy consumption intensity in FY2019 was 19% below the FY1990 level at 23.2 GJ/t-steel, while CO_2 emission intensity was down 18% to 2.03 t- CO_2 /t-steel. The results prove the success of JFE Steel's energy-saving activities in recent years, including capital investments in energy conservation and promotion of energy conservation through the visualization of the reheat furnace fuel basic unit.

■ Production of Crude Steel of JFE Steel



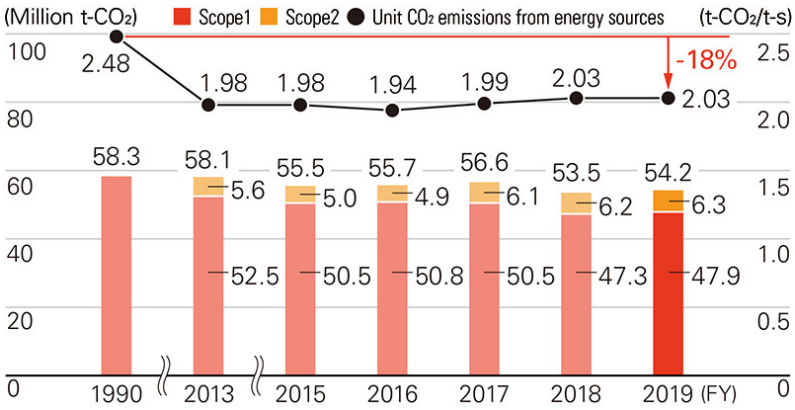
Note: Figures for FY2013 to FY2016 were calculated by adding data for JFE Bars & Shapes Corporation's Sendai Works.

■ Energy Consumption and Unit Energy Consumption of JFE Steel



Notes:
- Data for past fiscal years were retroactively revised for increased accuracy.
- 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 FY2019 are calculated using the CO_2 emission factor for electricity purchased in FY2018, adopted by the Japan Iron and Steel Federation's Commitment to a Low Carbon Society.
- FY2018 data was revised by applying the CO_2 emission factor for electricity purchased in FY2018, 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.

CO_2 Emissions from Non-energy Sources

Lime and dolomite, used as auxiliary materials in blast furnaces and converters, emit CO_2 during decomposition. JFE Steel manages these emissions as CO_2 derived from non-energy sources.

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

➤ ESG Data: Environmental Data (P. 165)

CO_2 Reduction Initiatives

JFE Steel

Initiatives toward CCU/CCS

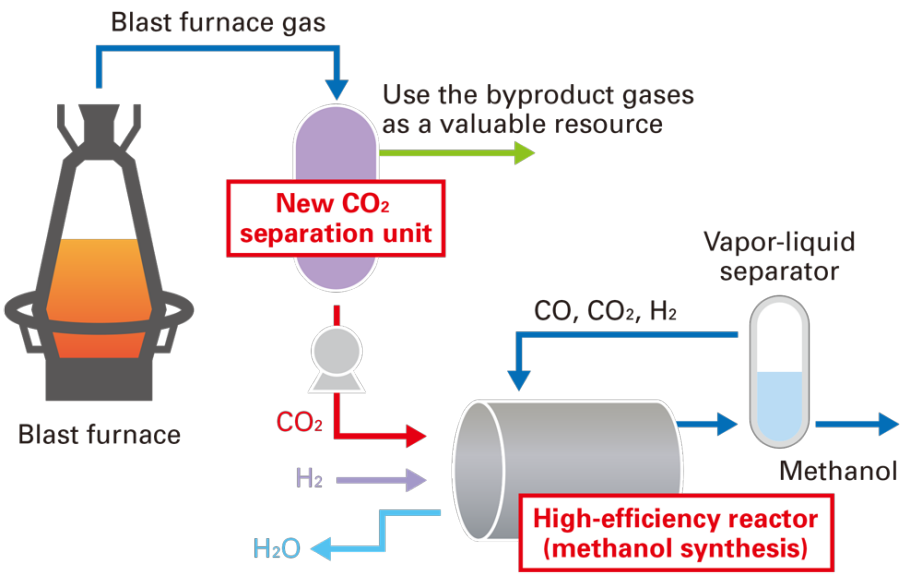
In order to reduce CO_2 emissions from the steel manufacturing process, JFE Steel is actively engaged in the development of new technologies to separate and recover CO_2 from blast furnace gas. This is in line with the JISF's COURSE50 project (CO_2 Ultimate Reduction in Steelmaking Process by Innovative Technology for Cool Earth 50), which focuses on hydrogen reduction of iron ore and separation and recovering of CO_2 from blast furnace gas. JFE Steel has been working on developing for practical use a physical adsorption technology for separating and capturing CO_2, which could then be fed to carbon capture and storage (CCS).

More recently, JFE Steel has also initiated R&D into the effective use of CO_2 separated and recovered from blast furnace gas and is one of the first domestic steel manufacturers to explore this field. JFE Steel is a participating member of NEDO*1 projects such as for the development of next-generation thermal power generation technologies, development of basic technologies for next-generation thermal power generation, and development of CO_2 utilization technology, and it is working on an initiative together with RITE*2 to develop new technologies for separating and recovering CO_2 from blast furnace gas and utilizing it to synthesize methanol (CH_3OH).

In this project, JFE Steel is developing technologies that lower the cost of CO_2 separation and recovery that meets the objectives of CCU and process design for effective use of CO_2. The expertise in CO_2 separation and recovery technologies it has acquired through the COURSE50 project is applied to CCU.

*1 New Energy and Industrial Technology Development Organization
*2 Research Institute of Innovative Technology for the Earth

■ CCU Technology



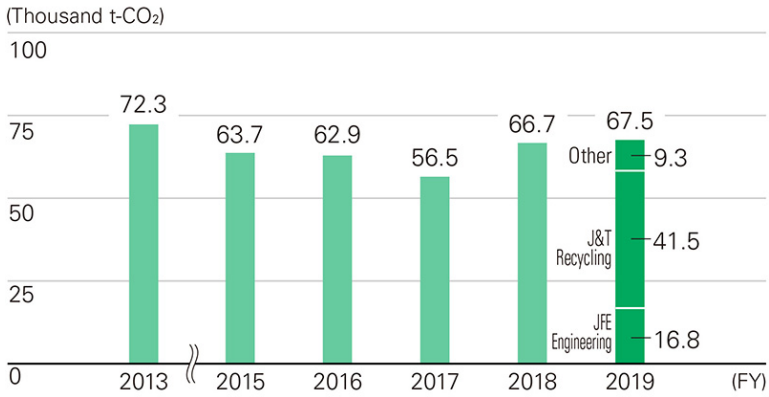
JFE Engineering

JFE Engineering strives to reduce CO_2 emissions in society through its clients and their daily operations by providing them with eco-friendly products and technologies, including those that harness renewable energy and energy-saving products.

For example, if all of the renewable energy-related plants that JFE Engineering has constructed by FY2019, including those currently under construction, were in operation, their estimated contribution* to CO_2 reduction would mount up to 4.13 million tonnes per year. Furthermore, JFE Engineering strives to reduce its own CO_2 emissions in accordance with the Energy Conservation Law, from its head office, branch offices, and works and has been achieving the reduction target set by the Energy Conservation Law every year since FY2015. And JFE Engineering's Yokohama head office was presented with the Yokohama Global Warming Countermeasures Award for FY2019 in recognition of these initiatives. Companies of the group each have their own energy saving initiatives that are appropriate for their businesses to make their contribution in reducing overall CO_2 emissions.

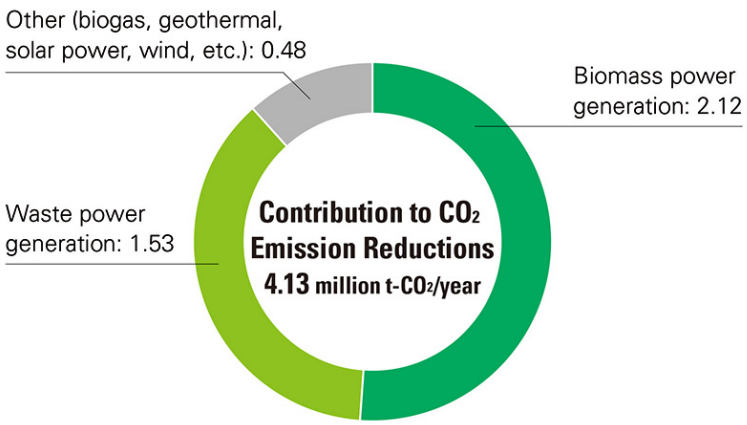
* For renewable energy power generation plants, the characteristics of each plant is taken into consideration while estimating their CO_2 emissions.

■ JFE Engineering Group's CO_2 Emissions from Energy Sources (Thousand t- CO_2)



Data cover CO_2 emissions from energy sources by JFE Engineering and 10 consolidated subsidiaries in Japan.

■Contribution to CO_2 Emission Reductions by Renewable Energy Plants (FY2019)



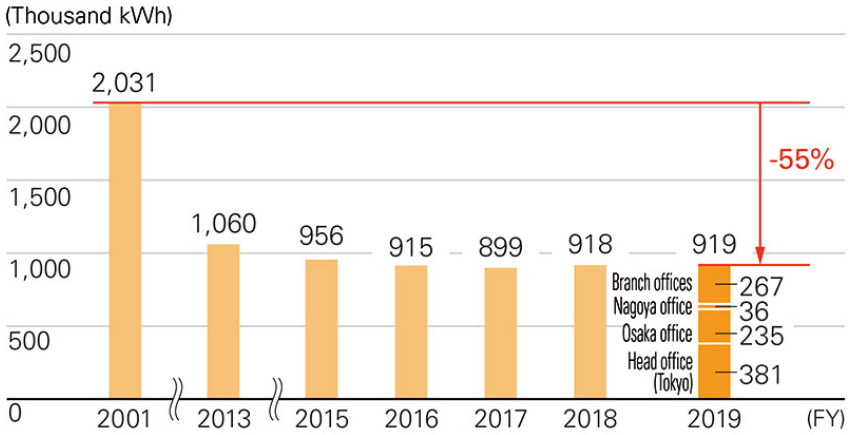
JFE Shoji

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

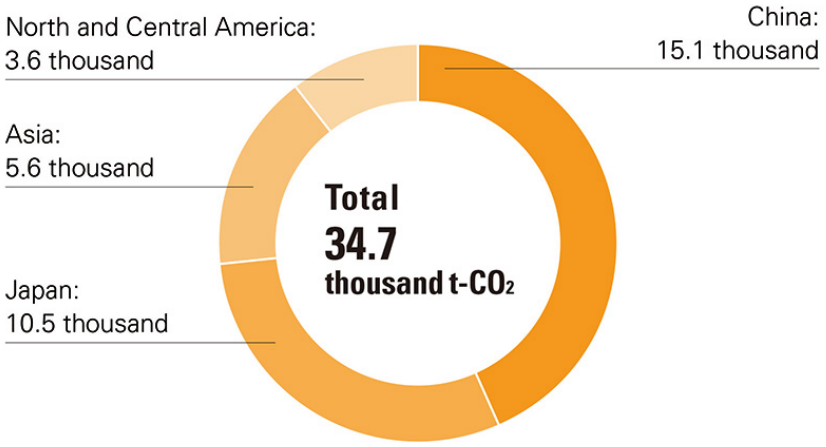
Efforts to cut energy consumption such as leave-on-time days, prohibition of night work, and pinpoint lighting have become firmly rooted. In FY2019, reductions in environmental impact were primarily achieved by improving the working environment through 5S activities, reducing power consumption by replacing computers, and promoting activities to raise operational efficiency by introducing robotic process automation (RPA).

JFE Shoji has also sought to raise awareness of environmental activities by creating a pocket card listing environmental strategies, fiscal year targets, and environmental initiatives related to office and trading activities. The card has been distributed to all employees.

■Electric Power Consumption by JFE Shoji (Thousand kWh)



■ CO_2 Emissions of the JFE Shoji Group (FY2019)



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

Products and Technologies that Reduce CO_2 Emissions

For more information, please refer to the following information.

Development and Provision of Eco-friendly Processes and Products (P. 46)

Related Links

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

JFE Group's Response to the TCFD

The JFE Group leverages its innovative technology to address climate change and is committed to creating a resilient, sustainable society. The Group also seeks to disclose information on how it will address climate change risks and opportunities in accordance with TCFD recommendations, including scenario analysis.

JFE's Initiatives on Climate Change and Future Response

As an enterprise engaged in iron and steel manufacturing, which is associated with emitting massive volumes of CO_2, 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.

The Group will continue to develop and disseminate the technologies for achieving the 2°C target stipulated in the Paris Agreement 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.

For more on this, please refer to the following information.
Addressing Climate Change Issues : ➤ Climate Change (Climate Change Mitigation) (P. 63)
Technologies and Products Related to CO_2 Emissions : ➤ Development and Provision of Eco-friendly Processes and Products (P. 46)

Environmental Movement across the World Surrounding JFE's Business

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
2018 JISF announced the Long-term Vision for Climate Change Mitigation
2020 Keidanren launches the Challenge Zero initiative

The "Challenge Zero (Innovation Challenges Towards 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.

(Continued from the previous page.)

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

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

Disclosure Consistent with 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)*.

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

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

TCFD Recommendations

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, please use the following link.

▶ Guideline Content Indices (P. 210)

Governance

The JFE Group actively strives to exist harmoniously with the global environment as well as to raise living standards and advance societies under the JFE Group Standards of Business Conduct. We are aware that protecting the global environment by 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 process and developing and providing eco-friendly products.

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 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.

■ Examples of climate change-related agendas reported to the Board of Directors for deliberation

- Declaration of endorsement for the final TCFD recommendation report
- Information disclosure consistent with TCFD recommendations (scenario analysis and other information)

For Outside Executive Group Interview on the status of supervision by the Board of Directors over the governance system and ESG challenges for the whole Group, please refer to the following information.

- Corporate Governance System (P. 149)
- Framework for Environmental Management (P. 39)
- JFE Group Report 2020 "Outside executives share perspectives on ESG as the foundation of value creation for the JFE Group"
  (https://www.jfe-holdings.co.jp/en/investor/library/group-report/2020/pdf/9.pdf)

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 Environmental Committee and other organs of each Group company. The JFE Group Environmental Committee collects information on risks and strengthens controls to reduce the frequency and impact of the risks and maximize opportunities.

Countermeasures Based on Monitoring

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

For more on our risk management system, please refer to the following information.

- Risk Management (P. 161)

Strategies

Risks and opportunities associated with climate change issues are integrated into the Group's business strategies as follows. We formulated the JFE Group Sixth Medium-term Business Plan as our business management policy for FY2018 to FY2020. As part of our plan to strengthen the business structure for sustainable growth, we have placed high priority on contributing to the establishment of a sustainable society. Our efforts to address climate change issues have been incorporated into our business strategy by pursuing what we term as "ongoing ESG initiatives" as a key measure. We select important factors that may affect business to identify and evaluate risks and opportunities by advancing information disclosure in line with the TCFD recommendations, including scenario analysis.

The JFE Group gives high priority to protecting the global environment and has a strategy in place for reducing environmental impact by developing eco-friendly products and process technologies and providing material recycling solutions, in addition to reducing CO_2 emissions in the steelmaking process and recycling water resources and energy. Furthermore, the JFE Group expresses its views on public policies concerning climate change issues and environmental protection through the Japan Iron and Steel Federation and actively participates in related activities.

Scenario Analysis

Setting the Scenario

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.

Selected Scenario		2°C Scenario	4°C Scenario
Reference Scenario	Transition Risks	Transition scenarios developed by the IEA • Sustainable Development Scenario (SDS)*1 • 2°C Scenario (2DS)*2	Transition scenarios developed by the IEA • New Polices Scenario (NPS)*1 • Reference Technology Scenario (RTS)*2
	Physical Risks	Climate change projection scenario developed by the Intergovernmental Panel on Climate Change (IPCC) Representative Concentration Pathways (RCP) Scenario*3	
How Society will Look		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	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

*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 is 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

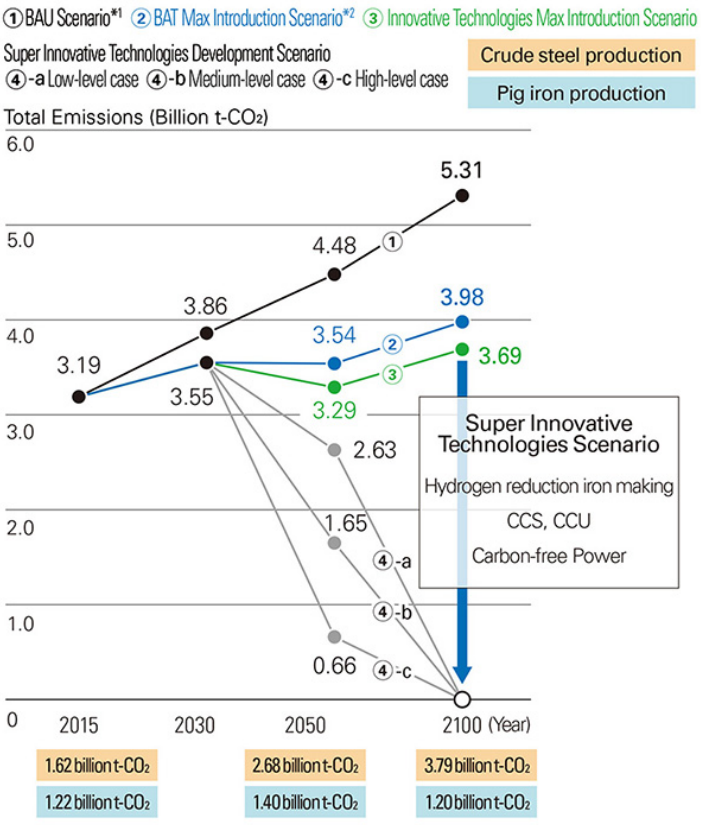
This analysis covers the following businesses: the steel business by JFE Steel, the engineering business by JFE Engineering, the trading business by JFE Shoji, and businesses carried out by some of the other Group companies. The period covered is up to 2050.

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, JISF also formulated and published the Long-term Vision for Climate Change Mitigation for 2030 and beyond. JFE Steel was a core member when the long-term vision was formulated.

While JISF's Long-term Vision for Climate Change Mitigation represents the industry's challenge toward realizing zero-carbon steel with an eye on 2100, our scenario analysis is intended to ensure resiliency in our Group's business strategy at the mid-point of the long-term challenge.

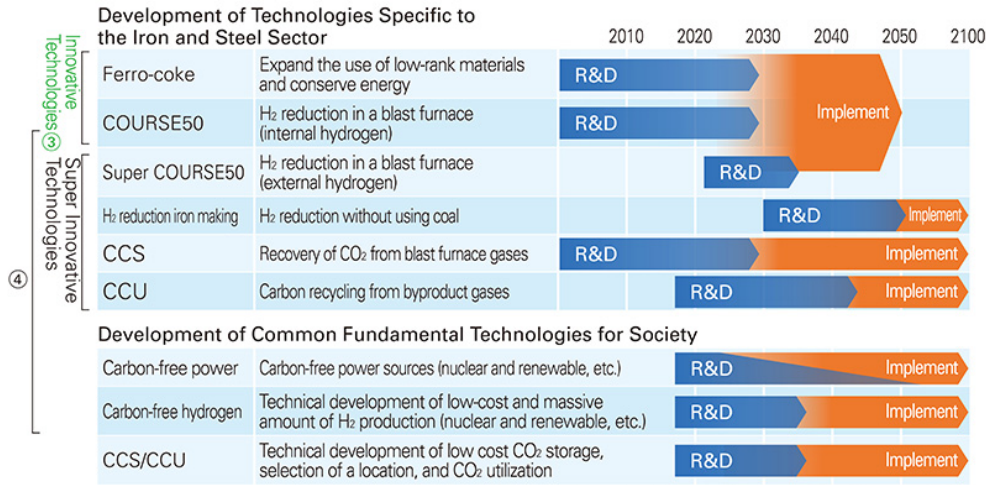
■ CO_2 Emissions Based on Long-term Scenarios for Climate Change Mitigation



Source: Compiled from data provided by the JISF.

*1 BAU Scenario: A scenario based on the idea of "business as usual"
*2 BAT Max Introduction Scenario: A scenario based on maximum introduction of the best available technology

■ Initiatives to Achieve the Long-term Vision for Climate Change Mitigation



Source: Compiled from data provided by the JISF.

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. 6))

Step 2: Examine all factors from a holistic perspective and identify key factors by taking into consideration 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 promote 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

	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
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
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

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.

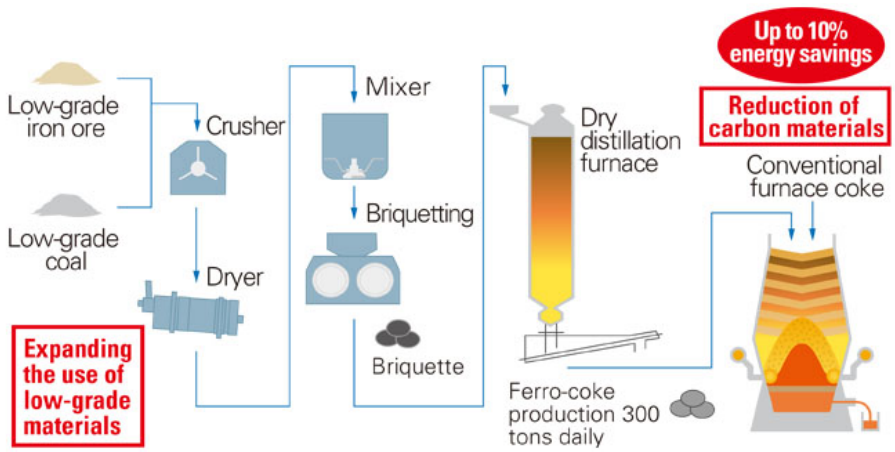
JFE Steel has been committed to developing energy-saving technologies toward increasing the efficiency of the iron and steelmaking process and decarbonization. These initiatives have helped JFE Steel acquire technologies that realize the world's top energy efficiency in iron and steelmaking. To further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

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 iron making 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 will begin in FY2020 toward commercialization.

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



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

Uniform carbon pricing is being discussed or introduced around the world. If it 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 would have a major impact on the JFE Group and particularly on its steel business, which may lead to the loss of its cost competitiveness. For this reason, we must remain vigilant to future developments.

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

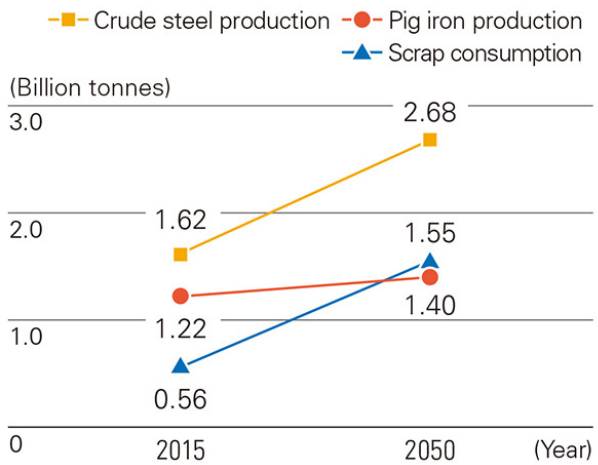
While the use of steel scrap increases, demand for crude steel will also rise over the long-term. This will result in an increase for pig iron production by blast furnace (converter steel). Furthermore, the entire JFE Group will benefit from opportunities arising from the expanded use of electric furnaces, and it will utilize the construction technology of electric furnaces while expanding the scrap logistics business.

Steel scrap, a raw material for electric furnace steel, is used efficiently, as it is almost completely recovered in the steel value chain. For society, which expects the realization of the under 2°C scenario, steel is utilized as a basic material that will help achieve the SDGs. Steel accumulation will increase as well as the amount of scrap used. Global steel demand is expected to grow alongside the overall growth in the population and economy, and production of pig iron (converter furnace steel) is also expected to rise to support the development of a sustainable society (JISF: Long-term Vision for Climate Change Mitigation). In addition, under the current technology, the quantity of high-grade steel materials is only feasible using converter furnace steel. This steel and electric furnace steel will co-exist and be used in applicable places.

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

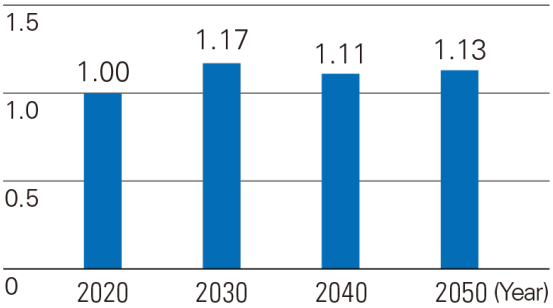
Demand for electrical steel sheets for EV motors as well as special steel is increasing as global car sales rise. The increase in the intensity of high tensile strength automotive steel sheets contributes to further weight reductions.

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.

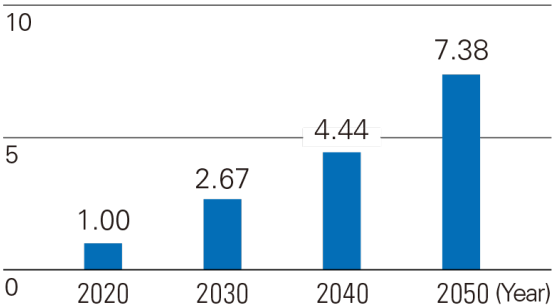
On the other hand, it has been pointed out that an increase in EVs may lead to a decline in the amount of special steel used in engine components. The amount of this type of steel, used in hybrid vehicles and electric vehicles, is 80% and 60% of gasoline cars, respectively. We believe that the risk level 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 and thus dramatically reduce 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)

Estimated by JFE Holdings based on reports by Strategic Commission for the New Era of Automobiles (METI)

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.

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.

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 plants, and energy-saving steel technologies

"Renewable Energy Power Generation"

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, and solar power*3 generation plants in its engineering domain.

We are also working on increasing power output at waste processing facilities from the perspective of resource recycling and the effective utilization of resources. JFE Engineering is striving to develop a fully automated operation*4 to facilitate higher power output at incinerators.

Moreover, we are utilizing renewable energy as the main power source for our retail electricity business *5 and in helping to establish and operate regional electricity retail companies*6 focused on local production and consumption of electricity based on renewable energy.

Biomass power generation plants

Waste-to-energy power generation plant

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

(Continued from the previous page.)

- *4 The JFE Engineering Corporation's Website: Operation & maintenance
  (https://www.jfe-eng.co.jp/en/products/environment/ope03.html)
- *5 The Urban Energy Corporation's Website: Electricity retail business (Japanese only)
  (https://u-energy.jp/service/retail.html)
- *6 The Urban Energy Corporation's Website: Regional electric power support business (targeting local governments) (Japanese only) (https://u-energy.jp/service/municipality.html)

"Multisite Energy Total Service"
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 Website: JFE-METS (Japanese only)
  (https://www.jfe-eng.co.jp/news/2019/PDF/20200130.pdf)

"Recycling Plants"
We are working on reducing the additional use of materials derived from fossil fuels by using recycled materials in the production of plastic products. 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 Website: Recycling
  (https://www.jfe-eng.co.jp/en/products/recycle/rec01.html)
- *2 The J&T Recycling Corporation's Website: Recycling
  (https://www.jt-kankyo.co.jp/en/business/products/)

"Energy-saving Steel Technologies"
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, 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 2030 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

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.

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.

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 a high-strength H-shaped steel, high-strength steel pipe pile, and hybrid tide embankments.

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 a 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 steel slit dams, in addition to reconstructing infrastructure.

(Continued from the previous page.)

Hybrid tide embankments

Steel slit dams

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

Risk Management

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, collects specific information for the purpose of reducing 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 relevant committee confirms and evaluates risks and discusses and makes decisions on countermeasures.

The Board of Directors supervises initiatives on ESG risks such as those related to climate change and CSR by receiving reports and deliberating over key issues.

Climate-related risks are identified and evaluated based on a scenario analysis conducted under the framework recommended by the TCFD. Important factors that may affect management are selected for further analysis and used in formulating business strategies for the future.

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

CSR structure including ESG risk management： ➤ CSR Structure (P. 29)
Enterprise risk management： ➤ Risk Management (P. 161)
Environmental management including climate change issues： ➤ Environmental Management (P. 39)

Metrics and Targets

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.

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 this year to be a landmark year to further reinforce our efforts to tackle the issues of climate change, and we are actively promoting initiatives for reducing CO_2 emissions with the targets set up as follows:

■ JFE Group's Target for Reducing CO_2 Emissions

Towards 2030

- In the steel business, which accounts for most of the JFE Group's CO_2 emissions, we are exploring feasible scenarios with the aim of reducing CO_2 emissions in fiscal 2030 by 20% or more compared to fiscal 2013, maximizing the use of the best available technologies and innovations.
- JFE continues to share the Japan Iron and Steel Federation's commitment to a low-carbon society and to play an active role. At the same time, JFE has launched a new project team to reduce our CO_2 emissions as much as possible for an individual company, and will start examining various measures to achieve our targets.

Toward 2050

- In line with the social transformation to establish carbon-free infrastructure over the long term, JFE will strive to be carbon neutral within the JFE Group as soon as possible after 2050.
- JFE is carrying out research and development to be ready to show a lineup of carbon neutral technologies in its business processes well ahead of 2050.

For more on this, please refer to the following information.
Commitment to a Low Carbon Society： ➤ Steel Industry Initiatives (P. 90)
Targets and Results Related to Climate Change： ➤ Material CSR Issues (P. 22)
Initiatives on Climate Change： ➤ Climate Change (Climate Change Mitigation) (P. 63)

Addressing Climate Change Issues

The JFE Group considers addressing climate change issues as an extremely important managerial challenge. We respond to risks and opportunities to enable sustainable growth and disclose information about our related actions.

Addressing climate change issues is an extremely important managerial challenge for the JFE Group, not only from the perspective of business risks but also in terms of opportunities to contribute to the realization of a sustainable society.

The TCFD's final recommendations, published in 2017, encourage companies to disclose their resilience strategies for responding to climate change issues through scenario analysis. The JFE Group announced its endorsement of the recommendations in May 2019, and the CSR Report 2019 was our first disclosures in line with TCFD recommendations. The report provides information on our risk management for the 2°C and 4°C scenarios in addition to our commitment to addressing issues through the development of an innovative iron and steelmaking process, eco-friendly products and technologies, and efforts for strengthening national resilience. We regard this year to be a landmark year to further reinforce our efforts to tackle the issues of climate change, and intend to advance into a new stage.

In the steel business, which accounts for most of the JFE Group's CO_2 emissions, we are exploring feasible scenarios with the aim of reducing CO_2 emissions in fiscal 2030 by 20% or more compared to fiscal 2013. We will also pursue diverse initiatives to strive to be carbon neutral within the JFE Group as soon as possible after 2050.

In addition, we will continue enhancing our scenario analysis to evaluate the impact on our business strategy and use the results in formulating future strategies while actively engaging in the necessary initiatives. We hope this information will be noted by many investors and other stakeholders and encourage dialogues for deepening understanding of the measures that the Group is taking.

Hiroyuki Fujiwara
Senior Vice President of
JFE Holdings, Inc.

Steel Industry Initiatives

The Japan Iron and Steel Federation (JISF) Initiatives

Long-term Vision for Climate Change Mitigation

In addition to ongoing efforts to achieve the Commitment to a Low Carbon Society, JISF has formulated and announced the 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.

Mid-term (－2030) Initiatives	• Promotion and expansion of The Three Ecos Initiatives. • Development and implementation of innovative new iron and steelmaking processes.
Long-term (－2050) Initiatives	• Promotion of innovative new iron and steelmaking processes. • Development of super innovative iron and steelmaking processes and CCS/CCU technologies.
Final (－2100) Vision	• Realization of zero-carbon steel. • Implementation of super innovative iron and steelmaking processes.

The Commitment to a Low Carbon Society

The Japan Iron and Steel Federation (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

(Continued from the previous page.)

Three Ecos		Eco Processes	Eco Products	Eco Solutions
Targets	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 FY2018 year-end		Reduced 2.21 million t-CO_2 emissions (energy conservation etc.), compared to the BAU benchmark	Domestic and international use contributed to a CO_2 reduction of 31.06 million t-CO_2	CO_2 reduction impact of 65.53 million t-CO_2

Source: Public data from the Japan Iron and Steel Federation (JISF)

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

In FY2018 emissions by the Japanese steel industry decreased by 2.21 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

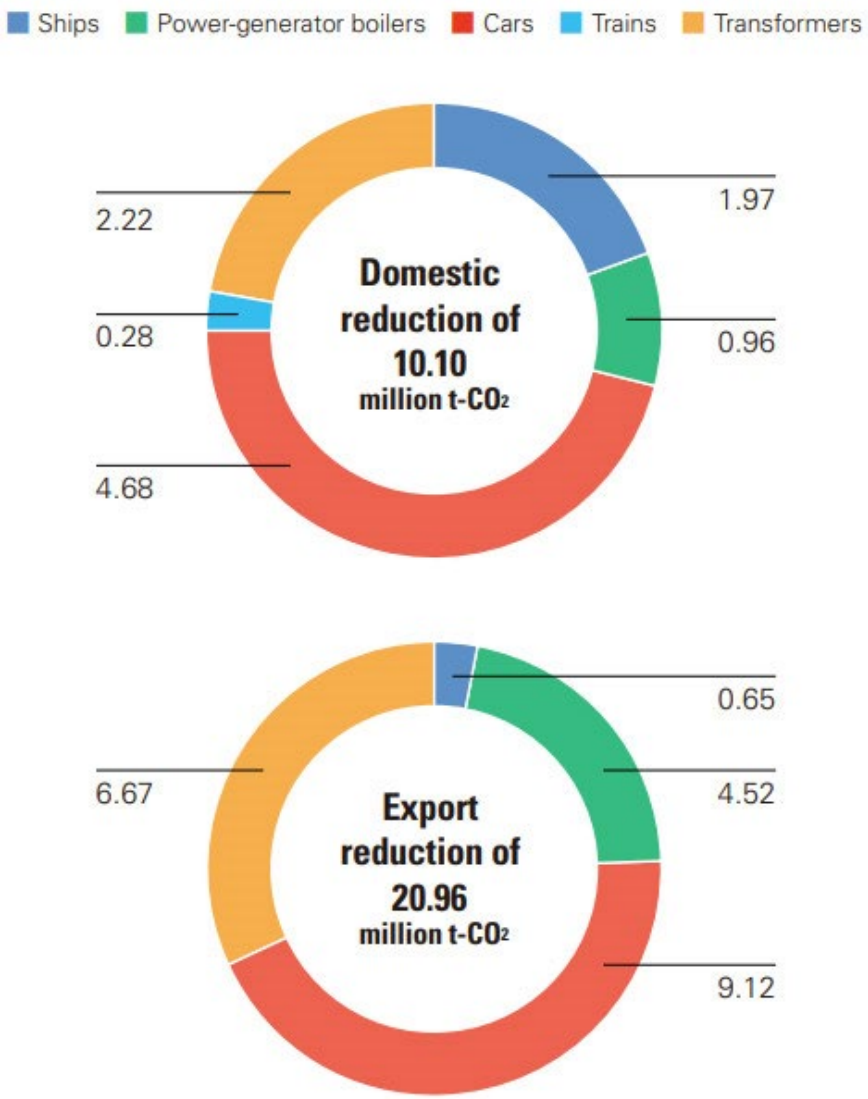
The Japanese steel industry intends to develop ferro coke that accelerates and lowers the temperatures of the reduction reaction in a blast furnace as well as its operational processes to conserve energy further and expand the use of low-rank materials. Currently, a medium-scale plant capable of producing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

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 (FY2018 production: 6.97 million tonnes, 6.8% of crude steel production) helped to reduce CO_2 emissions by 31.06 million tonnes (10.10 million tonnes in Japan, 20.96 million tonnes overseas) in FY2018.

- 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 Highperformance Steel Materials in Japan and Abroad (FY2018)



Global Scale Initiatives

Addressing Global Warming

ISO 14404 is an international standard proposed by the Japan Iron and Steel Foundation (JISF) to the International Organization for Standardization (ISO) as a methodology for the globally unified calculation of 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 that 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.

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.

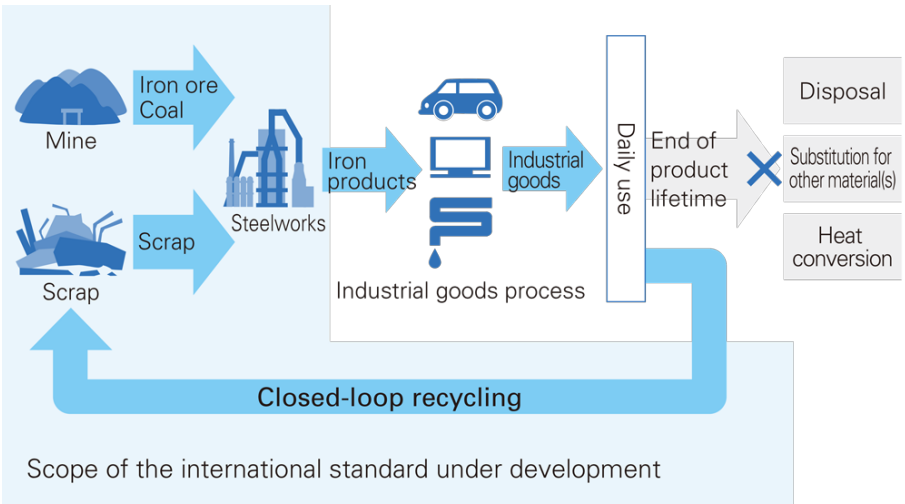
(Continued from the previous page.)

The standard for appropriately considering this ability of steel products to undergo closed-loop recycling was published in November 2018. ISO 20915 (life cycle inventory calculation methodology for steel products) was developed by The Japan Iron and Steel Foundation (JISF) with JFE Steel playing a major role, and provides a life cycle inventory (LCI) calculation method specific to steel products that takes into account the effects of recycling.

In addition, the Japan domestic version of this standard, JIS Q 20915 (life cycle inventory calculation methodology for steel products), was published in June 2019.

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

■ Life Cycle of Steel Materials



Related Links

- The Japan Iron and Steel Federation (JISF) website:Climate Change Policy page
  (https://www.jisf.or.jp/en/activity/climate/index.html)
- The Japan Iron and Steel Federation (JISF) website:LCA of Steel Products page
  (https://www.jisf.or.jp/en/activity/lca/index.html)
- The Japan Iron and Steel Federation (JISF) website:Publication of ISO 20915
  (https://www.jisf.or.jp/en/activity/lca/iso/index.html)
- The Japan Iron and Steel Federation (JISF) website:Publication of 2JIS Q 20915
  (https://www.jisf.or.jp/en/activity/lca/iso/index.html)

Prevention of Pollution (Protecting the Global Atmosphere and Water)

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.

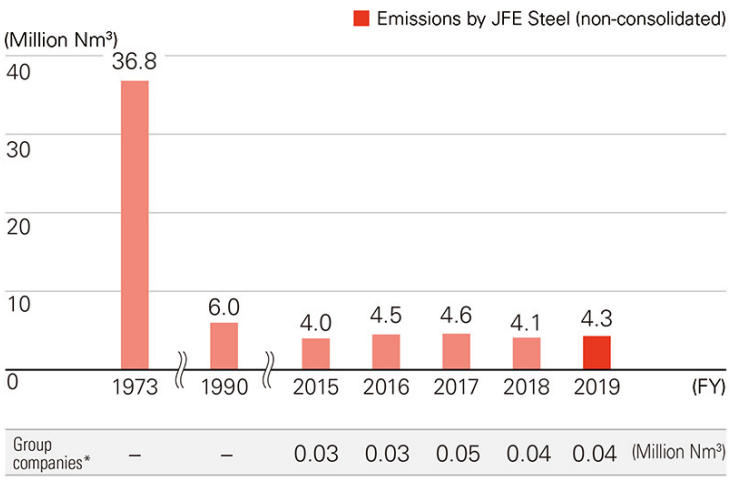
Controlling Air Emissions

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 denitration devices 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.

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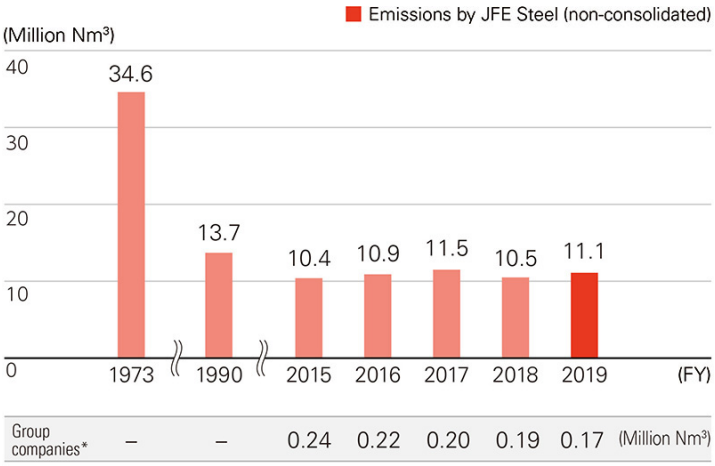
■ NOx Emissions



* 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 FY2019, chemical oxygen demand (COD), the water-quality index for wastewater, was 3.2 tonnes per day.

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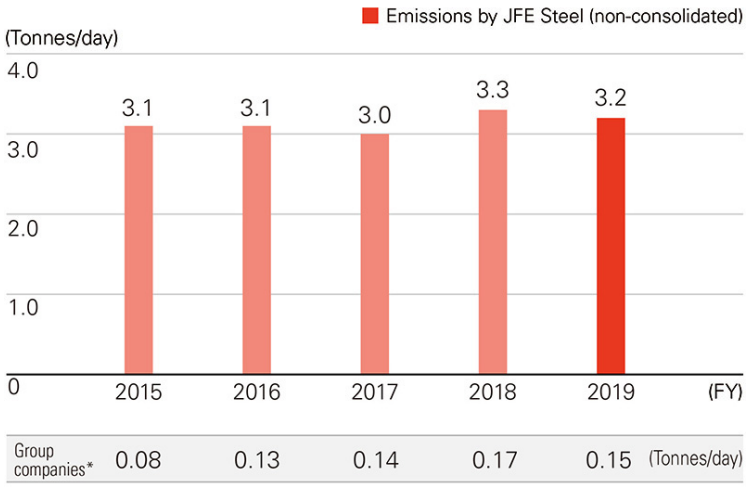
■ Chemical Oxygen Demand (COD)

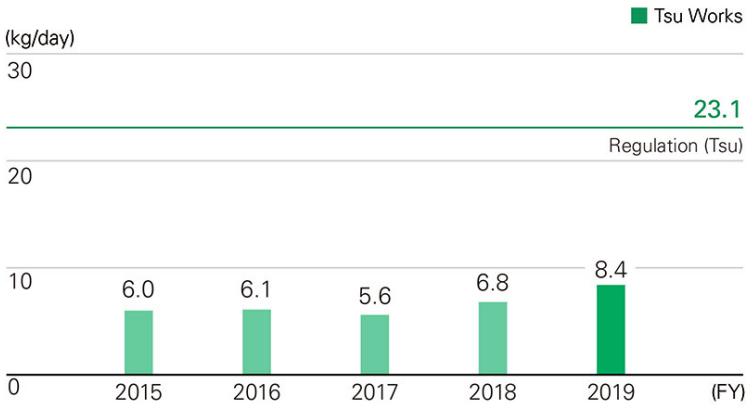


* 12 JFE Steel consolidated subsidiaries in Japan.

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.

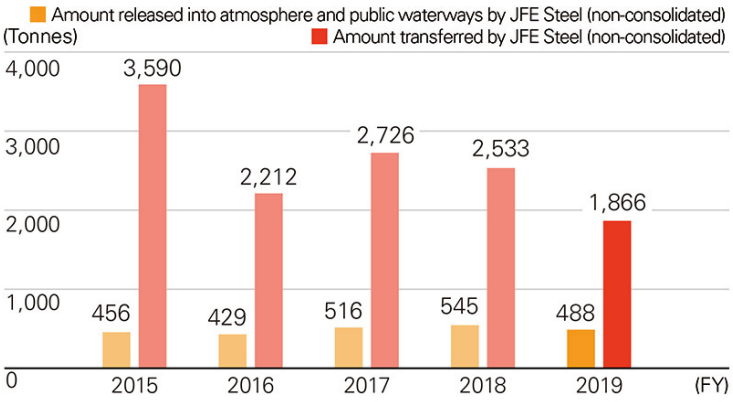
Management of Chemical Substances and Emission Control

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 FY2019, chemical substances released into the atmosphere and public waterways totaled 488 tonnes.

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.

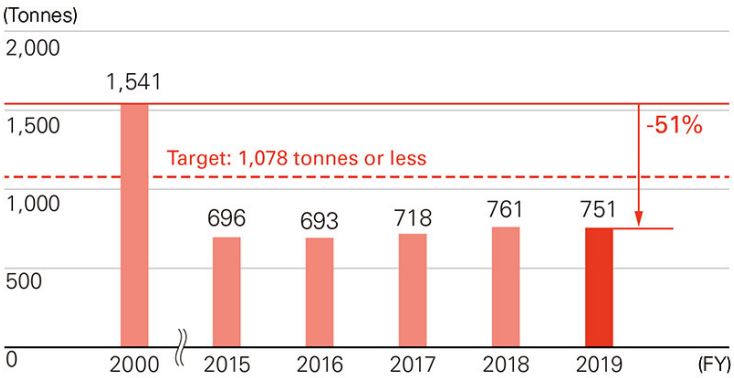
■ Release and Transfer Amounts of PRTR-registered Substances at JFE Steel



Group companies*		2015	2016	2017	2018	2019	
	Amount released	386	413	381	269	285	(tonnes)
	Amount transferred	5,048	4,835	6,208	6,643	5,967	(tonnes)

* 18 JFE Steel consolidated subsidiaries in Japan.

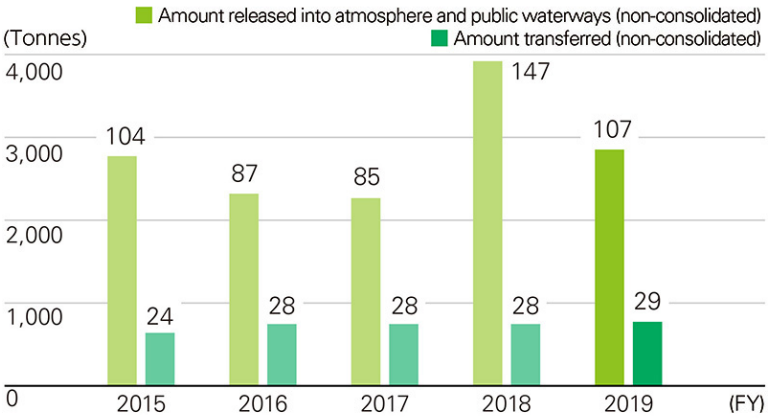
■ VOC Emissions



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



		2015	2016	2017	2018	2019	
Group companies*	Amount released	–	–	–	58.4	45.4	(tonnes)
	Amount transferred	–	–	–	5.7	5.4	(tonnes)

* 4 JFE Engineering consolidated subsidiaries in Japan.

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

➤ ESG Data: Environmental Data (P. 165)

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. 46)

Efficient Use of Resources (Resource Recycling)

Basic Policy

Economic growth in emerging countries is intensifying the need to conserve nonrenewable 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

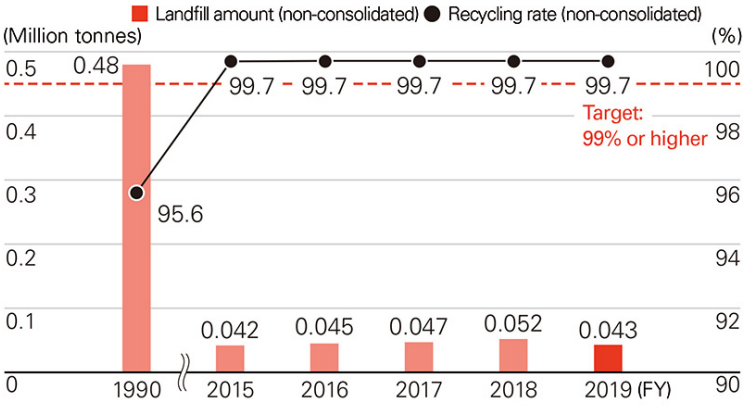
Each operating company of the JFE Group carries out resource recycling suited to its particular business. We continue to pursue increasingly efficient uses of resources in both the production and product/service phases of its businesses, including steel scrap recycling, biomass fuel production and waste-to-energy 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 (coproduct), 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 FY2019, consistently maintaining the target of 99% or higher.

■Landfill of Co-products and Recycling Rates



		1990	2015	2016	2017	2018	2019 (FY)	
Group companies*	Amount released	–	0.771	0.776	0.539	0.792	0.546	(Million tonnes)
	Amount transferred	–	–	0.042	0.034	0.029	0.031	(Million tonnes)

* 25 JFE Steel consolidated subsidiaries in Japan.

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

▶ ESG Data: Environmental Data (P. 165)

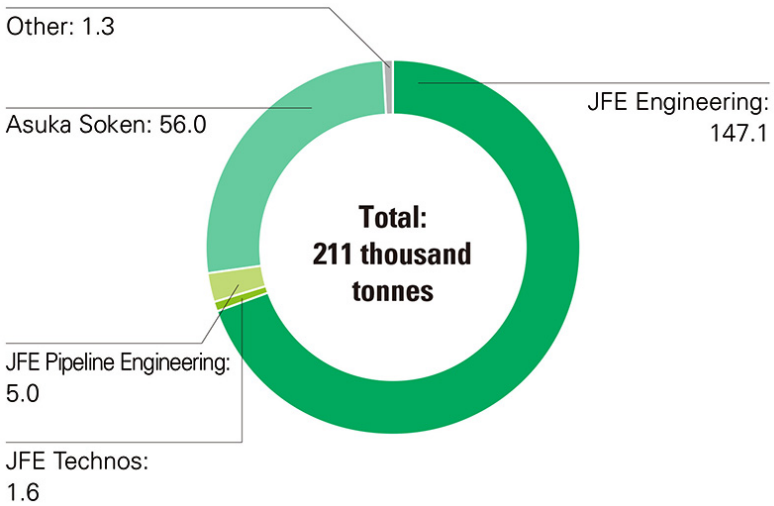
Promoting Recycling

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.

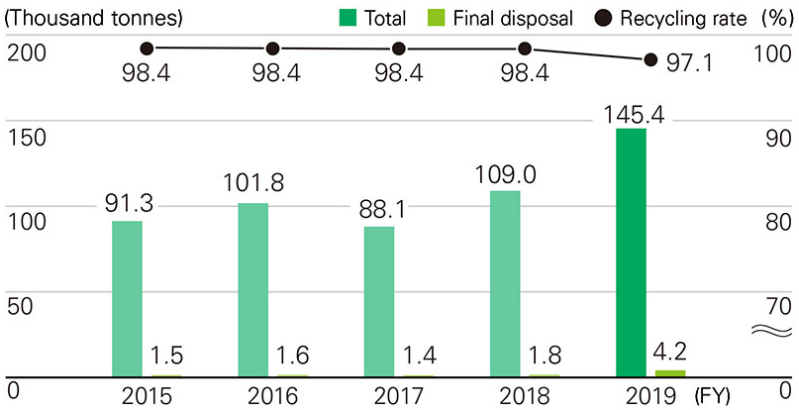
The City of Yokohama has named JFE Engineering's Yokohama head office as a Workplace with Excellent 3R Activities every year since FY2012 to recognize its waste reduction, reuse, and recycling activities. The JFE Engineering Group is also working to realize a recycling-oriented society through its PET bottle and food waste recycling initiatives.

■ JFE Engineering Group Waste Disposal for FY2019



Data cover JFE Engineering and 10 consolidated subsidiareis in Japan.

■ Waste Generated at Construction Sites



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

ESG Data: Environmental Data (P. 165)

Products and Technologies (Resource Recycling)

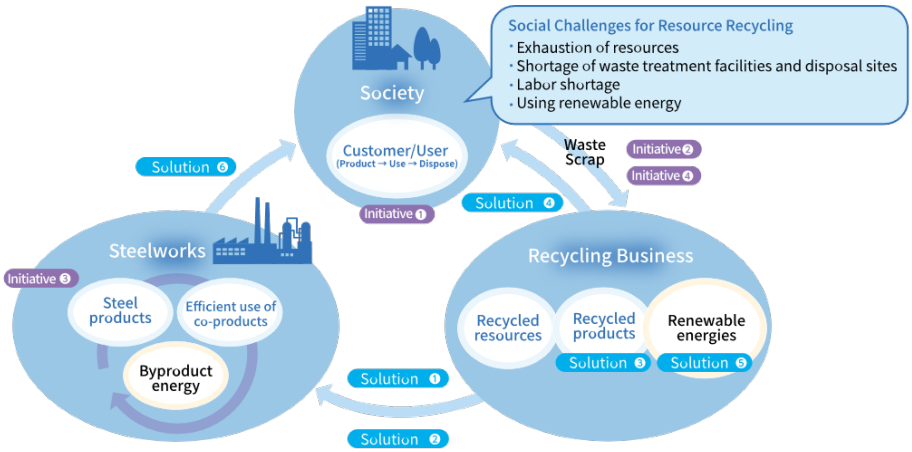
For more on this, please refer to the following information.

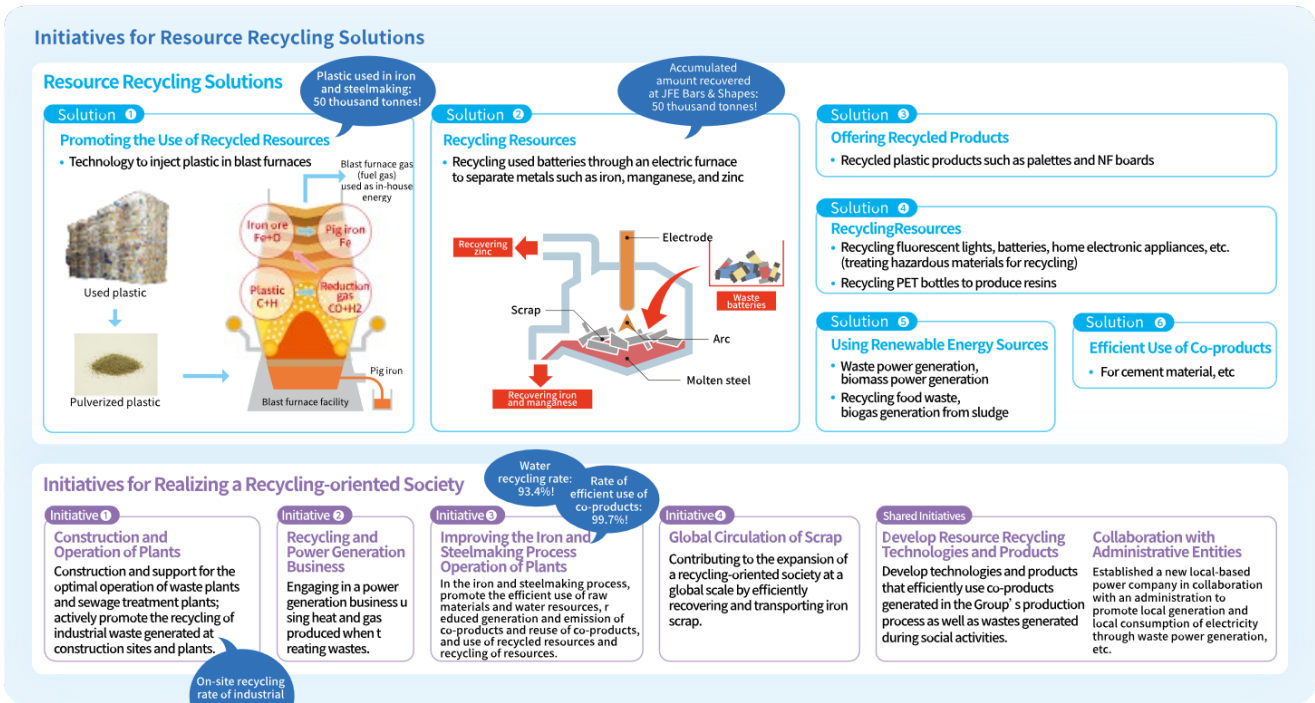
Development and Provision of Eco-friendly Processes and Products (P. 46)

Resource Recycling Solutions

The JFE Group is involved in establishing a recycling oriented 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.





Water Security (Conservation of Water Resources)

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. While Japan has not been designated as a water-scarce region by the WRI, there are risks of water shortages and flooding associated with climate conditions. JFE Steel identifies steelworks having risks that are affected by climate change and mitigates their risks by creating a BCP.

Efficient Use of Water Resources

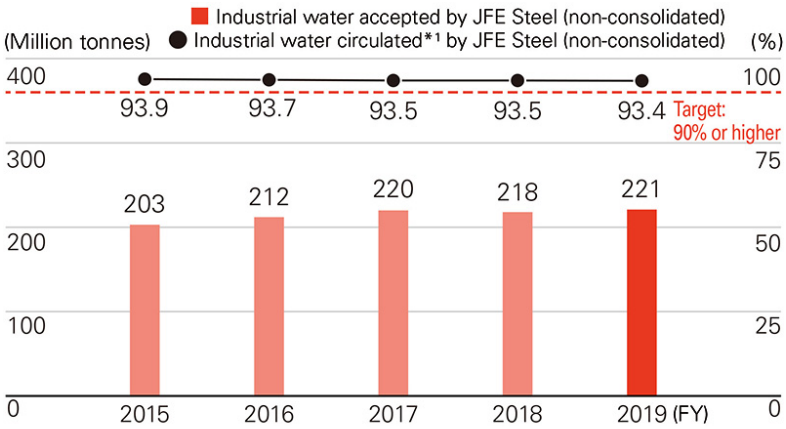
The JFE Group uses large quantities of fresh water for cooling and cleansing products and facilities during the process of steel manufacturing, which is its core business. Therefore, it is important to efficiently use water resources with due consideration to the source of water and stakeholders in the area. To address this, we have established a system for reducing water intake by maximizing the use recycled water at our steelworks, and we manage the system by setting high 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 FY2019 maintained a high level of 93.4%.

■ Industrial Water Accepted/Circulated



•JFE Steel

Total amount	3,326	3,340	3,410	3,376	3,323	(Million tonnes)
Industrial water accepted	203	212	220	218	221	(Million tonnes)

•Group companies*2

Total amount	–	339	280	289	293	(Million tonnes)
Industrial water accepted	25	26	21	20	20	(Million tonnes)

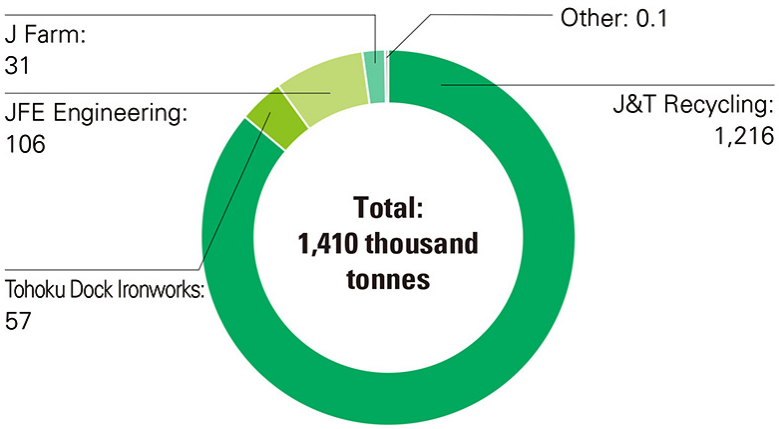
*1 Industrial water circulated (%) = (Total amount used − industrial water accepted)/total amount used × 100
*2 25 JFE Steel consolidated subsidiaries in Japan.

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 FY2019



Data cover JFE Engineering and 7 consolidated subsidiaries in Japan.

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

➤ ESG Data: Environmental Data (P. 165)

Biodiversity (Initiatives to Preserve Biodiversity)

Basic Policy

The JFE Group recognizes biodiversity preservation as a key challenge and conducts assessments to minimize the ecological impact from business activity. Our initiatives include cooperating with the community to monitor biodiversity and carry out preservation activities in order to minimize ecological impact around the steelworks, as key facilities for our business, and in surrounding areas. It also involves 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

We conducted an environmental prediction and evaluation for the renovation of an aging facility, Plant No. 1 in the JFE Ohgishima Thermal Power Plant, 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 Red List 2017 as an endangered species, 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.

Kugenuma orchid

Firefly Festival

JFE Steel has opened its Environment Pond at the Chita Works to the community for a firefly festival every year since 2014. Children at the event have the opportunity to release fireflies.


Participants observing fireflies

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.

In an example of how JFE Engineering has responded to such requirements, the company proposed a construction method that minimizes the impact of noise or drainage pollution on biodiversity. We respect the proposed conditions and thoughtfully consider biodiversity preservation by keeping the impact of construction works at a minimum. The condition of biodiversity in areas surrounding the steelworks or its premises are checked, and necessary measures are taken to ensure preservation.

Biotope for the Children's Learning Experience

Since 2009, JFE Engineering has been inviting children in the community to learn about the ecosystem at a biotope, Dragonfly Pond, along the JFE Dragonfly Path in the Tsurumi Works.

In 2019, 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, an organization dedicated to dragonflies, composed of members from businesses, residents, administrations, and professionals, is conducting a habitat study to help improve the quality of a green space along the Keihin coastal areas as well as to support biodiversity. The organization captures dragonflies that gather around the biotope and tags them for follow-up surveys.

JFE 21st Century Foundation

The JFE 21st Century Foundation has been cosponsoring the dragonfly organization as part of its activities to support cultural development in FY2019.

For more on social-contribution activities related to JFE 21st Century Foundation, please refer to the following information.

Community: JFE 21st Century Foundation (P. 143)

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.

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. 46)

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 realtime 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 Leihin District

Disclosure and Exchange of Information

“ecobeing” Environmental Website

The JFE Group cooperates with the “ecobeing” environmental website, which helps to broaden awareness of eco-activities. One of the tabs on the website called “ecopeople” contains a series of articles featuring persons from different fields.
Please see the following for further details.

- “ecobeing” (Japanese only) (http://www.ecobeing.net/)

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) (http://www.midorinokomichi.net/)

Participating in the Environmental Exhibition EcoPro 2019 and the Tokyo Bay Thanks Giving Day

The JFE Group exhibited its environmentally friendly products and technologies at EcoPro 2019, Japan's largest environmental exhibition, in December 2019. The booth's theme was "JFE Technologies for a Sustainable Society – Produce → Use → Recycle." In addition, we supported Green Cross Japan by running tours for children, called the EcoPro EcoKids Tour.

And we showcased our efforts to revive marine environments using steel slags and our contribution to preserving biodiversity during Tokyo Bay Thanks Giving Day 2019, an event aimed at reviving the marine flora and fauna around Tokyo Bay and held in October.

Many children stopped by the JFE Group's exhibition booth at EcoPro 2019.

Children were amazed by the overwhelming audiovisuals of the domed theater.

Coral and tropical fish around Marine Block™ (iron and steelmaking slag) attracts visitors every year.

The JFE booth for Tokyo Bay Thanks Giving Day was popular with families.

Customer Responsibility (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 various testing components, including reporting.

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

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 so that the customer can be directly assured of its quality with their own eyes.

(Continued from the previous page.)

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

To further strengthen its quality assurance system, JFE Engineering is raising employee awareness through training while also seeking to prevent omissions in inspection data and data tampering by introducing an electronic document processing system into quality inspections.

JFE Shoji

JFE Shoji is constantly striving to enhance the level of its quality assurance. 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, including receiving orders, processing 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

Under its Sixth Medium-term Business Plan, JFE Steel is continuously strengthening its manufacturing base while also seeking to bolster the capabilities of the West Japan Works by maximizing its performance. The company is establishing a system for promoting stable furnace operations and introducing technologies and facilities for detecting abnormalities at an early stage of operation. Through these activities JFE Steel will realize stable facility operations and production to continue providing high-quality products to customers.

Meanwhile, the global spread of COVID-19 has caused a rapid downturn in the world economy and stagnation in the Japanese economy, resulting in dramatically significant declines in demand. We have responded with a thorough commitment to efficiency from the rolling process upward by front-loading renovation work for the No. 4 blast furnace in the Kurashiki district and banking (suspending operations) at the No. 4 blast furnace in the Fukuyama district to shift temporarily from a system of eight furnaces to six.

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 maintain and expand its processing and distribution operations to 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.

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)

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.

(Continued from the previous page.)

Customers' Solutions Lab (CSL)

Unified Customer Care

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

Training Sales Personnel to Excel in Customer Relations

To strengthen customer-oriented sales efforts, the Sales Department holds training sessions by position and job, according to their work experience, targeting sales personnel from the headquarters and branch offices (i.e., newly appointed sales employees, mid-rank sales employees, managers and other office heads). The department also provides group training in Japan for regional employees of overseas offices to enhance job performance. Training goals include developing abilities in areas such as engaging in technical conversations, picking up clues from customer relations and using them in product development, offering suggestions to improve logistics and distribution, and analyzing financial indicators and costs.

JFE 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.

The company is also aware that equipping employees to respond with information and proposals is a key element in serving customers and provides training to upgrade their abilities. Furthermore, selected regional employees of overseas subsidiaries and offices receive group training in Japan to strengthen the satisfaction of the company's customers in Japan and overseas.

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

➤ ESG Data: Social Data (P. 187)

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.

Promotion of Research and Development

JFE Steel

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

JFE Steel plans to invest 110 billion yen into research and development over the span of three years, starting in 2018.

JFE Engineering

JFE Engineering develops technology as a company that "creates and continues to care for the foundation for life." In regard to "create," the company developed its own combustion technology for waste-treatment and power-generation facilities. In the area of "creating" the foundation, the company developed proprietary high-efficiency boilers that realize stable, clean incineration treatment and generate power at the highest level of efficiency in Japan. In the area of "care" 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.

Internal Awards

The following technical and product developments were awarded in FY2019.

■ Internal Awards (FY2019)

	Prize/Award	Project	Recipient
JFE Steel	Excellence Award, JFE Steel President's Awards	Realization and deployment of surface inspections based on the twin-illumination and subtraction technique	Cyber-Physical System Research & Development Dept., Steel Research Laboratory and others
		Development of a topology optimization technology for reducing automobile weight	Forming Technology Research Dept., Steel Research Laboratory and others
		Establishment of a manufacturing technology based on the endless rolling process for high-quality, hot-rolled high strength steel	Hot Rolling Dept.t, East Japan Works (Chiba district) and others
		Early start of stable operations at JSGT, and expansion in profit and production capacity through concerted improvement activities by local staff	JFE Steel Galvanizing (Thailand) and others
JFE Engineering	Grand Prize, JFE Engineering President's Awards	Advancement of an operation technique for incinerators based on flame image processing	Research Center of Engineering Innovation and Environmental Solutions Sector Innovation Center

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

External Awards (P. 201)

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 business associates, works to consistently maintain safe working environments and secure workplaces for all employees. Top managers from each Group company conduct safety patrols and inspections to enhance occupational safety.

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

For lost-work injury data, please refer to the following information.

➤ ESG Data: Social Data (P. 187)

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 (577 participants in 2019). We also conduct new employee training and position-specific training on mental health (198 participants in 2019).

Initiatives for Health and Safety by Business Segment

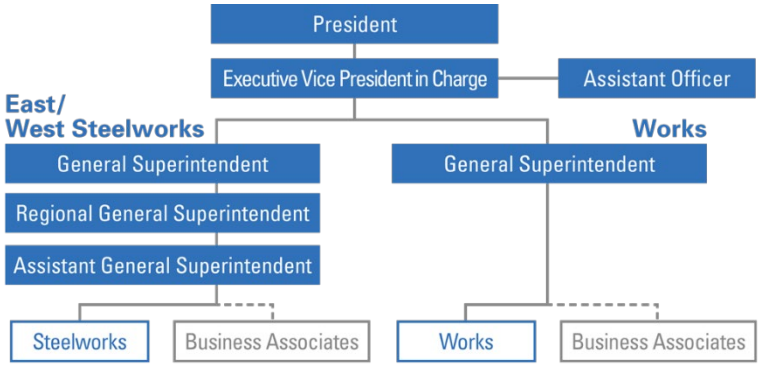
JFE Steel

In 2020, 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. Our slogan is "Nurture close communication across all employees from frontline staff to management supervisors." With this in mind, 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.

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

■ Governance Structure for Health and Safety



JFE Steel seeks to prevent and mitigate risks associated with disasters by assessing risks at the planning stage for new facilities to evaluate and lower the risk level. We conduct risk assessments during regular and non-regular repairs of facilities for the same reason. Additionally, we consistently strive to lower the risk level to make each facility intrinsically safer 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 a serious disaster, a response is deployed across the company, and a standard progress report is submitted to the Board of Directors until countermeasures are 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.

JFE Engineering

JFE Engineering strives to eliminate accidents at its construction and operating sites and manufacturing plants. By establishing “priority items to be shared across the company” to which all employees and all members of associated companies adhere and promoting “identification of sources of danger and safety measures based on risk assessments” in accordance with each operation, the company is committed to disaster elimination. Additionally, driving efforts such as “physical and mental health promotion” and “creation of comfortable working environments” help to ensure the health of employees and raise the level of occupational health. In 2016, the company obtained OHSAS 18001 certification, an international standard for occupational health and safety management systems, for its construction activities in Japan an overseas as well as its manufacturing operations at the Tsurumi and Tsu Works. Certification was upgraded to ISO 45001 in 2019.

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.

For each of its group companies, JFE Shoji assigns a safety manager, who is responsible for improving safety at each company. Every safety manager is also responsible for activities such as (1) strengthening on-site patrols, (2) establishing safety monitors, (3) enforcing risk assessment and hazard prediction, and (4) identifying unsafe operations. Safety managers meet every other month to share information. All workplace accidents that result in employees being absent from work 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. Through these initiatives, the company will raise the level of safety management within the whole 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.

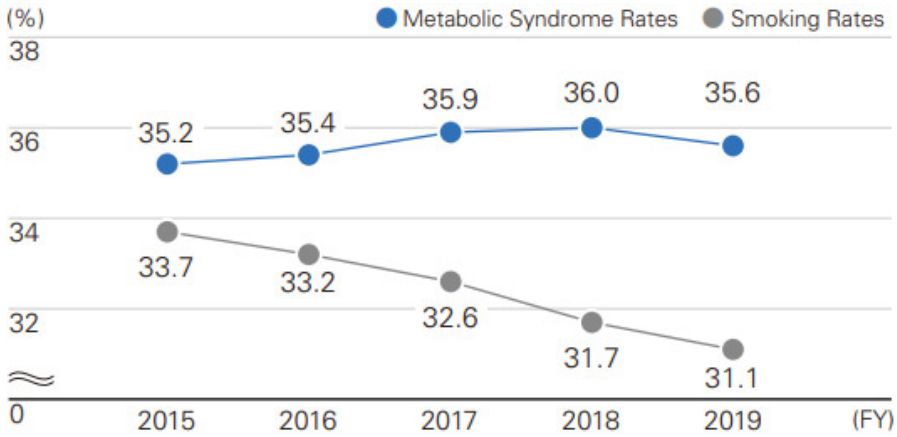
JFE Group Health Declaration

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 over four years, to 51.4% in FY2019, up 13.8 points from 37.6% in FY2014.
For employee health data, please refer to the following information.

➤ ESG Data: Social Data (P. 187)

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, and we also provide information on preventing infectious diseases such as HIV, tuberculosis and malaria during assignment briefings. We will continue to monitor and appropriately respond to global health issues (HIV, tuberculosis and malaria).

JFE Steel

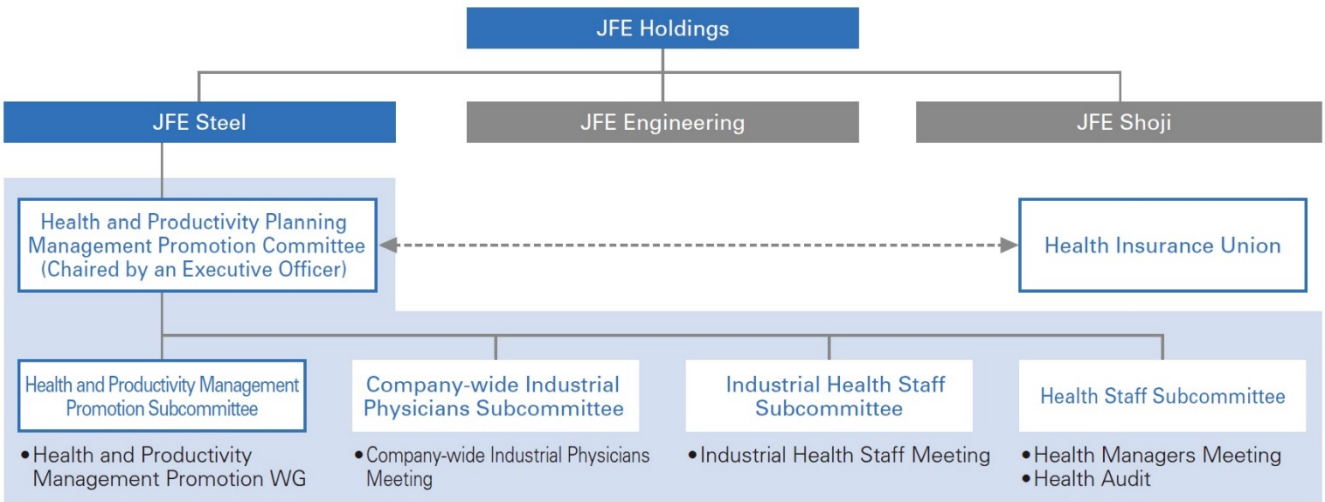
Development of the Health and Productivity Planning Management Promotion System, Company-wide Goals and Follow-ups

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 applicable to all affiliate companies.

■ JFE Steel's Company-wide Targets (2020)

	Targets	2020 Results (est.)
Thorough implementation of physical examinations	Rate of complete exams: 100%	77.0%
	Rate of complete exams for dependents: 60%	48.2%
Preventive health Measures	Rate of providing specific health guidance: at least 60%	47.5%
	Rate of obesity (BMI: 25% or higher) 25% or less	29.5%
Maintaining and improving health	Participation in the Powering Up Health Care program: at least 50%	40.3%
Promotion of non-smoking	Smoking rates: 25% or less	33.8%

■ 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 shared as a contribution to society.

JFE 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.

■ 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 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	Selfcare 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

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 employees to work from home 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. When holding meetings with many people in one place, 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 and setting up temporary parking spaces for factory workers to disperse crowds in the parking lots.

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 global environment, the Group steadily recruits diverse, high-quality skilled human resources, ensures that they receive the skills and knowledge necessary to continue strengthening the Group's technological capabilities, and nurtures their global capabilities.

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. We intend to realize a working environment that enables diverse personnel to fully demonstrate their abilities by pursuing flexible workstyles that cater to the needs of each employee.

JFE Steel

Systems to Support Workstyle Reform

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

JFE Steel also has a work-life-balance vacation program to support employees in taking vacations for personal life events, self-enlightenment, or participation in volunteer activities.

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

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

JFE Engineering

Flexible Workstyle

JFE Engineering is striving to nurture a corporate culture of coming to work early and leaving early by designating 8:00 am to 4:45 pm as its standard working hours and in principle prohibiting work after 8 pm. Other initiatives include planning vacation schedules through discussions between employees and their supervisors and designating days when employees are encouraged to take paid leave or leave work on time. Telecommuting has been implemented to facilitate flexibility in workstyles. Now the working environment encompasses working from home or choosing one of the dozen shared offices around the country owned by a partner real-estate company.

JFE Engineering's next goals are to enhance workstyle reform by taking advantage of the findings from an employee satisfaction survey conducted in FY2018 and to realize a five-day workweek in its construction operations department in order to overcome the difficulty in taking days off, which has been a problem faced by the entire industry. The company is also encouraging employees to apply for the annual paid break program, which allows them to take five consecutive days off once construction work is completed.

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 encourage taking 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.

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 robotic process automation (RPA), a software to facilitate the automation of human work done on terminal devices. In FY2019, RPA was deployed in over 200 types of operation, releasing over 30 thousand hours to be spent on other productive work. In FY2020, we will identify tasks to which RPA can be applied even amid the coronavirus pandemic.

JFE Steel is pushing ahead with a companywide project launched in FY2016 to upgrade mission-critical systems at each steelworks 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 actively working on workstyle reforms since August 2014 and set up “Office of Smart-Work Promotion” in April 2018 to further expand this effort.

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

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. We have been raising productivity by actively implementing cutting-edge IT tools, and the number of organizations using RPA has been rising since FY2018, when the implementation project took off. It has provided numerous advantages such as significantly reducing time spent on certain jobs through automation as well as expediting the provision of services. At the J-SLIM presentation for 2019, 22 teams chosen from JFE Shoji and its group companies reported on the improvements attained through activities addressing various issues. JFE Shoji will continue with its effort to think outside of the box and flexibly address change 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* for quality and work improvement. In addition, the JFE Family Result Reporting Conference, which includes participation from domestic and overseas Group companies, is held twice a year. Also, groups selected through competition are given opportunities to go overseas as incentives.

* Designed to turn JFE into an excellent company and propel it to the number one position in its industry (called JE1 Activities at JFE Engineering and J1 Activities at JFE Steel and JFE Shoji).

JFE Engineering

JFE Engineering has about 180 teams and 1,500 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

Since 2012, 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 from the east and west districts report their activity results and compete against each other. Awards are given to the highest achieving teams. The company will continue to promote J1 Activities to improve workplace vitality and performance and share survey results 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 to maximize the potential of employees regardless of gender, nationality, creed or lifestyle.

Moreover, in the face of the recent trends of a declining birthrate and aging population as well as a decreasing labor force, diversity has become increasingly important for reliably securing excellent human resources.

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 on this, please refer to the following information.

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

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.

In April 2019, the Group tripled the number of women in managerial positions from August 2014, far ahead of the targeted year of 2020. We have already set a new target of raising the number of women in managerial positions fivefold from August 2014 by year 2025, and we remain committed to appointing women to managerial positions.

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

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

- Action Plan based on the Act on Promotion of Women’s Participation and Advancement in the Workplace (P. 134)

Activities by Diversity Promotion Sections

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

Key Initiatives 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. The company also supports employees who are using childcare and nursing care by providing workplace nurseries and holding nursing care seminars. In April 2019, workplace nurseries opened in all districts of our east and west steelworks. Moreover, the company has recently been actively hiring foreign nationals to secure human resources to meet the company's globalization strategy. Various measures have been implemented to support comfortable work environments for non-Japanese employees such as a training program for supervisors who will be working with them.

JFE Engineering

JFE Engineering actively hires personnel with diverse characteristics and values, as well as people from other business sectors. Around 70 people are hired each year as mid-career placements. The head office regularly receives about 80 regional employees from overseas group companies and provides training through daily operations to cultivate mutual understanding and transcend differences in culture and customs. In addition, the company is striving to provide opportunities for management to improve awareness of diversity as well as providing leadership training and seminars for female employees.

JFE Shoji

JFE Shoji is expanding opportunities for female employees by promoting them to managerial positions and dispatching them on overseas assignments. It is also supporting career development through the introduction of a mentor program and enhanced training programs.

Management training in Japan is provided for employees hired overseas to promote global personnel development and increased interaction.

The company is creating increasingly sound and flexible working environments by introducing a work-at-home systems, rehiring former employees, expanding nursing care support, encouraging employees to take paid leaves, and other efforts.

Employment of People with Disabilities

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

For more on the employment of people with disabilities, please refer to the following data.

▶ ESG Data: Social Data (P. 187)

Reemploying Retirees

The JFE Group reemploys people after mandatory retirement at age 60, largely to ensure that the skills and experience of veteran employees are handed down.

In the spirit of Japan's Act on Stabilization of Employment of Elderly Persons, the Group has created a system for all employees to work until the age of 65.

As of April 2020, 904 elderly employees, about 4% of the total, are working at JFE Steel, JFE Engineering, and JEF Shoji.

JFE Steel

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

JFE Engineering

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

JFE Shoji

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

Respect for Sexual Minorities (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 Steel, LGBTQ study groups are held for human resources representatives in each district of its business locations.

Securing Diverse Human Resources

Sixth Medium-term Business Plan : Around **1,040** people per year (FY2018–FY2020)

FY2020 Results : **1,248** people (three operating companies, excluding their subsidiaries)

• Women in positions with prospects for promotion	: 12% (58 out of 475)
Of the above, those in white-collar positions	: 24% (37 out of 157)
• Mid-career and year-round recruits	: 24% (304 out of 1,248)
Of the above, recruits in positions with prospects for promotion	: 25% (121 out of 475)
Of the above, recruits in on-site positions at steelworks	: 24% (183 out of 758)

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

■ Recruitment Results (Three Operating Companies, Excluding their Subsidiaries) in FY2020

Category	Career-track Positions			On-site and Clerical Positions	Total
	White-collar	Technical	Total		
Male	120	297	417	703	1,120
Female	37	21	58	70	128
Total	157	318	475	773	1,248
Ratio of women (%)	23.6	6.6	12.2	9.1	10.3

■ Target Ratios for Female Recruits

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

For more on employees, please refer to the following data.

▶ ESG Data: Social Data (P. 187)

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.

JFE Steel

Utilizing Skill Data for Training Programs

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

JFE 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.

JFE Shoji

Training and Measures to Maximize Employee Potential

In order to unlock the potential of employees with diverse backgrounds and exploit their maximum abilities, JFE Shoji offers female employees a variety of training opportunities, including next-generation female leader training for increasing their active participation in business. JFE Shoji also 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, and the company offers training for newly hired midcareer employees as well. In addition, we provide training aimed at developing the basic skills required of trading company personnel, such as those for negotiation, finance and strategic thinking, to those above the level of young, career-track employees.

Developing Global Personnel

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

■ 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 regional employees of overseas offices	○	○	○
On-the-job training in Japan for regional employees of overseas offices	—	○	—
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 regularly exchange opinions and share information. The company president and other executives exchange views with representatives of its labor union during semiannual Management Committee meetings.

Promoting Satisfying Work Environments

In addition to meeting legal requirements for the minimum wage, 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.

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.

Action Plan based on the Act on Promotion of Women's Participation and Advancement in the Workplace

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.

We have recently formulated an action plan in accordance with the Act on Promotion of Women's Participation and Advancement in the Workplace to establish a work environment that encourages female employees to advance in their careers as managers and for male employees to participate proactively in childcare.

Action Plan Period

Period of five years starting on April 1, 2016 and ending on March 31, 2021

Target of the Action Plan

The JFE Group's common goal regarding women's advancement is to triple the number of female officers and managers in 2020 from 2014.

Please review the following documents for further details, including the specific targets and initiatives of each operation company.

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 Corporation (Japanese only) (https://www.jfe-holdings.co.jp/csr/pdf/female_plan_shoji.pdf)

Human Rights (Respect for 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. Recent Group-wide initiatives, based on the United Nations Guiding Principles on Business and Human Rights, include establishing the JFE Group Human Rights Basic Policy in FY2018 and organizing seminars on business and human rights in FY2019, by external experts who spoke about international trends.

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 executive officer in charge of general administration, 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 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. The Board of Directors receives regular reports on the operational status of these help desks and cases of harassment as well as other human rights violations.

■ 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 2019, we invited an outside attorney to hold a seminar for about 150 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.

Human Rights Initiatives for the Supply Chain

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.

(Continued from the previous page.)

JFE Steel recognizes that human rights violations and environmental issues pose actual business risks in procuring raw materials. We 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. We also established Business Conduct Guidelines, asking suppliers to comply with this initiative, and seek to publicize the guidelines across the supply chain via our website.

With regard to conflict minerals, we have clearly stated our policy to avoid purchasing them in our Business Conduct Guidelines. We comply with Japanese and overseas regulations governing the responsible procurement of minerals as well as international rules and investigate and confirm with suppliers that they are not selling conflict minerals.

For more on the procurement of raw materials, please 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)

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.

In addition to meeting legal requirements for the minimum wage, 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.

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

	Location	Event	Date	Attendees
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

Keihin Community Festival

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 steelworks, in conjunction with festivals and other events.

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 195 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

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 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.

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 FY2019)

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.

From left: 2019 JFE Steel Award recipients Fukushi Ogawa, Yuki Mimuro and Serena Aihara of Shizuoka Kita High School, affiliated with the Shizuoka Institute of Science and Technology

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

FY2019 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.

Since FY2017, the JFE Shoji Group has been providing opportunities for children with special needs to study outside the school. Students gain workplace experiences such as serving coffee or cleaning offices while also learning about distribution by introducing and selling sweets and coffee shop goods that are produced at their school. The Group received 188 students in FY2019.

■ Number of Interns Accepted by Each Operating Company (FY2019)

JFE Steel	JFE Engineering	JFE Shoji
460 (desk work: 191; technical: 269)	Approx. 910	Approx. 640

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. Donations in FY2019 included 700 sets of desks and chairs, 17,000 notebooks, and 12,500 cans of food. The ceremony was attended by many children and local educators.

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

Naosuke Oda, president of JFE Shoji, with 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.

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, please refer to the following information.

- JFE 21st Century Foundation (http://www.jfe-21st-cf.or.jp/eng/)
- ESG Data: Social Data (P. 187)

Support for Technology Research

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

In FY2019, it fielded 195 grant requests and provided a total of 50 million yen in the form of grants valued at 2 million yen each for 12 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 FY2019, 69 applications were received and 10 grants worth 1.5 million yen each were awarded, bringing the total to 15 million yen.

Support Regional Activities

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

In FY2019, it sponsored events in regions across Japan where the Group operates its steel business, including Chiba, Kawasaki, Handa, Kurashiki 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 FY2019, to 671 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 open to local residents (https://www.jfe-steel.co.jp/en/company/csr.html#anc01-08)

(Continued from the previous page.)

- 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 reconstruction-support fairs

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)
- Helped women chose careers in science or engineering (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

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)
- Voluntarily 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)
- Certifed for outstanding 3R-activities (8th straight year) by Yokohama
- 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 Chochikun 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)

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
- Issued grants for Asian historical research
- Donated materials and steel publications
- 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 Sixth 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 (FY2019)

Activity	Participants
Investor meetings	Approx. 500
Individual interviews with institutional inverstors and securities analysts	Approx. 400
Briefings for private investors at securities firms	Approx. 800 in 11 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.

▶ ESG Data: Social Data (P. 187)

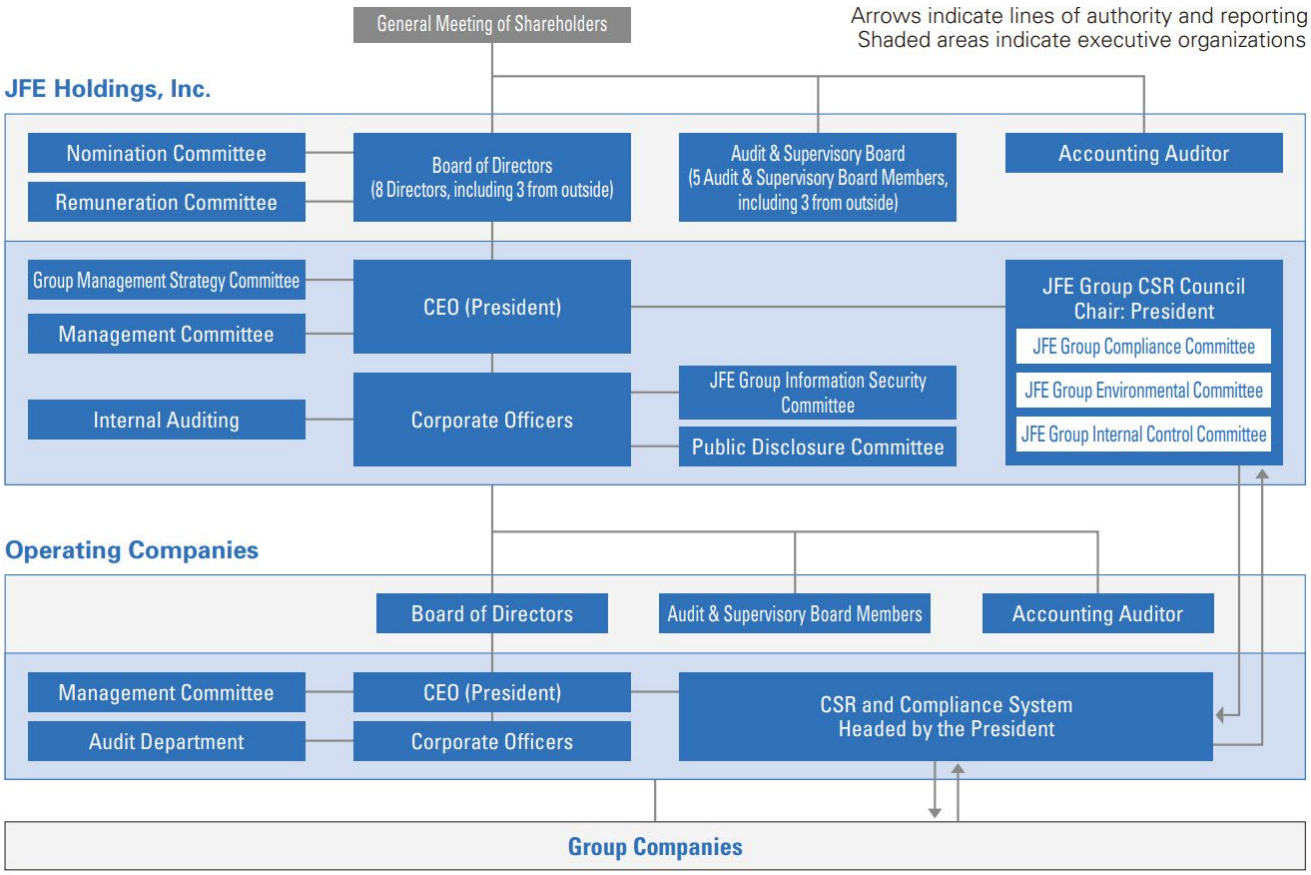
Corporate Governance

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 towards 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 is also disclosed under "Governance Data (P. 192) " in the ESG Data.

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.

➤ESG Data: Corporate Governance System (P. 192)

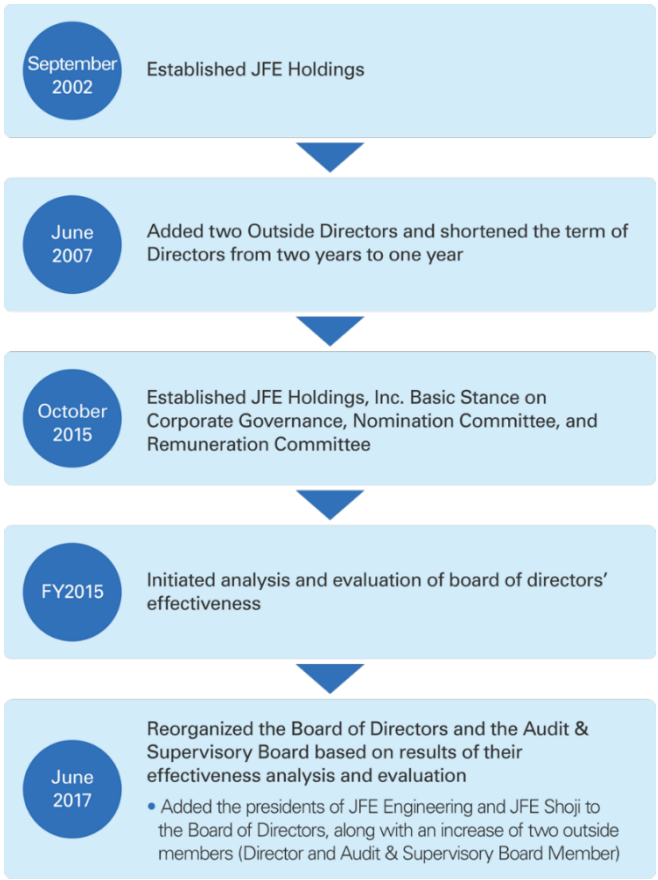
Major Topics Discussed at the FY2019 Board of Directors Meeting

- M&A projects (e.g., acquisition of Cogent Power Inc. in Canada, acquisition of Mitsui E&S Plant Engineering Inc.)
- Investments in overseas business (e.g., specialty bar steel joint venture in China)
- Large-scale capital expenditures (e.g., revamping of the No. 4 blast furnace at West Japan Works(Kurashiki))
- JFE Steel's structural reform and long-term strategy
- ESG initiatives (e.g., 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

We elect Independent Outside directors with the aim of ensuring one-third or more of the Directors are Independent Outside 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)
- ESG Data: Directors and Audit & Supervisory Board Members (P. 192)

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 stance 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 FY2019. The Remuneration Committee deliberates matters pertaining to the basic stance on the remuneration of directors, etc., of the company and each operating company and reports to the Board of Directors. Three meetings were held in FY2019.

➤ESG Data: Nomination Committee and Remuneration Committee (P. 195)

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 worked to improve the overall effectiveness of its Board of Directors by analyzing and evaluating it every year.

In FY2019, third-party questionnaires were sent to all Directors and Audit & Supervisory Board Members. Based on the discussions by the Board of Directors in light of the survey results and evaluation by the third-party organization, the Board of Directors determined that its overall effectiveness has been ensured through vigorous discussions among members, including Outside Directors, based on a preliminary briefing session attended by all Outside Directors/Audit & Supervisory Board Members and appropriately facilitated by the chairperson. In addition, the appointments of a female Audit & Supervisory Board member in June 2019 and a female Director in June 2020 have helped further diversify the composition of Directors and Audit & Supervisory Board Members, thereby enabling more fruitful discussions.

(Continued from the previous page.)

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 support the conclusion that JFE functions more efficiently as a company with an Audit & Supervisory Board.

Meanwhile, we are implementing measures to further improve the effectiveness of the Board of Directors, including enhancing the Board's response to drastic changes in the business environment as they relate to the Business Plan and promoting concrete initiatives on ESG issues essential for sustainable growth.

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.

▶ ESG Data: Operating System (P. 195)

Executive Remuneration

Executive remuneration is based on the basic policies 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 M embers, for an amount within the total limit approved at the General Meeting of Shareholders.

Basic Stance on Determination of Remuneration for Directors and Audit & Supervisory Board Members 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.

The company pays only basic remuneration to Outside Directors and Audit & Supervisory Board Members, given their respective roles of supervising and auditing management from an independent and objective standpoint.

Composition of Remuneration for Directors and Audit & Supervisory Board Members and Corporate Officers

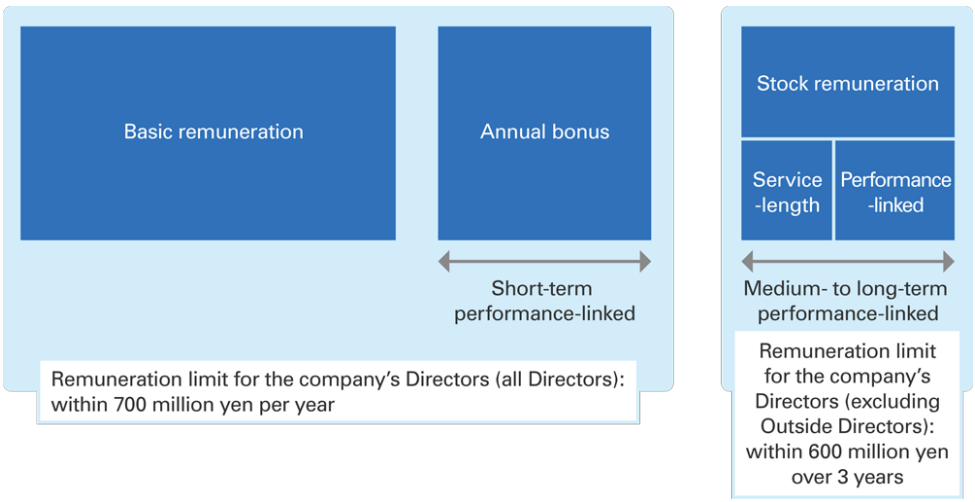
Medium- to long-term performance-linked remuneration system for Directors and Audit & Supervisory Board Members has been introduced from FY2018. Remuneration for Directors and Audit & Supervisory Board Members after the introduction of this system is as follows.

- Basic Remuneration
  A fixed amount is paid every month according to positions and other factors.
- Annual Bonus
  Directors and Corporate Officers, excluding Outside D irectors, receive cash bonuses once a year, based on a standard determined according to single-year consolidated results. From FY2018 to FY2020, the “total amount of segment profit” will be used as a performance indicator.
- Medium- to long-term Performance-linked Remuneration
  The stock remuneration plan is a plan that provides the company’s shares and an amount of cash equivalent to the market price of the company’s shares to Directors (excluding Outside Directors) and Corporate Officers. Remuneration based on this system is paid based on the payment level, which is determined in accordance with the performance targets, etc., in the Group’s medium-term business plan, and as a rule, it is provided at retirement through a trust in the form of the company’s shares or cash.

From FY2018 to FY2020, the payment level is determined according to the level of achievement of the target profit attributable to owners of the parent company of 200 billion yen per year, set under the Sixth Medium-term Business Plan. Furthermore, 5% or more ROE is the minimal requirement for the payment.

Remuneration for the company president when the target goals have been attained is set so that the ratio of basic remuneration (fixed remuneration), annual bonus (short-term performance-liked) and stock remuneration (medium- to long-business performance-linked) roughly stands at 6:2:2.

■ Composition of Remuneration for the Company’s Directors and Part-time Audit & Supervisory Board Members



➤ ESG Data: Executive Remuneration (P. 195)

Internal Control

The JFE Group's internal control system, in accordance with the Basic Stance 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. The Basic Stance for Building Internal Control Systems is revised and improved from time to time to boost sustainable corporate value.

➤ Basic Stance 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 had internal audit organizations comprising 164 people as of April 1, 2020. These organizations share information to enhance overall auditing within the Group.

Audits by Audit & Supervisory Board Members

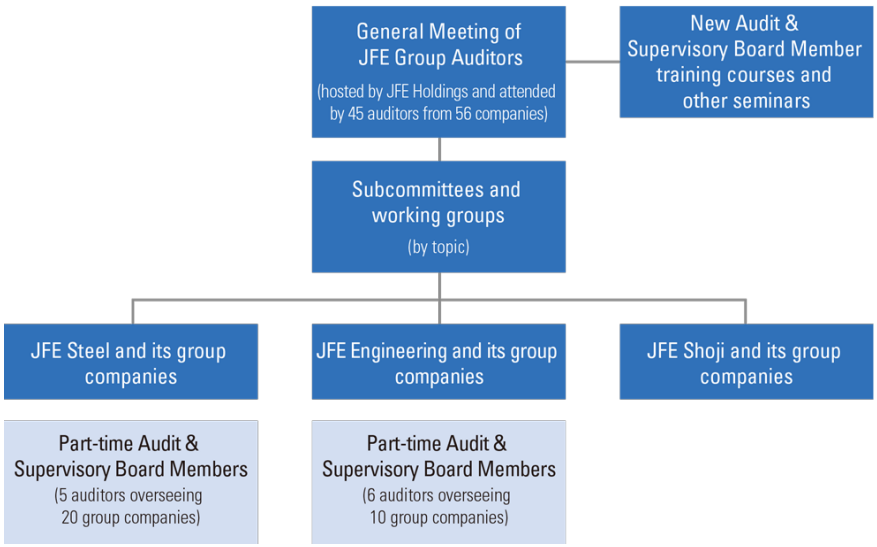
Audit & Supervisory Board Members attend meetings of the Board of Directors, Group Management Strategy Committee and Management Committee as well as other important meetings. To audit how Directors execute their responsibilities, they conduct hearings with Directors and corporate officers regarding operational status and receive operational reports from subsidiaries. In addition to undergoing statutory audits, JFE companies take the following initiatives to ensure the effectiveness of internal auditing by the Audit & Supervisory Board Members and to strengthen coordination among the Members.

A total of 34 full-time Audit & Supervisory Board Members have been appointed to 28 companies, including JFE Holdings. Operating company personnel are dispatched to Group companies as part-time Outside Audit & Supervisory Board Members. Each absentee Audit & Supervisory Board Member serves one to four subsidiaries to raise the quality of the audits by their Audit & Supervisory Board Members and enhance Group governance. Eleven absentee Audit & Supervisory Board Members served 30 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.

➤ ESG Data: Operating System (P. 195)

■ Structure of JFE Group Board of Auditors



Cooperation between Audit & Supervisory Board Members and Accounting Auditor

In FY2019, the Audit & Supervisory Board Members held eight 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 FY2019, 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 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. Among the Group companies, Gecoss Corporation, JFE Container Co., Ltd. and JFE Systems, Inc., which are subsidiaries of JFE Steel Corporation, maintain their listed status as a means to enhance their competitiveness from the perspectives of their specialized business areas as well as to secure market recognition and credibility in funding, sales and marketing, and hiring. The aforementioned 3 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 3 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.

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 the "Operating Companies"), do not hold stocks as strategic shareholdings. Strategic shareholdings, however, are allowed as an exception when holding the stocks of a 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 45 stocks in FY2019. (Total sales amount: approximately 23.2 billion yen (on a market value basis).

Furthermore, in FY2019 the Board of Directors at a meeting held in August 2019 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

	End of 2017	End of 2018	End of 2019
Number of issues	242	238	219
Total balance sheet amount (billion yen)	259.1	241.0	166.1

Compliance (including Anti-corruption)

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 law, regulations on subcontractors and Anti-corruption including bribery of public officials via e-learning, guidebooks, guidebook reading sessions, and 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, laws against bribery of public officials, and more.

Whistleblowing System

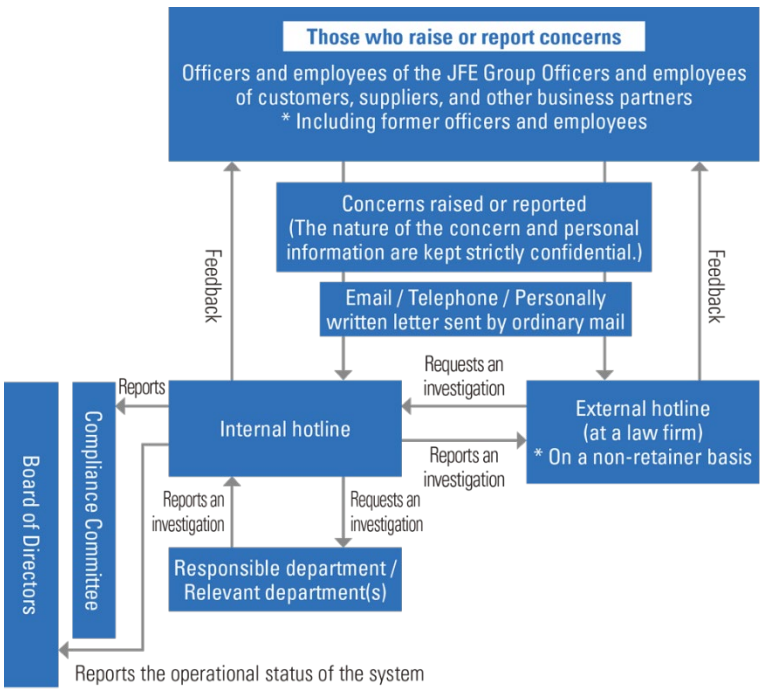
The JFE Group has established a Corporate Ethics Hotline to ensure that crucial information regarding compliance, including violation of the Antimonopoly Act, bribery, or all kinds of workplace harassment can be communicated directly from the front lines to top management rapidly and accurately. The hotline is accessible to all officers and employees of the JFE Group as well as those of suppliers and other business partners. Reports and consultations are accepted via e-mail, a dedicated phone line and postal mail, 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.

In the event that violations of human rights and other laws are confirmed, corrective measures are taken with regard to the organization involved. We provide feedback on the result of investigations to the whistleblower upon request. Whistleblowing and requests for advice are regularly reported to full-time Audit & Supervisory Board M embers, and the operational status of the system is reviewed by the Board of Directors.

We accept inquiries on compliance and other issues from outside stakeholders via a form on the corporate website. The content is handled as confidential and appropriately addressed.

■ Whistleblowing System



Anti-corruption

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 company rules state that these offenses will be penalized.

Preventing Bribery

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. Based on these thoughts, the Group issued JFE Group's Basic Stance 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.

For our stance on preventing bribery, please 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 Law

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 the two Group companies involved in the violations, JFE Steel and JFE Engineering, are auditing transactions with other companies to ensure compliance with the Antimonopoly Law 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 Law.

Confirmation and Improvement through the Employee Awareness Survey

The JFE Group regularly conducts a Corporate Ethics Awareness Survey 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 2019 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. The survey results were reported to the Board of Directors and JFE Group CSR Council, and each company worked on reflecting the information in their specific initiatives.

Risk Management

Risk Management System

JFE Holdings is responsible for comprehensive risk management in accordance with its Basic Stance for Building an Internal Control System. The JFE Group CSR Council, which is chaired by the President of JFE Holdings, collects specific information and enhance management for the purpose of reducing the frequency and impact of risks. The Corporate Officer responsible for risk works to identify potential risks associated with business activities, ethical and regulatory compliance, the disclosure of financial reports and information, as well as ESG risks such as climate change, which have become increasingly important in risk management. If potential risks are identified, they are reviewed and assessed at an appropriate meeting as necessary for further examination or the deployment of countermeasures. The Board of Directors supervises the ESG risks of the JFE Group by receiving reports and holding discussions on its material issues.
For our risk management policies and systems, please 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)
- CSR Structure: JFE Group CSR Council (P. 29)
- Compliance (including Anti-corruption) : Development of the Whistleblowing System (P. 159)

Response to Specific Risks

Response to Climate Change Risks

As an enterprise engaged in iron and steel manufacturing, which is associated with emitting massive volumes of CO_2, climate change is a critical managerial concern from the perspective of business continuity. 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 future business strategies.
For climate change risks and opportunities, please refer to the following information.

- JFE Group's Response to the TCFD (P. 74)

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

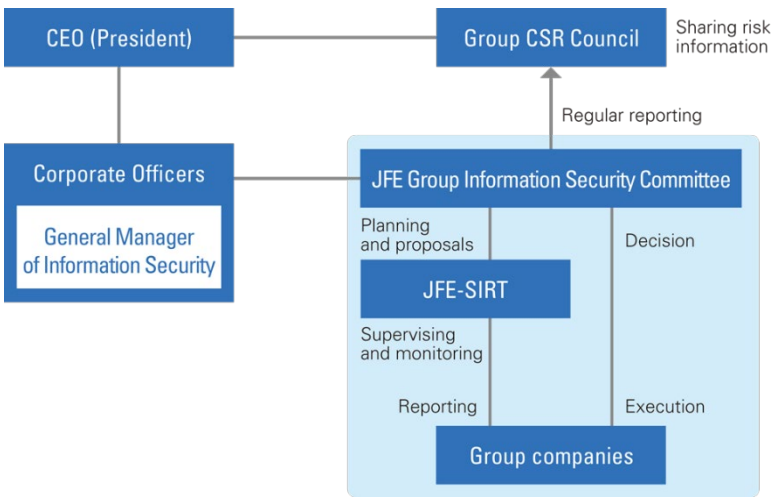
The JFE Group formulates various rules on information security management to prevent information leakage and system failures due to cyber-attacks and improper system use. Efforts are made to enhance information-security knowledge and awareness of rules among employees through training and education. 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 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.

* Established in April 2016.

■ JFE Group Information Security Governance System



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.

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. 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. We will continue to place top priority on the safety and wellness of employees and others involved in the company by practicing thorough hygiene management and implementing a remote working infrastructure.

Through these initiatives, we also seek to explore more flexible workstyles and improve the productivity of our workforce.

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

* 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	FY2015	FY2016	FY2017	FY2018	FY2019
% covered by ISO 14001 certification	Base	All	%	54	50	54	54	58
		ST Gr	%	21	19	20	20	21
		EN Gr	%	5	5	5	5	8
		SH Gr	%	28	26	29	29	29
	Employee	All	%	77	76	70	72	75
		ST Gr	%	-	-	-	72	75
		EN Gr	%	-	-	-	60	66
		SH Gr	%	-	-	-	88	92
Environmental audit (number of sites)		ST Gr	sites	37	34	31	31	32
		EN Gr	sites	48	46	48	50	48
Environmental education conducted (total participants)		EN Gr	people	1,127	1,426	996	1,059	1,063

■ Environmental Accounting Data (1)

Breakdown of environmental protection cost		FY2018		FY2019	
		Investment (billion yen)	Cost (billion yen)	Investment (billion yen)	Cost (billion yen)
Management	Impact monitoring and measurement, and EMS expenses and education	0.3	2.7	0.1	2.6
Global warming countermeasures	Saving and efficiently using energy	12.4	28.6	26.7	27.6
	Recycling industrial water	2.4	17.8	3.9	18.3
Conservation of natural resources	Recycling and waste management of internally generated materials, etc.	1.77	4.8	0.06	5.1
Environmental protection	Air pollution countermeasures	9.9	31.6	11	34.1
	Water pollution countermeasures	1.8	10	4.1	11.3
	Prevention of soil contamination, noise, vibration, and subsidence	0	0.6	0.04	0.6
Other	Charges, etc.	-	1.6	-	1.5
R&D	Technologies for protecting the environment, saving energy, and preventing global warming	1.2	12.9	1	11.3

(Continued from the previous page.)

Breakdown of environmental protection cost		FY2018		FY2019	
		Investment (billion yen)	Cost (billion yen)	Investment (billion yen)	Cost (billion yen)
Societal activities	Support for nature preservation and forestation, information disclosure, exhibitions, and public relations	-	0.7	-	0.7
Total		29.8	111.3	46.8	113.1

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	FY2015	FY2016	FY2017	FY2018	FY2019
Energy-saving investment (accumulated)	All	billion yen	466.2	474.9	492.9	505.4	532.1
Environmental protection investment (accumulated)	All	billion yen	634.0	668.5	692.4	708.5	727.6

Environmental Management (Supplementary Data)

■ List of ISO 14001 Certified Companies (includes certification limited to certain sites of a company)

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 (Thailan)
	JFE Chemical Corp.	PT. JFE Steel Galvanizing Indonesia
	DAIWA KOHTAI CO. LTD[*2]	
JFE Engineering Corporation	J&T Recycling Corporation	Fujikako, Inc.
	JFE Aqua Machine and Service Corporation	Asuka Soken Co,. Ltd.
	JFE Environmental Service Corporation	

(Continued from the previous page.)

Operating company*1	Group company	
JFE Shoji Corporation	JFE Shoji Coil Center Corporation	JFE Shoji Matech Inc.*2
	JFE Shoji Kohnan Steel Center Co., Ltd.	Kawasho Foods Corporation*2
	Taisei Kogyo Corporation	K&I Tabular Corporation*2
	Toyo Kinzoku Corporation	Tohsen Corporation*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 PVT. LTD.
	JFE Shoji Business Support, Inc.*2	

*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	FY2015	FY2016	FY2017	FY2018	FY2019
Scopes 1 and 2 total[*1]	All	million t-CO_2	61.5	61.8	62.2	59.9	60.4
	ST Gr	million t-CO_2	61.4	61.7	62.1	59.7	60.0
	ST[*3]	million t-CO_2	57.3	57.5	58.5	55.4	56.1
	ST subsidiaries	million t-CO_2	4.1	4.2	3.6	4.3	3.9
	EN Gr	thousand t-CO_2	63.7	62.9	56.5	212	403
	EN	thousand t-CO_2	18.3	16.6	17.3	17.5	16.8
	EN subsidiaries	thousand t-CO_2	45.4	46.3	39.3	195	386
	SH Gr	thousand t-CO_2	33.2	31.4	35.0	35.6	34.7
	SH	thousand t-CO_2	0.6	0.5	0.5	0.5	0.5
	SH subsidiaries	thousand t-CO_2	32.7	30.9	34.6	35.1	34.2
Scope 1[*4*5]	All	million t-CO_2	54.7	55.0	54.9	52.3	52.9
	ST Gr	million t-CO_2	-	-	-	52.1	52.5
	ST[*3]	million t-CO_2	52.3	52.6	52.5	49.2	49.8
	ST subsidiaries	million t-CO_2	-	-	-	3.0	2.7
	EN Gr	thousand t-CO_2	-	-	-	171	361
	EN	thousand t-CO_2	-	-	-	7.8	3.8
	EN subsidiaries	thousand t-CO_2	-	-	-	163	357

(Continued from the previous page.)

Items	Scope	Unit	FY2015	FY2016	FY2017	FY2018	FY2019
Scope 2[*2]	All	million t-CO_2	6.6	6.4	7.4	7.6	7.6
	ST Gr	million t-CO_2	-	-	-	7.5	7.5
	ST[*3]	million t-CO_2	5.0	4.9	6.0	6.2	6.3
	ST subsidiaries	million t-CO_2	-	-	-	1.3	1.2
	EN Gr	thousand t-CO_2	-	-	-	41.6	42.2
	EN	thousand t-CO_2	-	-	-	9.7	12.9
	EN subsidiaries	thousand t-CO_2	-	-	-	31.9	29.3
	SH Gr	thousand t-CO_2	33.2	31.4	35.0	35.6	34.7
	SH	thousand t-CO_2	0.6	0.5	0.5	0.5	0.5
	SH subsidiaries	thousand t-CO_2	32.7	30.9	34.6	35.1	34.2
Unit CO_2 emissions (numerator: Scopes 1 and 2 total; denominator: sales)[*6]	All	t-CO_2/ billion yen	17,923	18,684	16,898	15,463	16,206
Scope 3[*7*8]	All	thousand t-CO_2	8,885	13,907	16,272	16,751	16,382
Category 1 Purchased goods and services	All	thousand t-CO_2	7,334	11,019	13,048	13,371	12,557
Category 2 Capital goods	All	thousand t-CO_2	–	840	921	1,180	1,401
Category 3 Fuel and energy related activities not included in Scopes 1 or 2	All	thousand t-CO_2	269	348	386	370	728
Category 4 Upstream transportation and delivery	All	thousand t-CO_2	341	647	650	491	489
Category 5 Waste generated in operations	All	thousand t-CO_2	92	155	87	100	57
Category 6 Business travel	All	thousand t-CO_2	2	4	4	4	4

(Continued from the previous page.)

Items		Scope	Unit	FY2015	FY2016	FY2017	FY2018	FY2019
	Category 7 Employee commuting	All	thousand t-CO_2	29	46	54	49	49
	Category 15 Investments	All	thousand t-CO_2	818	848	1,122	1,186	1,097

*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 FY2019:
- 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 FY2018.
- 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 from FY2015 to FY2016 includes the Sendai Works of JFE Bars & Shapes Corporation.

*4 Data for JFE Steel include CO_2 emissions from non-energy sources.

*5 Starting with FY2018, data for JFE Steel's subsidiaries and JFE Engineering's subsidiary include CO_2 emissions from non-energy sources.

*6 The JFE Group changed its accounting standards from JGAAP to IFRS in FY2018.

*7 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)

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

■ Other Greenhouse Gas

Items			Scope	Unit	FY2015	FY2016	FY2017	FY2018	FY2019
CO_2 emissions from energy sources	CO_2 emissions (Scopes 1 and 2 total)		ST[*1]	million t-CO_2	55.5	55.7	56.6	53.5	54.2
			EN Gr[*2]	thousand t-CO_2	63.7	62.9	56.5	66.7	67.5
		Scope1	ST[*1]	million t-CO_2	50.5	50.8	50.5	47.3	47.9
	Unit: CO_2 emissions (denominator: crude steel production)		ST[*1]	t-CO_2/t-s	1.98	1.94	1.99	2.03	2.03
CO_2 emissions from non-energy sources			ST Gr[*3]	million t-CO_2	–	–	–	2.61	2.65
			ST	million t-CO_2	1.85	1.85	1.91	1.87	1.89
			ST subsidiaries	million t-CO_2	–	–	–	0.74	0.76
			J&T Recycling Co.[*4]	million t-CO_2	–	–	–	0.15	0.34
GHG emissions other than CO_2			All	thousand t-CO_{2e}	91.0	93.7	94.8	88.7	103.3
	Methane (CH_4)		All (ST only)	thousand t-CO_{2e}	71.3	73.4	76.2	72.2	72.9
	N_2O		All	thousand t-CO_{2e}	19.7	20.3	18.6	16.5	30.4
			ST	thousand t-CO_{2e}	19.7	20.3	18.6	16.5	20.0
			J&T Recycling Co.[*4]	thousand t-CO_{2e}	-	-	-	-	10.4
GHG emitted during transportation[*5]			ST Gr	million t-CO_2	0.45	0.65	0.65	0.66	0.65
			ST	million t-CO_2	0.34	0.33	0.37	0.40	0.40
			ST subsidiaries	million t-CO_2	0.11	0.32	0.28	0.26	0.25
Contribution to CO_2 emission reductions by renewable energy plants			EN	million t-CO_2/year	-	3.17	4.06	4.12	4.13
	Biomass power generation		EN	million t-CO_2/year	-	1.30	1.97	2.12	2.12
	Waste power generation		EN	million t-CO_2/year	-	1.61	1.64	1.53	1.53
	Biogas, geothermal, solar power, wind, etc.		EN	million t-CO_2/year	-	0.26	0.46	0.47	0.48

(Continued from the previous page.)

*1 Data from FY2015 to 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. For Others, data up to FY2015 consist of emissions from trucks and railways used by the Group companies, while the scope is expanded to truck, rail and ship from FY2016.

■ Energy

Items		Scope	Unit	FY2015	FY2016	FY2017	FY2018	FY2019
Energy consumption and unit energy consumption	Energy consumption	All	PJ	-	-	-	-	670.1
		ST Gr	PJ	-	-	-	-	668.6
		ST*1	PJ	632.8	640.9	644.0	613.3	619.8
		ST subsidiaries	PJ	-	-	-	-	48.8
		EN Gr	PJ	-	-	-	-	1.3
		SH Gr	PJ	-	-	-	-	0.2
	Unit energy consumption (crude steel production)	ST*1	GJ/t-steel	22.6	22.3	22.6	23.3	23.2
	Energy consumption (Crude petroleum equivalent)	EN	kl	9,189	10,665	10,960	10,886	8,788
	YOY ratio of unit energy consumption	EN	%	96.2	92.9	97.4	95.4	80.7
Recovered energy for recycling	Supplied to society	ST	%	35	35	37	39	39
	Consumed internally	ST	%	65	65	63	61	61

*1 Data from FY2015 to FY2016 includes Sendai Works of JFE Bars & Shapes Corporation.

■ Modal Shift Rate

Items		Scope	Unit	FY2015	FY2016	FY2017	FY2018	FY2019
All transportation	Ship and rail	ST	%	61.5	66.1	66.1	60.2	59.6
	Truck	ST	%	38.5	33.9	33.9	39.8	40.4
Transportation of a distance of 500 km or more	Ship and rail	ST	%	95.5	94.7	92.7	91.6	90.9
	Truck	ST	%	4.5	5.3	7.3	8.4	9.1

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 (FY2019)

Company name	CO_2 emissions (unit: t-CO_2)	Energy consumption (unit: GJ)
JFE MINERAL COMPANY, LTD.	1,119,896	6,323,962
JFE Bars & Shapes Corporation	532,848	9,828,342
Mizushima Ferroalloy Co., Ltd.	324,790	3,123,575
JFE Chemical Corp.	253,340	4,907,869
JFE LOGISTICS CORPORATION	167,703	2,392,170
JFE Material Co., Ltd.	61,898	1,095,040
JFE Galvanizing & Coating Co., Ltd.	68,151	1,382,272
JFE ROCKFIBER CORPORATION	38,077	569,191
JFE Pipe Fitting Mfg. Co., Ltd.	16,337	351,791
JFE Plastic Resource Corporation	22,142	389,888
MIZUSHIMA RIVERMENT CORP.	12,801	168,198
JFE Container Co., Ltd.	10,397	218,321
J-Logitec Co., Ltd.	8,960	130,706
Galvatex Corporation	7,986	153,038
JFE Metal Products & Engineering Inc.	8,403	210,285
JFE Welded Pipe Manufacturing Co., Ltd.	8,257	177,660
JFE Techno-wire Corporation	6,662	142,912
JFE PRECISION CORPORATION	6,439	117,672
K-PLASHEET CORPORATION	4,447	95,381
JFE LIFE CORPORATION	6,714	131,256
CHIBA RIVERMENT AND CEMENT CORP.	4,601	87,655
JFE KENZAI FENCE CO., LTD.	4,274	80,167
JFE Steel Pipe Co., Ltd.	3,160	65,744
GECOSS CORPORATION	3,333	67,268
JFE Kozai Corporation	3,440	73,083
5 overseas companies	1,217,681	16,549,387
Total	3,922,737	48,832,833

■ CO_2 Emissions from Energy Sources and Energy Consumption of JFE Engineering Group Subsidiaries (FY2019)

Company name	CO_2 emissions (unit: t-CO_2)	Energy consumption (unit: GJ)
J&T Recycling Corporation	41,475	810,841
J Farm Corporation	2,819	53,319
Fujikako, Inc.	2,198	44,112
NORTHERN JAPAN MACHINERY Corporation	1,055	17,738
Tohoku Dock Ironworks Corporation	994	18,259
JFE Environmental Service Corporation	894	13,519
Asuka Soken Co,. Ltd.	726	12,356
JFE Pipeline Engineering Corporation	376	5,849
JFE Technos Corporation	172	2,891
JFE Aqua Machine and Service Corporation	45	955
Total	50,754	979,839

Prevention of Pollution

■ Air Emissions

Items	Scope	Unit	FY2015	FY2016	FY2017	FY2018	FY2019
SOx emissions*1	ST Gr	million Nm^3	4.0	4.5	4.7	4.1	4.3
	ST	million Nm^3	4.0	4.5	4.6	4.1	4.3
	ST subsidiaries	million Nm^3	0.03	0.03	0.05	0.04	0.04
NOx emissions*1	ST Gr	million Nm^3	10.6	11.1	11.7	10.7	11.3
	ST	million Nm^3	10.4	10.9	11.5	10.5	11.1
	ST subsidiaries	million Nm^3	0.24	0.22	0.20	0.19	0.17

*1 13 JFE Steel consolidated subsidiaries in Japan.

■ Release to Waterways

Items	Scope	Unit	FY2015	FY2016	FY2017	FY2018	FY2019
COD (chemical oxygen demand)	ST	t/day	3.1	3.1	3.0	3.3	3.2
	ST subsidiaries*1	t/day	0.08	0.13	0.14	0.17	0.15
	EN	kg/day	6.0	6.1	5.6	6.8	8.4

*1 12 JFE Steel consolidated subsidiaries in Japan.

■ Chemical Substances Management

Items		Scope	Unit	FY2015	FY2016	FY2017	FY2018	FY2019
PRTR-registered substances*2	Amount released	All*1	t	-	-	-	1,019	925
		ST Gr	t	842	842	897	814	773
		ST	t	456	429	516	545	488
		ST subsidiaries	t	386	413	381	269	285
		EN Gr	t	-	-	-	205	152
		EN	t	104	87	85	147	107
		EN subsidiaries	t	-	-	-	58.4	45.4
	Amount transferred	All*1	t	-	-	-	9,210	7,867
		ST Gr	t	8,638	7,047	8,934	9,176	7,833
		ST	t	3,590	2,212	2,726	2,533	1,866
		ST subsidiaries	t	5,048	4,835	6,208	6,643	5,967
		EN Gr	t	-	-	-	34	34
		EN	t	24	28	28	28	29
		EN subsidiaries	t	-	-	-	5.7	5.4

*1 JFE Shoji is not included in the scope of the report as the company is not subject to PRTR registration.
*2 Coverage:
- JFE Steel and 18 consolidated subsidiaries in Japan.
- JFE Engneering and 4 consolidated subsidiaries in Japan.

Prevention of Pollution (Supplementary Data)

■ SOx and NOx Emissions of JFE Steel Group Subsidiaries (FY2019)

Company name	SOx emissions(unit: Nm^3)	NOx emissions(unit: Nm^3)
JFE Material Co., Ltd.	10,167	20,269
JFE Chemical Corp.	9,514	34,728
JFE MINERAL COMPANY, LTD.	7,919	64,174
JFE Bars & Shapes Corporation	13,140	9,749
JFE Galvanizing & Coating Co., Ltd.	1,874	11,535
JFE PRECISION CORPORATION	192	1,313
Mizushima Ferroalloy Co., Ltd.	338	22,603
K-PLASHEET CORPORATION	175	0
JFE Container Co., Ltd.	145	0
JFE Plastic Resource Corporation	165	464
CHIBA RIVERMENT AND CEMENT CORP.	35	610
JFE Metal Products & Engineering Inc.	53	1,803
JFE Pipe Fitting Mfg. Co., Ltd.	24	858
MIZUSHIMA RIVERMENT CORP.	0	1,027
Galvatex Corporation	0	683
Total	43,741	169,817

Efficient Use of Natural Resources

■ Natural Resources

Items			Scope	Unit	FY2015	FY2016	FY2017	FY2018	FY2019
Input	Raw materials for steel production		ST	million tonnes	69.0	70.1	71.3	66.0	67.0
		Iron ore	ST	million tonnes	43.4	43.5	43.5	40.1	41.4
		Coal	ST	million tonnes	19.9	21.0	22.0	20.6	20.3
		Lime	ST	million tonnes	5.7	5.6	5.8	5.3	5.3
	Recycled materials (steel scrap)		ST	million tonnes	0.6	0.7	1.2	1.3	1.1
	Raw materials		EN	thousand tonnes	32.9	39.1	41.8	47.3	39.4
Products supplied	Steel products		ST*1	million tonnes	28.0	28.8	28.5	26.3	26.7
	Engineering products		EN	thousand tonnes	31.2	36.1	39.7	44.5	36.6

*1 Data from FY2015 to FY2016 includes the Sendai Works of JFE Bars & Shapes Corporation.

■ Co-products and Wastes

Items			Scope	Unit	FY2015	FY2016	FY2017	FY2018	FY2019
Co-products	Amount generated[*1]		ST Gr	million tonnes	15.4	15.3	16.2	16.1	15.6
			ST	million tonnes	14.6	14.5	15.7	15.3	15.1
			ST subsidiaries	million tonnes	0.771	0.776	0.539	0.792	0.546
	Amount recycled internally		ST	million tonnes	3.6	3.7	4.2	6.0	5.0
	Internal recycle rate		ST	%	24.6	25.4	27.5	39.3	32.9
	Landfill amount[*1]		ST Gr	million tonnes	-	0.087	0.081	0.081	0.074
			ST	million tonnes	0.042	0.045	0.047	0.052	0.043
			ST subsidiaries	million tonnes	-	0.042	0.034	0.029	0.031
	Recycling rate		ST	%	99.7	99.7	99.7	99.7	99.7
Marine, land, and civil engineering material (using co-products)	Co-products generated		ST	million tonnes	14.6	14.5	15.4	15.3	15.1
	Used by local communities		ST	million tonnes	11.0	10.8	11.2	9.2	10.1
	Rate of local communities use		ST	%	75.1	74.3	72.2	60.4	66.8
Wastes	Amount generated[*2*3]		EN Gr	thousand tonnes	-	-	158.0	131.7	211.0
		Offices	EN	t	340.2	320.8	429.8	386.4	367.1
			Yokohama HO	t	258.4	241.7	357.1	299.9	299.0
			Tsu works	t	81.8	79.1	72.7	86.5	68.2
		Productions	EN	t	816.3	973.2	773.0	1,039.3	1,340.5
			Tsurumi works	t	252.1	443.4	302.3	506.6	653.8
			Tsu works	t	564.2	529.8	470.7	532.7	686.7

(Continued from the previous page.)

Items			Scope		Unit	FY2015	FY2016	FY2017	FY2018	FY2019
Wastes		Constructions	EN		t	91,308.9	101,812.2	88,140.4	109,045.2	145,397.7
		Subsidiaries	EN subsidiaries		t	-	-	69,835.7	22,634.4	63,876.7
	Landfill		EN Gr		t	1,877.5	1,954.4	1,666.5	2,125.1	4,489.3
		Offices	EN		t	9.2	8.4	9.0	10.7	8.5
				Yokohama HO	t	3.2	3.3	4.3	4.1	3.3
				Tsu works	t	6.0	5.1	4.7	6.6	5.2
		Productions	EN		t	374.0	329.8	289.0	353.3	312.6
				Tsurumi works	t	99.4	67.0	70.6	83.2	77.3
				Tsu works	t	274.6	262.8	218.4	270.1	235.3
		Constructions	EN		t	1,494.3	1,616.2	1,368.5	1,761.1	4,168.2
	Recycle rate		EN Gr		%	94.0	96.3	96.7	97.0	95.8
		Offices	EN		%	97.1	96.9	97.6	96.7	97.3
				Yokohama HO	%	98.7	98.5	98.7	98.5	98.8
				Tsu works	%	91.5	88.9	89.0	85.2	85.2
		Productions	EN		%	39.1	53.4	45.3	46.8	68.0
				Tsurumi works	%	49.8	78.9	61.0	68.7	79.4
				Tsu works	%	34.0	32.5	37.0	32.1	60.9
		Constructions	EN		%	98.3	98.4	98.4	98.4	97.1

*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	FY2015	FY2016	FY2017	FY2018	FY2019
Rubble	Amount generated	EN	t	60,373	56,767	58,824	78,410	113,637
	Landfill amount	EN	t	40	414	94	297	1,533
	Recycle rate	EN	%	99.9	99.3	99.8	99.6	98.6
Sludge	Amount generated	EN	t	11,840	21,814	23,463	16,142	17,225
	Landfill amount	EN	t	53	98	849	199	205
	Recycle rate	EN	%	99.5	99.5	96.3	98.8	98.8
Industrial waste excluding rubble and sludge	Amount generated	EN	t	19,096	23,231	5,853	14,494	14,535
	Landfill amount	EN	t	1,401	1,103	425	1,265	2,430
	Recycle rate	EN	%	91.7	95.0	92.2	91.0	82.1

■ Paper Consumption at JFE Shoji

tems	Scope		Unit	FY2015	FY2016	FY2017	FY2018	FY2019
Consumption of copier papers	SH		boxes	4,838	4,904	5,100	4,832	4,675
		Tokyo	boxes	2,623	2,614	2,674	2,661	2,516
		Osaka	boxes	610	545	527	372	399
		Nagoya	boxes	212	305	308	217	293
		Branch	boxes	1,393	1,440	1,591	1,582	1,467

Efficient Use of Natural Resources (Supplementary Data)

■ Examples of Recycling and Processing at JFE Group (FY2019)

Content		Unit	Volume
Plastic containers and packaging bidding		million tonnes	0.10
Using waste plastics in the iron and steelmaking process	Used directly in the iron and steelmaking process	million tonnes	0.06
	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	1-6-1 Minato, Miyagino-ku Sendai-shi, Miyagi
		Plastic material recycling plant	same as above
		Fluorescent tube recycling plant	same as above
		Recycled pallet manufacturing plant	same as above
		Confidential documents disposal plant	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 Chiba-shi, 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)	Oumi 3-chome chisaki, Koto-ku, Tokyo
		Vertical furnace (medical)	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

(Continued from the previous page.)

Area	Name of company, plant, business establishment, etc.	Plant	Addresses
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
		Dry cell battery and battery recycling plant	2-1-8 Suehiro-cho, Tsurumi-ku Yokohama-shi, Kanagawa
	Tsurumi Fluorescent Tube Recycling Plant	Fluorescent tube recycling plant	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
	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		
	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, Fukuyama-shi, Hiroshima
	J&T Recycling Corporation		
	Fukuyama RPF Plant	RPF manufacturing plant	115-1 Minoki-cho, Fukuyama-shi, Hiroshima
	Fukuyama PM Recycling Plant	Plastic material recycling plant	same as above
	Fukuyama Palette Plant	Recycled pallet manufacturing plant	same as above
	Steel Works	Kiln incinerator	1 Kokan-cho, Fukuyama-shi, Hiroshima
		Controlled landfill	same as above
		Liquid waste neutralization plant	same as above

(Continued from the previous page.)

Area	Name of company, plant, business establishment, etc.	Plant	Addresses
Fukuyama	Fukuyama Recycle Electric Generation Co., Ltd.	Refuse-derived fuel (RDF) gasifying power generation plant (commissioned operation)	107-8 Minoki-cho, Fukuyama-shi, Hiroshima
Toyama	JFE Material Co., Ltd.	Rare metal recovery plant for spent catalysts	2-9-38 Shosei-machi, Imizu-shi, Toyama

Water Security

■ Water

Items	Scope	Unit	FY2015	FY2016	FY2017	FY2018	FY2019
Amount of water accepted[*1]	All	million tonnes	-	-	241	240	242
	ST Gr	million tonnes	229	237	241	238	241
	ST	million tonnes	203	212	220	218	221
	ST subsidiaries	million tonnes	26.4	24.9	20.6	20.5	19.8
	EN Gr	thousand tonnes	-	-	832	918	1,410
	EN	thousand tonnes	95	94	97	102	106
	EN subsidiaries	thousand tonnes	-	-	735	816	1,304
	SH Gr	thousand tonnes	247	140	166	165	149
	SH	thousand tonnes	-	-	-	-	-
	SH subsidiaries	thousand tonnes	247	140	166	165	149
Amount of water released[*2]	ST Gr	million tonnes	-	-	146	144	143
	ST	million tonnes	128	126	128	126	126
	ST subsidiaries	million tonnes	-	-	17.8	18.0	17.0
	EN	thousand tonnes	165	148	140	146	126

(Continued from the previous page.)

Items	Scope	Unit	FY2015	FY2016	FY2017	FY2018	FY2019
Amount of water consumption*2	ST Gr	million tonnes	-	3,679	3,690	3,665	3,616
	ST	million tonnes	3,326	3,340	3,410	3,376	3,323
	ST subsidiaries	million tonnes	-	339	280	289	293
Amount evaporated	ST	million tonnes	75	86	92	92	95
Ratio of amount released and evaporated	ST	%	6.3	6.3	6.5	6.5	6.6
Amount recycled*2	ST Gr	million tonnes	-	3,442	3,449	3,427	3,375
	ST	million tonnes	3,123	3,128	3,190	3,158	3,102
	ST subsidiaries	million tonnes	-	314	259	269	273
Recycling rate*2*3	ST	%	93.9	93.7	93.5	93.5	93.4
	ST subsidiaries	%	-	91	93	93	93

*1 Coverage:
- JFE Steel and 25 consolidated subsidiaries in Japan.
- JFE Engineering and 7 consolidated subsidiaries in Japan.
- 33 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	FY2018	FY2019
Total amount accepted	All*1	million tonnes	219.6	218.3	220.9
River/lake		million tonnes	0	0	0
Groundwater		million tonnes	0	0	0
Industrial water/waterworks		million tonnes	219.6	218.3	220.9
Ocean		million tonnes	0	0	0
Rainwater		million tonnes	0	0	0
Other intake source		million tonnes	0	0	0
Total amount released	All*1	million tonnes	128.8	126.0	126.6
Ocean		million tonnes	128.3	125.6	126.2
Surface water		million tonnes	0	0	0
Underground/well		million tonnes	0	0	0
Off-site water processing		million tonnes	0.4	0.4	0.5
Beneficial use/other use		million tonnes	0	0	0
Other discharge source		million tonnes	0	0	0

*1 Data cover JFE Steel and JFE Engneering.

Water Security (Supplementary Data)

■ Amount of Water Accepted and Released at JFE Steel Group Subsidiaries (FY2019)

Company name	Amount accepted (unit:tonnes)	Amount released (unit:tonnes)
JFE MINERAL COMPANY, LTD.	2,357,033	2,332,290
JFE ROCKFIBER CORPORATION	52,926	52,926
Mizushima Ferroalloy Co., Ltd.	431,617	15,065
JFE Material Co., Ltd.	3,860,186	3,860,186
CHIBA RIVERMENT AND CEMENT CORP.	6,977	6,977
MIZUSHIMA RIVERMENT CORP.	17,001	17,001
JFE PRECISION CORPORATION	575,747	575,747
JFE Plastic Resource Corporation	17,355	13,744
JFE Bars & Shapes Corporation	4,875,906	2,964,831
JFE Metal Products & Engineering Inc.	101,075	136,362
JFE KENZAI FENCE CO., LTD.	68,532	68,532
JFE Galvanizing & Coating Co., Ltd.	1,029,897	870,286
JFE Container Co., Ltd.	297,120	297,120
JFE Welded Pipe Manufacturing Co., Ltd.	64,475	64,475
JFE Steel Pipe Co., Ltd.	1,463	1,463
Galvatex Corporation	699,911	699,911
JFE Pipe Fitting Mfg. Co., Ltd.	4,246	35,329
JFE Techno-wire Corporation	89,535	89,535
JFE Kozai Corporation	14,879	14,879
GECOSS CORPORATION	63,005	63,221
JFE LOGISTICS CORPORATION	117,257	117,257
J-Logitec Co., Ltd.	3,217	3,217
JFE Chemical Corp.	4,488,973	4,210,610
K-PLASHEET CORPORATION	35,416	11,142
JFE LIFE CORPORATION	492,413	470,335
Total	19,766,162	16,992,441

■ Amount of Water Accepted at JFE Engineering Group Subsidiaries (FY2019)

Company name	Amount accepted (unit: thousand tonnes)
J&T Recycling Corporation	1,216
JFE Environmental Service Corporation	0.03
NORTHERN JAPAN MACHINERY Corporation	0.003
Tohoku Dock Ironworks Corporation	57.3
JFE Aqua Machine and Service Corporation	0.002
Fujikako, Inc.	0.02
J Farm Corporation	30.6
Total	1,304

Social Data

Customer Responsibility

■ Customer Training (FY2019)

Name of training	Scope	Unit	Participants
Technical presentation by overseas Group companies (number of participating companies*)	JFE Shoji	People (companies)	33 (15)
National staff training	JFE Shoji	People	24

* Data covers 9 countries for the number of participating companies.

Occupational Health and Safety

■ Lost-work Injuries and Accidents

Items		Scope	Unit	FY2015	FY2016	FY2017	FY2018	FY2019
Lost-work Injuries and Severity (Rates)	Lost-work injuries*2	JFE Steel*1	-	0.15	0.21	0.17	0.17	0.28
	Severity*3		-	0.16	0.15	0.15	0.15	0.30
	Lost-work injuries*2	JFE Engineering*1	-	0.28	0.19	0.71	0.82	0.45
	Severity*3		-	0.01	0.30	0.02	0.02	0.62
	Lost-work injuries*2	JFE Shoji Group*1	-	0.67	1.16	1.22	0.60	1.00
	Severity*3		-	1.02	0.41	0.97	0.04	0.02
	Lost-work injuries*2	Manufacturing industry average	-	1.06	1.15	1.02	1.20	1.20
	Severity*3		-	0.06	0.07	0.08	0.10	0.10
Number of lost-work injuries	Lost-work injuries	JFE Group	Cases	-	35	42	41	49
	Fatal injuries		Cases	-	3	3	2	6
	Lost-work injuries	JFE Steel	Cases	-	22	18	18	30
	Fatal injuries		Cases	-	2	2	2	4
	Lost-work injuries	JFE Engineering	Cases	-	4	14	18	11
	Fatal injuries		Cases	-	1	0	0	2
	Lost-work injuries	JFE Shoji Group	Cases	-	9	10	5	8
	Fatal injuries		Cases	-	0	1	0	0

(Continued from the previous page.)

Items		Scope	Unit	FY2015	FY2016	FY2017	FY2018	FY2019
Lost-work Injuries Involving Employees	Lost-work injuries	JFE Group	Cases	-	14	13	13	18
	Fatal injuries		Cases	-	1	2	1	1
	Lost-work injuries	JFE Steel	Cases	-	6	4	7	10
	Fatal injuries		Cases	-	1	1	1	1
	Lost-work injuries	JFE Engineering	Cases	-	0	0	1	2
	Fatal injuries		Cases	-	0	0	0	0
	Lost-work injuries	JFE Shoji Group	Cases	-	8	9	5	6
	Fatal injuries		Cases	-	0	1	0	0
Lost-work injuries involving employees of contractors	Lost-work injuries	JFE Group	Cases	-	21	29	28	31
	Fatal injuries		Cases	-	2	1	1	5
	Lost-work injuries	JFE Steel	Cases	-	16	14	11	20
	Fatal injuries		Cases	-	1	1	1	3
	Lost-work injuries	JFE Engineering	Cases	-	4	14	17	9
	Fatal injuries		Cases	-	1	0	0	2
	Lost-work injuries	JFE Shoji Group	Cases	-	1	1	0	2
	Fatal injuries		Cases	-	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 (2019)

Items	Unit	Participants*
Training for chief of construction site (responsible for controlling health and safety matters)	People	577
Mental healthcare education for new hires and at rank-based training	People	198

* Total of 3 operating companies.

■ Employee Health Data

Items	Scope	Unit	FY2015	FY2016	FY2017	FY2018	FY2019
Metabolic syndrome rates	Insured by the JFE Group's health insurance union (age 40 and above)	%	35.2	35.4	35.9	36.0	35.6
Smoking rates		%	33.7	33.2	32.6	31.7	31.1
Rate of health examination for dependents	Age 40 and above	%	40.8	42.1	43.7	48.2	51.4

■ Health Data for Employees and Their Family

Items	Scope	Unit	FY2015	FY2016	FY2017	FY2018	FY2019
Provision rate of health guidance	JFE Steel	%	15.9	17.8	36.8	56.9	56.9
	JFE Engineering	%	7.3	12.9	22.7	22.1	28.9
	JFE Shoji	%	38.1	21.9	25.0	45.2	36.8
Rate of health examination for dependents*	JFE Steel	%	45.9	45.7	46.0	52.3	48.2
	JFE Engineering	%	47.4	46.4	47.3	54.2	51.7
	JFE Shoji	%	50.0	53.5	55.1	52.4	51.0

* Scope: dependents (including spouses and others) age 40 and above

Labor Practice

■ Employee Data (2019)

category		Consolitaded/ non-consolitaded	Unit	JFE Steel	JFE Engineering	JFE Shoji
Employees		Conslidated*1	people	45,844	10,265	7,855
	Male		people	40,215	8,851	5,707
	Female		people	5,629	1,414	2,148
Management positions			people	11,549	3,387	1,709
	Male		people	10,899	3,224	1,480
	Female		people	650	163	229
	Ratio of women in management positions		%	5.6	4.8	13.4
Employees		Non-consloitaded*2	people	15,998	3,841	987
	Male		people	14,636	3,307	603
	Female		people	1,362	534	384
Management positions			people	2,800	2,348	630
	Male		people	2,650	2,216	591
	Female		people	150	132	39
	Ratio of women in management positions		%	5.4	5.6	6.2
Recruits			people	1,022	143	83
	Male		people	935	132	53
	Female		people	87	11	30
	New graduates		people	795	79	70
	Mid-career		people	227	64	13

(Continued from the previous page.)

category		Consolitaded/ non-consolitaded	Unit	JFE Steel	JFE Engineering	JFE Shoji
Years of continuous employment (average)		Non-consloitaded*2	year	15.9	13.8	13.9
	Male		year	15.8	13.8	14.3
	Female		year	17.9	13.8	12.9
Job turnover rate*4			%	2.5	1.5	2.9
Rehired employees			people	824	48	32
Ratio of rehired employees			%	5.2	1.2	3.2
Average annual leave taken			day/year	17.0	18.7	12.7
Average overtime			hours/ month	27.4	27.6	26.8
Employees working shorter hours for childcare (aggregated)			people	129	79	21
Temporary staffs			people	214	732	16

*1 Consolidated subsidiaries (JFE Steel: 148, JFE Engineering: 55, JFE Shoji: 87)
*2 As of April 1, 2020. Other figures are as of FY2019.
*3 Management positions at JFE Engineering and JFE Shoji include employees on loan.
*4 Job turnover rate: percentage of employees who voluntarily choose to resign from the organization.

■ Recruiting (FY2020)

category	Unit	Career-track Positions			On-site and Clerical Positions	Total
		White -collar	Technical	Total		
Male	people	120	297	417	703	1,120
Female	people	37	21	58	70	128
Total	people	157	318	475	773	1,248
Ratio of women (%)	%	23.6	6.6	12.2	9.1	10.3

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

Category	Scope	Unit	2016	2017	2018	2019	2020
Employment of People with Disabilities	JFE Steel	%	2.24	2.34	2.33	2.41	2.48
	JFE Engineering	%	1.59	2.01	2.14	2.39	2.23
	JFE Shoji	%	2.11	1.86	2.20	2.62	2.50

Community

■ Social Contributions (FY2019)

Activities		Scope	Unit	Achievements
Internships		JFE Group	People	Approximately 2010
		JFE Steel	People	Approximately 460
		JFE Engineering	People	Approximately 910
		JFE Shoji	People	Approximately 640
Supporting elementary schools in Ghana and Nigeria	Desks and chairs	JFE Shoji	Sets	700
	Notebooks		Books	17,000
	Canned foods		Cans	12,500

■ JFE 21st Century Foundation (FY2019)

Grants		Projects	Value (million yen)
Technology research (accumulated)		632	1,271.8
Technology research for FY2019	Iron and steel technology research	12	24
	Global environment and global warming prevention technology research	13	26
Asian history studies (accumulated)		130	195
Asian history studies for FY2019		10	15

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 671 elementary and middle schools and 73 public libraries.

Shareholders and Investors

■ Major IR Activities (FY2019)

Major communication methods, etc.	Number of sessions	participation (people)
Investors meeting	5	Approx. 500
Individual interviews with institutional investors and securities analysts	As needed	Approx. 400
Briefings for Individual investor (at the branch offices of securities firms, etc.)	11	Approx. 800

■ 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	Approximately 1,800

Governance Data

Corporate Governance

■ Corporate Governance System

As of July 1, 2020

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, 2020

Position		Name	Significant concurrent post	Independent executive	Number of meetings of the Board of Directors attended in FY2019	Number of meetings of the Audit & Supervisory Board attended in FY2019
Director	Inside	Koji Kakigi	Chairman of the Board of Directors of JFE 21st Century Foundation (Public Interest Incorporated Foundation)	-	14/14(100%)	-
		Yoshihisa Kitano	Representative Director, President and CEO of JFE Steel Corporation	-	11/11(100%)	-

(Continued from the previous page.)

Position		Name	Significant concurrent post	Independent executive	Number of meetings of the Board of Directors attended in FY2019	Number of meetings of the Audit & Supervisory Board attended in FY2019
Director	Inside	Masashi Terahata	Director of JFE Steel Corporation, Representative Director of JFE 21st Century Foundation (Public Interest Incorporated Foundation)	-	11/11(100%)	-
		Naosuke Oda	Representative Director, President and CEO of JFE Shoji Corporation	-	14/14(100%)	-
		Hajime Oshita	Representative Director, President and CEO of JFE Engineering Corporation	-	14/14(100%)	-
	Outside	Masami Yamamoto	Director and Senior Advisor of Fujitsu Limited, Outside Director of Mizuho Financial Group, Inc.	○	14/14(100%)	-
		Nobumasa Kemori	Executive Advisor of Sumitomo Metal Mining Co., Ltd., Outside Director of NAGASE & CO., LTD., Outside Director of Sumitomo Realty & Development Co., Ltd.	○	14/14(100%)	-
		Yoshiko Ando	Audit & Supervisory Board Member of Kirin Holding Company, Limited, Outside Director of Sansei Technologies, Inc.	○	-	-

(Continued from the previous page.)

Position		Name	Significant concurrent post	Independent executive	Number of meetings of the Board of Directors attended in FY2019	Number of meetings of the Audit & Supervisory Board attended in FY2019
Audit & Supervisory Board Member	Inside	Nobuya Hara	Audit & Supervisory Board Member of JFE Steel Corporation	-	14/14(100%)	20/20(100%)
		Kumiko Baba	Audit & Supervisory Board Member of JFE Engineering Corporation, Audit & Supervisory Board Member of JFE Shoji Corporation	-	11/11(100%)	13/13(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.	○	14/14(100%)	20/20(100%)
		Isao Saiki	Partner Lawyer of Abe, Ikubo & Katayama Law Firm	○	14/14(100%)	20/20(100%)
		Tsuyoshi Numagami	Professor, Graduate School of Business Administration, Department of Business Administration of HITOTSUBASHI UNIVERSITY	○	14/14(100%)	20/20(100%)

Note:
- The number of meetings of the Board of Directors held during FY2019 differ for Mr. Yoshihisa Kitano and Mr. Masashi Terahata, as they were newly elected as directors at the previous year's Ordinary General Meeting of Shareholders (held on June 21, 2019).
- The number of meetings of the Board of Directors and Audit & Supervisory Board held during FY2019 differ for Ms. Kumiko Baba, as she was newly elected as an Audit & Supervisory Board member at the previous year's Ordinary General Meeting of Shareholders (held on June 21, 2019).

■ Nomination Committee and Remuneration Committee

As of July 1, 2020

Items	Members	Chairperson	Number of meetings held during FY2019
Nomination Committee	6	Masami Yamamoto (Outside Director)	6
Inside Director	2		
Outside Director	2		
Outside Audit & Supervisory Board Member	2		
Remuneration Committee	6	Nobumasa Kemori (Outside Director)	3
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

FY2019

Executive remuneration

Position	Total remuneration, etc. (thousand yen)	Number of Executives (members)
Directors (excluding Outside Directors)	267,653	7
Audit & Supervisory Board Members (excluding Outside Audit & Supervisory Board Members)	78,296	3
Outside Directors/ Audit & Supervisory Board Members	86,535	6

Officers whose consolidated remuneration exceeded 100 million yen

Name	Position	Company	Per company (thousand yen)	Total (thousand yen)
Koji Kakigi	Director	JFE Holdings	127,181	127,181
Yoshihisa Kitano	Director	JFE Holdings	9,000	126,340
	Director	JFE Steel	117,340	

Ratio of remuneration for each

Basic remuneration: fixed (%)	Annual bonus: linked to short-term performance (%)	Stock remuneration: linked to medium- to long-term performance (%)
60	20	20

■ Internal Control System

As of April 1, 2020

Internal control system			
Items		Number of companies (companies)	Number of people assigned (members)
Internal audit	Internal audit organization	—	164
Audit & Supervisory Board	Full-time Audit & Supervisory Board Members	28	34
	Dispatched Audit & Supervisory Board Members (part-time Audit & Supervisory Board member)	30	11

Cooperation of Audit & Supervisory Board members	
Items	Number of meeting held during FY2019
Accounting auditor	8
Internal Audit Department	6

Compliance（including Anti-corruption）

■ Whistleblowing

Items	Scope	Unit	FY2017	FY2018	FY2019
Cases handled by the Corporate Ethics Hotline	JFE Holdings and operating companies	Cases	89	80	101

Independent Assurance Statement

SUSA
Sustainability Accounting Co.,Ltd.

Independent Assurance Statement

October 5, 2020

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 the JFE Group's environmental performance indicators during the fiscal year 2019 reported in JFE Group CSR REPORT 2020, which indicate 52.9 million tons of CO_2 for Scope1, 7.6 million tons of CO_2 for Scope2 and 16.4 million tons of CO_2 for Scope3, 670 PJ of energy consumption, and 242 million tons 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

Constituent of the FTSE4Good Index Series and FTSE Blossom Japan Index

In July 2020, JFE Holdings was chosen as a constituent of the FTSE4Good Index Series and FTSE Blossom Japan Index, investment indexes developed by FTSE Russell, a subsidiary of the London Stock Exchange Group. The FTSE4Good Index Series selects companies that demonstrate strong environmental, social, and governance (ESG) practices. It is widely used in the creation or assessment of sustainable investment funds or other financial products. The FTSE Blossom Japan Index is an index designed to reflect the performance of Japanese companies that demonstrate strong ESG practices. It is an ESG investment index adopted by the GPIF.

FTSE4Good FTSE Blossom Japan

Evaluation by CDP 2019

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 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 responds to climate change and water security questionnaires every year. We made sure to disclose appropriate information for the CDP 2019 questionnaire, and as a result we received a high rating.
CDP 2019 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.

DBJ 環境格付 2015

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 eight 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.

Caterpillar Quality Assurance Certification

In 2020, JFE Steel West Japan Work (Kurashiki District) and JFE Shoji were named for four consecutive years as Gold Level SQEP suppliers for the Supplier Quality Excellence Process, a quality certification of the U.S.-based construction equipment manufacturer Caterpillar Inc. The program ranks suppliers for compliance with ISO 9001 standards and Caterpillar's own specifications and certifies the top firms as Platinum, Gold, Silver, or Bronze. Only a few companies in Japan have received Gold Level certification, and JFE Steel is the world's first blast furnace company to be certified.

Receiving the Gold certification plaque

Non-ESG External Evaluation

Digital Transformation Stocks 2020

JFE Holdings was selected as one of the Digital Transformation Stocks (DX Stocks) 2020 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 each of the previous five years, 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. With this stock selection renamed to DX Stocks to reflect its current focus on digital transformation for new corporate growth, the company has essentially been recognized for its efforts in this area for six consecutive years.

External Awards

Excellence Award of the 23rd Environmental Communication Awards

JFE Group CSR REPORT 2019, issued in September 2019, won the Excellence Award of the 23rd Environmental Communication Awards, hosted jointly by the Ministry of the Environment and Global Environmental Forum. This marks the first recognition for the JFE Group.

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 23rd awards, 180 reports were submitted for judgement under the environmental report category and 118 reports under the environmental management report category. The JFE Group was recognized as one of 25 excellent reports under the environmental reporting category. The award ceremony was held on Wednesday, February 19, 2020 at Shinagawa Prince Hotel.。

Please see the following for further details.

- JFE Group CSR REPORT 2019 receives Excellence Award of the 23rd Environmental Communication Awards (Japanese only)
  (https://www.jfe-holdings.co.jp/release/2020/02/200220.html)

JFE-METS Receives Grand Prize of the Minister of Economy, Trade and Industry for the 2019 Energy Conservation Grand Prize Award

Multi-site integrated energy network services, offered by JFE Engineering under the service brand JFE-METS, received the Grand Prize of the Minister of Economy, Trade and Industry under the Product and Business Model Category of the 2019 Energy Conservation Grand Prize Award, the highest-ranking award in this category. Instead of applying the conventional method for optimizing energy by site, JFE-METS offers an energy optimization service for collectively managing multiple sites by business unit, area, or other entity. The service enables comprehensive energy saving through the interchange of electricity within a business including remote sites. JFE Engineering takes responsibility for analyzing each customer's actual energy consumption and implementing and operating relevant equipment at each site to achieve overall optimization.

Please see the following for further details.

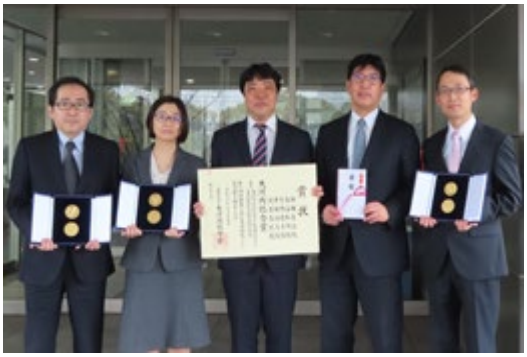
- JFE-METS is awarded Grand Prize of the Minister of Economy, Trade and Industry for the 2019 Energy Conservation Grand Prize Award for realizing energy saving through collective energy management of multiple sites (Japanese only) (https://www.jfe-eng.co.jp/news/2020/20200130.html)

External Awards for Research and Development

■ Awards for Technologies and Product Developments (FY2019)

	Prize/Award	Project	Sponsor
JFE Steel	The Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology (Prizes for Science and Technology, Development Category)	Development of high-strength, high-workability thin steel sheets using innovative micro system control technology	Ministry of Education, Culture, Sports, Science and Technology
	Japan Society for the Promotion of Machine Industry President's Award (Machine Promotion Award)	Development of the world's fastest temper mill	Japan Society for the Promotion of Machine Industry
	Okochi Memorial Prize	Development of assembled organ control-type brittle crack propagation arrest thick steel plate	Okochi Memorial Foundation
	Prize of the Chairman of ECCJ for Energy Conservation Best Practices at Workplaces, Energy Conservation Grand Prize Award	Energy saving by reducing heat loss during the use of molten iron transport container at steelworks	The Energy Conservation Center, Japan
	Prime Minister's Prize for Monozukuri Nippon Grand Award	Development of resource saving Si gradient magnetic material contributing to energy saving of electronic devices	Ministry of Economy, Trade and Industry
	Japan Institute of Invention and Innovation Chairperson's Award (National Commendation for Invention)	Invention of a magnetic steel sheet that facilitates miniaturization and higher efficiency electronic devices	Japan Institute of Invention and Innovation
	Derwent Top 100 Global Innovators 2018-19	JFE Steel's activities for intellectual properties	Clarivate Analytics
JFE Engineering	Grand Prize of Minister of Economy, Trade and Industry for Energy Conservation Grand Prize Award	J-METS: multiple-site integrated energy network service	The Energy Conservation Center, Japan
	Progress Award (Technology)	Establishment of boiler corrosion countermeasure technology and increased power generation at waste incineration facilities	The Japan Institute of Energy
	Prize of Director-General, Industrial Science and Technology Policy and Environment Bureau, METI, for Excellent Environmental Equipment Award	Fully automatic general waste incineration equipment using AI and data analysis technology	The Japan Society of Industrial Machinery Manufacturers

Japan Society for the Promotion of Machine Industry President's Award (Machine Promotion Award)



Okochi Memorial Prize

Monozukuri Nippon Grand Award (Prime Minister's Prize)

The 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. Long-term Vision and Targets

Your most creative and astonishing achievement this year is the disclosure of a long-term target for reducing CO_2 emissions. Your goals to work toward being carbon neutral within the JFE Group as soon as possible after 2050 and reduce CO_2 emissions in fiscal 2030 by 20% or more compared to fiscal 2013 in the steel business is an innovative commitment akin to one of the most advanced long-term targets in the global steel industry set up by ArcelorMittal. These are by far the most ambitious targets, unrivaled by any other Asian steel companies. Moreover, the targets were referred to in the Group's long-term vision: to demonstrate two qualities of sustainability-economic sustainability and environmental and social sustainability-and become a resilient enterprise capable of consistently delivering value over the long term. This is the first time the JFE Group has made any definitive statements on its long-term vision, demonstrating its management style of earnestly adapting to a sustainable society by clearly defining its long-term vision and targets.

2. Measures Regarding Gender Inequality

With regard to measures for addressing gender inequality, I should particularly mention JFE Holdings' achievement in appointing a female director in 2020, following the appointment of a female Audit & Supervisory Board member in 2019. As for the number of female managers, the group of employees expected to shore up the number of female executives in the future, JFE has updated its target to achieve a fivefold increase by 2025 compared to August 2014, since the previous goal of tripling the figure by 2020 had already been achieved in April 2019. It is said there is a significant correlation between appointment of female executives, a long-term concern for Japanese companies, and improvement in business performance. I feel that the JFE Group's steadfast efforts are gradually coming to fruition, and I have great expectations for future developments.

3. Quantifying KPIs

The Group has made solid progress in addressing the issue of quantifying KPIs as it reviewed some of the KPIs this fiscal year. In order to prepare for evaluating the achievement of initiatives, the Group also quantified evaluation standards, further improving the transparency of its information disclosure. For a major corporation made up of different groups of companies, I imagine it required significant courage to undertake this internal alignment to establish and publicly declare quantitative evaluation standards applicable to the activities of the organization. I believe the JFE Group's actions to take on this formidable task demonstrates its strong commitment to becoming a sustainably growing corporate enterprise.

4. Future Challenges

Disclosure of this report on your website will allow the accumulation of a vast amount of information in cyber space while also giving rise to the need for time and technique to search for necessary data. I advise you to make your website more user-friendly by creating links between different reports and reorganizing the structure of the site. Furthermore, the Group will need to create an effective internal system to adapt to the rising expectations across the world for compliance with human rights and environmental due diligence.

Mariko Kawaguchi
Specially appointed professor of
Graduate School of Social Design Studies,
Rikkyo University

This is my fourth year to offer comments on the JFE Group's report. These reports have given me the opportunity to observe the deepening of the Group's environmental strategy over time. In the context of all four reports, the creation of a TCFD scenario, presented in last year's edition, was an example of an advanced initiative by a Japanese corporation. While this year public concern has been focused on COVID-19, the Group has made a leap forward in its climate change initiative by establishing long-term targets, including reducing its CO_2 emissions by 20% by 2030 and being carbon neutral by 2050. Since blast furnaces use coal as a raw material and not for fuel, the complete phase-out of coal is virtually impossible without assuming a revolutionary innovation in the production process and a bold business conversion strategy. I respect this dramatic managerial decision. I also believe that management could not have come to this determination if the TCFD scenario established last year had not laid out a road map for managing decarbonization.

The seven key factors under 2°C and 4°C scenarios (decarbonization of iron and steelmaking process, increased needs for effective utilization of steel scrap, change in demand for automotive steel, etc., increase in demand for solutions to promote decarbonization, unstable raw materials procurement due to increased occurrence of climatic hazards, damage to production bases and offices caused by climatic hazards, and national resilience) identified in "JFE Group's Response to the TCFD" in this year's report indicate management's recognition of the Group's medium- to long-term risks and opportunities. These risks confront the global environment, industries, and society in a time of climate crisis and will serve as useful information to other entities. How will management be able to steer business operations, presuming that all these risks are indeed a matter of concern for many stakeholders? Furthermore, a road map for reducing CO_2 emissions and being carbon neutral provides convincing evidence for the bold decarbonization strategy mentioned above. The reports for coming years could become even more persuasive by emphasizing that the long-term strategy was based on the TCFD scenario.

While society calls for a green recovery as the COVID-19 crisis moves to the center of public concern, the climate crisis has certainly been exacerbated worldwide. The impact of natural disasters associated with hurricanes and typhoons of a massive scale, bushfires, and other events has intensified at an accelerating pace. I would hope the next report will upgrade your scenarios from 2°C and 4°C to 1.5°C. In this case, I feel you will need to shift toward strengthening resilience and actions for adapting to extraordinary weather events in addition to reinforcing your mitigation initiatives to be carbon neutral. Also, more specific actions are required for risks that are described in relatively abstract terms under the current 4°C scenario.

On the other hand, constructing resilient buildings and developing urban infrastructure can also be seen as an opportunity for the steel business. This year's report introduces various technologies and products applied to the Group's eco-friendly processes and products. However, it creates the impression of being a technology catalogue. Organizing this information by strategy to emphasize its relationship to corporate value could be more effective.

(Continued from the previous page.)

This year's report discloses at the outset social issues, risks, and opportunities within the value chain of the JFE Group as a whole and by business division. This is useful for understanding the Group's entire business. Especially for climate-related risks, the report clearly conveys the pressing worksite situation calling for urgent action in terms of both mitigation and adaptation. In contrast, the themes of social challenges, human rights, and workstyle felt like a list of keywords and lacked intensity. The importance of human rights issues is increasing across the supply chain, including the mining sites for iron ore and coal and marine transportation for these resources. In a recent marine accident, the crew is said to have steered a Japanese cargo ship off course to pick up a Wi-Fi signal, resulting in the ship running aground off Mauritius. I view this incident as demonstrating the importance of respecting human rights during long voyages. And I believe that respecting the human rights of workers at mines, the crew members of vessels, and harbor workers will emerge as an issue requiring increased attention from management.

Speaking of these issues as they relate to workers, I know you are doing what you can for female advancement in the Group, notwithstanding the fact that women represent only a small proportion of its employees. Unfortunately, I must say that you are still far behind the rest of the world in this matter. Promoting the gender diversity of the board is not for the sake of supporting women; it increases corporate value by broadening the understanding of management risks and opportunities. I expect to see further efforts regarding this matter. To some extent, the fact that the ratio of female employees remains low due to the characteristics of the industry is a challenge. It may be more practical to increase the ratio of female employees at the stage of hiring while also establishing a target to maintain that ratio through their career development from junior management to senior management and ultimately to executive officer. As a global entity, I also expect greater diversity in the nationality of Board of Directors members.

Finally, I would like to point out that the report explains the value of steel, industry trends, and eco-friendly technologies and can serve as a textbook for environmental action by the steel industry. One area for improvement would be to make it easier for readers to distinguish whether the activity is attributable to the industry as a whole or the company. One way to deal with this would be to separately present information regarding industry trends and steel as a subordinate design element.

Now that the report has clearly indicated your value chain, as a next step I would expect to see a Group-wide strategy for the engineering business, electric furnaces, and other factors that contribute to a circular economy. Steel is a predominant yet finite resource. Mines pose various environmental and social issues. I hope that the company's commitment to creating a circular economy is included in the next report in addition to decarbonization, which was mentioned in this year's report. I look forward to your business taking the lead in decarbonization, resilience, and the circular economy worldwide as well as in Japan.

Editorial Policy

Editorial Policy

This report provides stakeholders with information about the JFE Group's CSR activities and elicits feedback to support further enhancement of the company's activities and information disclosure. The 2020 report includes:

- Transition from a paper-based publication to disclosure of in-depth information through our corporate website to more effectively update information and keep it linked to other media
- Unification of quantitative data collected from the report as a set of ESG data
- Categorizing social issues, risks, opportunities, and initiatives associated with our value chain by each phase taking into account impact on stakeholders
- Evaluation of KPIs for material CSR issues based on performance results for FY2019 and the use of those results to review KPIs for FY2020
- Recognition of climate change issues as a vital managerial concern; formulation of the JFE Group medium- to long-term vision that includes targets for reducing CO_2 emissions.
- Enriched the disclosure of information addressing climate change risks and opportunities by changing composition in line with TCFD recommendations such as disclosure of scenario analysis

CSR Report Composition and Format

A comprehensive report on the JFE Group's CSR activities and quantitative ESG data

Scope of Report

Reporting Period

FY2019 (April 1, 2019 to March 31, 2020) Reports on some activities undertaken before or after this period are included.

Organizations Covered

The report mainly covers the activities of JFE Holdings, Inc. and its three operating companies: JFE Steel Corporation, JFE Engineering Corporation, and JFE Shoji Corporation, but also includes reports on activities of other companies in the JFE Group (398 companies, of which 321 are consolidated subsidiaries and 77 are equity-method affiliates). Quantitative information includes data from the following JFE Group's 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

* The data was collected as JFE Steel Group before FY2016.

[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 ALLIANCCE 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 and 2018

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: September 2020; PDF file: October 2020

(previous issue: October 2019; next issue: scheduled for October 2021)

Related Reports

The following information is available at ➤ http://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 Content Index

This report is prepared with reference to the GRI Sustainability Reporting Standards 2016/2018.

Note: We refer to JFE GROUP REPORT 2020 (Integrated Report), Securities Report from April 1, 2019 to March 31, 2020) and Corporate Governance Report as of June 21, 2020.

GRI 102: General Disclosures 2016

Disclosure		Pages	
		CSR Report	Other Reports
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): p.17-20
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. 187)	JFE GROUP REPORT (Integrated Report): pp.15-16, pp.31-32, pp.33-41, p.98
102-8	Information on employees and other workers	➤ Social Data (P. 187)	JFE GROUP REPORT (Integrated Report): p.96
102-9	Supply chain	➤ JFE Group Value Chain (P. 6)	-
102-10	Significant changes to the organization and its supply chain	Not applicable	-
102-11	Precautionary Principle or approach	➤ Environmental Management (P. 39) ➤ JFE Group's Response to the TCFD (P. 74) ➤ Risk Management (P. 161)	-

(Continued from the previous page.)

102-12	External initiatives	▸ Steel Industry Initiatives (P. 90) ▸ Biodiversity (P. 106) ▸ Human Rights (P. 135) ▸ Community (P. 138)	-
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. 6) ▸ Material CSR Issues (P. 22) ▸ JFE Group's Response to the TCFD (P. 74)	-
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 (including Anti-corruption) (P. 158)	JFE GROUP REPORT (Integrated Report): p.93
4. Governance			
102-18	Governance structure	▸ Corporate Governance (P. 149)	-
102-19	Delegating authority	▸ CSR Structure (P. 29)	-
102-20	Executive-level responsibility for economic, environmental, and social topics	▸ CSR Structure (P. 29)	-
102-21	Consulting stakeholders on economic, environmental, and social topics	▸ CSR Structure (P. 29) ▸ Compliance (including Anti-corruption) (P. 158)	-
102-22	Composition of the highest governance body and its committees	▸ Corporate Governance (P. 149)	JFE GROUP REPORT (Integrated Report): pp.83-84, pp.85-88
102-23	Chair of the highest governance body	-	Corporate Governance Report: p.7
102-24	Nominating and selecting the highest governance body	▸ Corporate Governance (P. 149)	JFE GROUP REPORT (Integrated Report): pp.86-88
102-25	Conflicts of interest	▸ Corporate Governance (P. 149)	Corporate Governance Report: p.2
102-26	Role of highest governance body in setting purpose, values, and strategy	-	-
102-27	Collective knowledge of highest governance body	-	-

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102-28	Evaluating the highest governance body's performance	➤ Corporate Governance (P. 149)	-
102-29	Identifying and managing economic, environmental, and social impacts	➤ CSR Structure (P. 29) ➤ Environmental Management (P. 39)	-
102-30	Effectiveness of risk management processes	➤ Risk Management (P. 161)	-
102-31	Review of economic, environmental, and social topics	➤ CSR Structure (P. 29)	-
102-32	Highest governance body's role in sustainability reporting	➤ CSR Structure (P. 29)	-
102-33	Communicating critical concerns	➤ Compliance (including Anti-corruption) (P. 158)	-
102-34	Nature and total number of critical concerns	➤ Compliance (including Anti-corruption) (P. 158)	-
102-35	Remuneration policies	➤ Corporate Governance (P. 149)	JFE GROUP REPORT (Integrated Report): pp.88-89
102-36	Process for determining remuneration	➤ Corporate Governance (P. 149)	JFE GROUP REPORT (Integrated Report): pp.88-89
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. 29)	-
102-41	Collective bargaining agreements	-	-
102-42	Identifying and selecting stakeholders	-	-
102-43	Approach to stakeholder engagement	➤ CSR Structure (P. 29)	-
102-44	Key topics and concerns raised	➤ Third-part Comments (P. 204)	-
6. Reporting practice			
102-45	Entities included in the consolidated financial statements	➤ Editorial Policy (P. 207)	-
102-46	Defining report content and topic Boundaries	➤ Editorial Policy (P. 207)	-
102-47	List of material topics	➤ Material CSR Issues (P. 22)	-

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102-48	Restatements of information	➤ Climate Change (P. 63) ➤ Environmental Data (P. 165)	-
102-49	Changes in reporting	➤ Editorial Policy (P. 207)	-
102-50	Reporting period	➤ Editorial Policy (P. 207)	-
102-51	Date of most recent report	➤ Editorial Policy (P. 207)	-
102-52	Reporting cycle	➤ Editorial Policy (P. 207)	-
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_er2020j.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. 197)	-

GRI103：Management Approach 2016

Disclosure		Pages	
		Report	Environmental Data Book
GRI- 103: Management Approach			
103-1	Explanation of the material topic and its Boundary	➤ Material CSR Issues (P. 22)	-
103-2	The management approach and its components	➤ Material CSR Issues (P. 22) ➤ CSR Structure (P. 29) ➤ Supply Chain Management (P. 37) ➤ Environmental Management (P. 39) ➤ Climate Change (P. 63) ➤ JFE Group's Response to the TCFD (P. 74) ➤ Prevention of Pollution (P. 95) ➤ Efficient Use of Resources (P. 100) ➤ Water Security (P. 103) ➤ Biodiversity (P. 106) ➤ Customer Responsibility (P. 111) ➤ Occupational Health and Safety (P. 117) ➤ Labor Standards (P. 124)	-
103-3	Evaluation of the management approach		-

GRI200: Economic topics

Disclosure		Pages	
		CSR Report	Other Reports
GRI- 201: Economic Performance 2016			
201-1	Direct economic value generated and distributed	➤ Environmental Management (P. 39) ➤ Community (P. 138)	Securities Report: pp.2-3 (Transition of Key Management Indicators, etc.), p.14 (Status of Employees), p.50 (Dividend Policy), p.84 (Consolidated Income Statement)
201-2	Financial implications and other risks and opportunities due to climate change	➤ JFE Group's Response to the TCFD (P. 74) ➤ Environmental Management (P. 39)	-
201-3	Defined benefit plan obligations and other retirement plans	-	Securities Report: p.127(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. 39) ➤ Community (P. 138)	-
203-2	Significant indirect economic impacts	➤ Message from the CEO (P. 1) ➤ JFE Group Value Chain (P. 6) ➤ Material CSR Issues (P. 22)	-
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 (including Anti-corruption) (P. 158)	-
205-3	Confirmed incidents of corruption and actions taken	-	-

(Continued from the previous page.)

GRI-206： Anti-competitive Behavior 2016			
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	-	-

GRI300: Environmental topics

Disclosure		Pages	
		CSR Report	Other Reports
GRI-301:Materials 2016			
301-1	Materials used by weight or volume	▸ Material Flow (P. 61) ▸ Environmental Data (P. 165)	-
301-2	Recycled input materials	▸ Material Flow (P. 61) ▸ Efficient Use of Resources (P. 100) ▸ Environmental Data (P. 165)	-
301-3	Reclaimed products and their packaging	▸ Material Flow (P. 61) ▸ Efficient Use of Resources (P. 100) ▸ Environmental Data (P. 165)	-
GRI-302：Energy 2016			
302-1	Energy consumption within	▸ Material Flow (P. 61) ▸ Climate Change (P. 63) ▸ Environmental Data (P. 165)	-
302-2	Energy consumption outside of the organization	-	-
302-3	Energy intensity	▸ Climate Change (P. 63) ▸ Environmental Data (P. 165)	-
302-4	Reduction of energy consumption	▸ Climate Change (P. 63) ▸ Environmental Data (P. 165)	-
302-5	Reductions in energy requirements of products and services	▸ Steel Industry Initiatives (P. 90)	-
GRI-303: Water 2018			
303-1	Interactions with water as a shared resources	▸ Water Security (P. 103)	-
303-2	Management of water dischargerelated impacts	▸ Prevention of Pollution (P. 95) ▸ Environmental Data (P. 165)	-
303-3	Water withdrawal	▸ Material Flow (P. 61) ▸ Water Security (P. 103) ▸ Environmental Data (P. 165)	-

(Continued from the previous page.)

303-4	Water discharge	▸ Material Flow (P. 61) ▸ Environmental Data (P. 165)	-
303-5	Water consumption	▸ Material Flow (P. 61) ▸ Water Security (P. 103) ▸ Environmental Data (P. 165)	-
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. 106)	-
304-3	Habitats protected or restored	-	-
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	-	-
GRI-305: Emissions 2016			
305-1	Direct (Scope 1) GHG emissions	▸ Material Flow (P. 61) ▸ Climate Change (P. 63) ▸ Environmental Data (P. 165)	-
305-2	Energy indirect (Scope 2) GHG emissions	▸ Material Flow (P. 61) ▸ Climate Change (P. 63) ▸ Environmental Data (P. 165)	-
305-3	Other indirect (Scope 3) GHG emissions	▸ Climate Change (P. 63) ▸ Environmental Data (P. 165)	-
305-4	GHG emissions intensity	▸ Climate Change (P. 63) ▸ Environmental Data (P. 165)	-
305-5	Reduction of GHG emissions	▸ Climate Change (P. 63) ▸ Environmental Data (P. 165)	-
305-6	Emissions of ozone-depleting substances (ODS)	-	-
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	▸ Material Flow (P. 61) ▸ Prevention of Pollution (P. 95) ▸ Environmental Data (P. 165)	-
GRI- 306: Effluents and Waste			
306-1	Water discharge by quality and destination	▸ Material Flow (P. 61) ▸ Environmental Data (P. 165)	-
306-2	Waste by type and disposal method	▸ Material Flow (P. 61) ▸ Efficient Use of Resources (P. 100) ▸ Environmental Data (P. 165)	-
306-3	Significant spills	Not applicable	-

(Continued from the previous page.)

306-4	Transport of hazardous waste	-	-
306-5	Water bodies affected by water discharges and/or runoff	-	-
GRI- 307: Environmental Compliance 2016			
307-1	Non-compliance with environmental laws and regulations	➤ Environmental Management (P. 39)	-
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	
		CSR Report	Other Reports
GRI- 401: Employment 2016			
401-1	New employee hires and employee turnover	➤ Labor Standards (P. 124) ➤ Social Data (P. 187)	-
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. 187)	-
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. 117)	-
403-2	Hazard identification, risk assessment, and incident investigation	➤ Occupational Health and Safety (P. 117)	-
403-3	Occupational health services	➤ Occupational Health and Safety (P. 117)	-

(Continued from the previous page.)

403-4	Worker participation, consultation, and communication on occupational health and safety	➤ Occupational Health and Safety (P. 117)	-
403-5	Worker training on occupational health and safety	➤ Occupational Health and Safety (P. 117)	-
403-6	Promotion of worker health	➤ Occupational Health and Safety (P. 117)	-
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	➤ Occupational Health and Safety (P. 117)	-
403-8	Workers covered by an occupational health and safety management system	-	-
403-9	Work-related injuries	➤ Social Data (P. 187)	-
403-10	Work-related ill health	➤ Occupational Health and Safety (P. 117)	-
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 (P. 124)	-
404-3	Percentage of employees receiving regular performance and career development reviews	-	-
GRI-405: Diversity and Equal Opportunity 2016			
405-1	Diversity of governance bodies and employees	➤ Labor Standards (P. 124) ➤ Social Data (P. 187)	-
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	-	-

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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. 135)	-
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. 138)	-

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413-2	Operations with significant actual and potential negative impacts on local communities	Not applicable	-
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. 6)	-
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	➤ Customer Responsibility (P. 111)	-
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. 207)
(2) Reporting period	➤ Editorial Policy (P. 207)
(3) Reporting standards and guidelines	➤ Editorial Policy (P. 207) ➤ Guideline Content Indices (P. 210)
(4) Overview of the environmental report	➤ Editorial Policy (P. 207)
2. Trends in key performance indicators	
(1) Trends in major performance indicators	➤ Material CSR Issues of the JFE Group (P. 22)

Chapter 2: Items to Be Included in Environmental Reporting	
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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. 29)
(2) Manager responsible for material environmental issues	➤ Environmental Management (P. 39) ➤ JFE Group's Response to the TCFD (P. 74)
(3) Roles of the board of directors and board of executive officers in the management of material environmental issues	➤ Environmental Management (P. 39) ➤ JFE Group's Response to the TCFD (P. 74)
3. Stakeholder Engagement	
(1) Corporate policies to stakeholders	➤ Environmental Management (P. 39)
(2) Overview of stakeholder engagement activities conducted in the reporting period	➤ JFE Group Value Chain (P. 6) ➤ Environmental Communication (P. 109) ➤ CSR Structure (P. 29)
4. Risk Management	
(1) Environment-related risk identification, assessment, and management processes	➤ CSR Structure (P. 29) ➤ JFE Group's Response to the TCFD (P. 74) ➤ Risk Management (P. 161)
(2) Positioning of the above processes in the JFE Group's overall risk management	➤ CSR Structure (P. 29) ➤ Risk Management (P. 161)

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5. Business Model	
(1) JFE Group business model	➤ JFE Group Value Chain (P. 6) JFE GROUP REPORT (Integrated Report): pp.17-20
6. Value Chain Management	
(1) Value chain overview	➤ JFE Group Value Chain (P. 6)
(2) Green procurement policy, objectives, and results	➤ Supply Chain Management (P. 37)
(3) Status of eco-friendly products and services	➤ Development and Provision of Eco-friendly Processes and Products (P. 46)
7. Long-term Vision	
(1) Long-term vision	➤ Message from the CEO (P. 1) ➤ Climate Change (P. 63) ➤ JFE Group's Response to the TCFD (P. 74)
(2) Time period covered by the long-term vision	➤ Message from the CEO (P. 1) ➤ Climate Change (P. 63) ➤ JFE Group's Response to the TCFD (P. 74)
(3) Reasons why that time period was selected	➤ Climate Change (P. 63) ➤ JFE Group's Response to the TCFD (P. 74)
8. Strategy	
(1) JFE Group business strategy for contributing to the achievement of a sustainable society	➤ Message from the CEO (P. 1) ➤ Material CSR Issues (P. 22) ➤ JFE Group's Response to the TCFD (P. 74) ➤ Steel Industry Initiatives (P. 90)
9. Methodology for Identifying Material Environmental Issues	
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(2) List of identified material environmental issues	➤ Material CSR Issues (P. 22) ➤ JFE Group's Response to the TCFD (P. 74)
(3) Reasons that the identified environmental issues were judged material	➤ Material CSR Issues (P. 22) ➤ JFE Group's Response to the TCFD (P. 74)
(4) Boundaries of the material environmental issues	➤ JFE Group Value Chain (P. 6) ➤ Material CSR Issues (P. 22) ➤ JFE Group's Response to the TCFD (P. 74)

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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. 6) ➤ Material CSR Issues (P. 22) ➤ JFE Group's Response to the TCFD (P. 74)
(2) Targets and results of policies/action plans based on performance indicators	➤ Material CSR Issues (P. 22) ➤ CSR Structure (P. 29)
(3) Methodologies used for calculating each performance indicator	➤ Material CSR Issues (P. 22)
(4) Aggregation scope of data for each performance indicator	➤ Material CSR Issues (P. 22) ➤ Editorial Policy (P. 207)
(5) Financial impact of risks and opportunities, and calculation methodologies if the financial impact is significant	➤ Environmental Management (P. 39) ➤ JFE Group's Response to the TCFD (P. 74) ➤ Environmental Data (P. 165)
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Reference: Major Environmental Issues and Their Performance Indicators	
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(1) Scope 1 emissions	➤ Material Flow (P. 61) ➤ Climate Change (P. 63) ➤ Environmental Data (P. 165)
(2) Scope 2 emissions	➤ Material Flow (P. 61) ➤ Climate Change (P. 63) ➤ Environmental Data (P. 165)
(3) Scope 3 emissions	➤ Climate Change (P. 63) ➤ Environmental Data (P. 165)
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(1) Greenhouse gas emission intensity	➤ Climate Change (P. 63) ➤ Environmental Data (P. 165)
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2. Water Resources	
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(3) Water discharge	➤ Material Flow (P. 61) ➤ Environmental Data (P. 165)
(4) Status of water stress	➤ Water Security (P. 103)
3. Biodiversity	
(1) Impact of business activities on biodiversity	➤ Biodiversity (P. 106)
(2) Status and extent of the dependency of the JFE Group's business activities on biodiversity	➤ Biodiversity (P. 106)
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5. Chemical Substances	
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(1) Water pollution load, emission concentration in emissions regulations	➤ Material Flow (P. 61) ➤ Prevention of Pollution (P. 95) ➤ Environmental Data (P. 165)
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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. 149) ➤ Risk Management (P. 161) ➤ Climate Change (JFE Group's Response to the TCFD : Governance) (P. 75)
	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	➤ JFE Group Value Chain (P. 6) ➤ Climate Change (The JFE Group's Medium- to Long-term Vision) (P. 63) ➤ Climate Change (JFE Group's Response to the TCFD : Strategies) (P. 76)
	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. 161) ➤ Environmental Management (P. 39) ➤ Climate Change (JFE Group's Response to the TCFD : Risk Management) (P. 87)
	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	

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【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	➤ Material CSR Issues (KPIs for Material CSR Issues) (P. 26) ➤ Climate Change (JFE Group's Response to the TCFD : Metrics and Targets) (P. 88)
	b. Disclose Scopes 1 and 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions and related risks	➤ Climate Change (CO_2 Emissions of the JFE Group) (P. 63) ➤ Environmental Data (P. 165)
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