

Message from the CEO

We are committed to building a firm position in the global market by moving swiftly and turning change into opportunity.

I am Koji Kakigi, appointed as Representative Director, President and CEO of JFE Holdings as of April 1, 2019. JFE's vision of "contributing to society with the world's most innovative technology" has served as our foundation, enabling us to maximize our highly refined technologies, human resources and other corporate resources for growth as we adapt to the changing times. Yet the sheer pace of change is expected to increase even more rapidly in the future.

We must become more adaptable to change to continue providing society with value by underpinning people's lives with our superior products and services geared to the needs of customers and society. One of my most important roles as CEO is to ensure we build systems that can actively cope with new changes. Allow me therefore to talk about our vision for the future and the action we will take to solve challenges in light of the business environment that faces us.

JFE Holdings, Inc.  
Representative Director,  
President and CEO

Koji Kakigi



Evolving business environment

Changing supply chains and intensifying global competition

Japan faces a decline in population due to its low birth rate and aging society, which will lead to stagnation in domestic demand over the long term. Yet on a global level the world population continues to climb and the economies of many emerging countries centered on Asia are expected to grow. A key issue going forward will be how we will tap into this global growth across the entire Group.

Last year, approximately 1.8 billion tons of steel was produced worldwide and the figure is expected to reach approximately 2.7 billion tons by 2050. Demand for steel will continue to increase on a global basis, driven by the growth of emerging countries, but I believe that global supply/demand and protective trade policies will be major causes for concern in the steel business.

Currently, almost half the world's crude steel is produced in China, but the Chinese government has reduced capacity in the last few years, producing some results. In the process, however, Chinese steel manufacturers have scrapped old equipment in inland production areas and instead are building a number of advanced blast-furnace-integrated steelworks

on the coast of China or in Southeast Asia. Such manufacturers may become powerful competitors to JFE, forcing us to prepare for even harsher global competition.

At the same time, protective trade, including U.S.-Chinese trade friction, may cause major changes to our current supply chain. JFE's steel materials, which are produced by combining various advanced technologies, are extremely difficult to manufacture and process, so a sudden fall in demand seems highly unlikely. For customers that procure steel materials to create components in Japan which are then assembled into products in China for export to the USA, shifting assembly out of China is an urgent issue, so moves to speed up local procurement are expected to accelerate. This may eventually result in the procurement of steel materials from local manufacturers. Such a change in the demand structure must be monitored very closely in light of the general trend toward greater local procurement of steel materials.

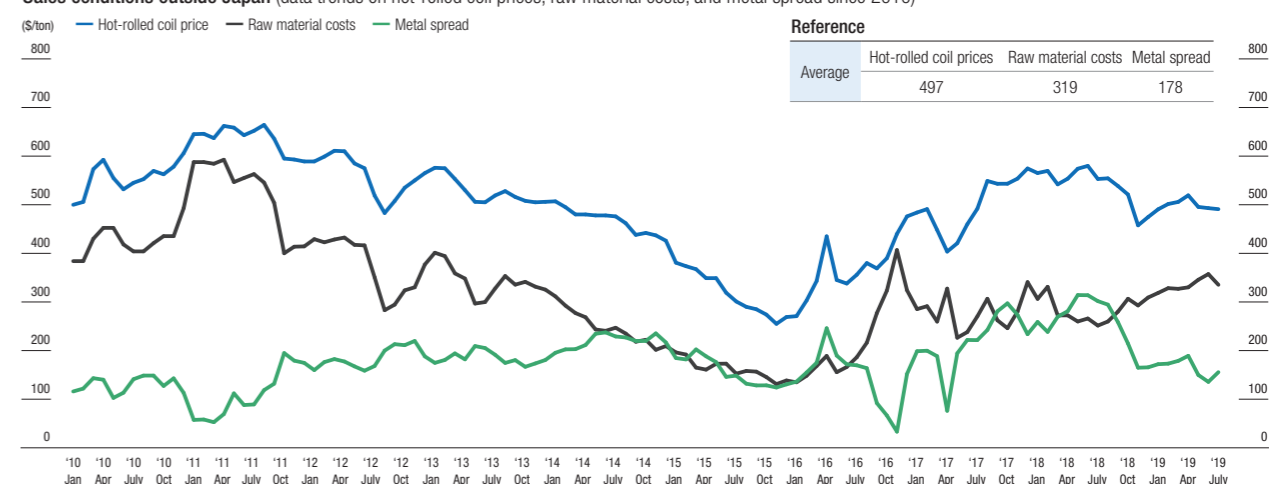
Steel, a globally traded commodity, is easily affected by international business fluctuations and raw materials market conditions in various industrial fields. It is inescapable that

these factors impinge on our earnings. Moreover, we expect even more dramatic transformations in several aspects of our business in the future. The pressure is increasing on us to help resolve issues such as environmental protection, resource and energy conservation and other environmental concerns common to all humanity. Such issues will exert a

powerful influence on corporate management in multiple ways.

To overcome these harsh changes in our business environment, our operating companies must maximize their respective competitive advantages while the JFE Group exerts its combined power on a broader scale.

Sales conditions outside Japan (data trends on hot-rolled coil prices, raw material costs, and metal spread since 2010)



Metal spread = hot-rolled coil prices - main raw material costs

\*Hot-rolled coil prices: the average price of 21 Chinese cities \*Main raw material costs: international spot market base for fine ore and hard coking coal

## Future vision

### Creating sustained economic value while resolving global issues

Steel is the core material of JFE's business. A wide range of our products, technologies and services spawned from steel underpin the daily lives of people as well as contribute to industrial and social development.

While there are many materials available in the world, each with their particular superior properties, steel is an essential element forming the foundation of civilized society. Abundant iron deposits not only allow mass production of steel at low supply costs. Steel is strong and easily processed, its environmental impact during manufacturing is lower than that of other materials, and it is very recyclable. It maintains its high quality while being recycled again and again into new products. No other material possesses all of these qualities.

In recent years, attention has focused on materials such as aluminum, carbon fiber and resin for their weight reduction, but comparisons with these features once again reveal the value of steel. Though steel may be partly replaced with other materials, it will continue to underpin our everyday lives and serve as an indispensable material for the development of industry and society.

**Our mission is to manufacture—with minimal environmental impact—high-quality steel offering superior properties and to sustainably and stably provide products and solutions employing world-class technologies, including engineering technologies, to customers through sales networks built on relationships of trust. This is how we support people's lives and contribute to the development of society.**

**Every JFE employee is committed to building a strong-willed company able to comply with rapidly changing needs over the decades, leveraging the technologies, service networks, human and other resources we have developed over many years. I fully believe that JFE ultimately must provide sustainable value over the long run by flexibly adapting to change—no matter how great—in its business environment.**

This goal may sound obvious, yet it is no easy thing to adapt to rapid changes while steadily creating value to meet customer needs. To achieve this, we need to combine two types of sustainability.

The first is **creating economic value through sustainable growth** (economic sustainability). To generate new corporate value and contribute to people's lives and the development of industry and society, the company must continuously invest in each operating company's equipment, human resources, R&D operations, environmental conservation, etc., while also steadily securing funds to return profits to shareholders, remunerate employees and pay taxes. We must enhance our

**earning power** (profitability) by adapting to the rapidly changing business environment and accurately monitoring diversifying needs and market trends.

The second type of necessary sustainability is **making sustainable efforts to resolve problems in society through business** (environmental and societal sustainability). As our corporate vision states, we wish to contribute solutions through our business. While this opens up business opportunities, it also exposes our business to various environmental and societal risks. Properly managing these risks is unavoidable for sustainable development.

The blast-furnace steel industry uses coal for the reduction of iron ore. Present-day manufacturing technology cannot avoid emitting CO<sub>2</sub>, so environmental measures, such as using advanced technology to conserve energy and reduce CO<sub>2</sub>, are at the core of our business. We must also secure and train talented human resources, ensure safety and disaster prevention, and respect human rights throughout our supply chain. Furthermore, the fact that we operate large facilities requires us to seek prosperous coexistence with our local communities. All of these are indispensable themes for sustainable growth.



## Realizing our future vision

The entire JFE Group is making a concerted effort to achieve our vision, but there are numerous obstacles to be overcome. I will enumerate the main issues and how we intend to solve them.

### Economic value through sustainable growth (Securing stable profitability)

A business must secure funds by creating economic value through its operations to maintain necessary investments and appropriately return profits to shareholders. As our financial target is set at an ROE of 10% or higher and total equity of approximately 2 trillion yen, this means we must have the profitability to steadily secure annual profits of around 200 billion yen. This ROE target is something we must achieve not just during our current Medium-term Business Plan but also beyond this period and into the future. We need to generate stable profits at a sufficient level by enhancing our earning power (profitability and ability to generate cash flow) **to gain a steady flow of revenue even in a harsh business environment.**

To look at this in greater detail, I will focus on the steel business, the core of our Group's operations.

Profit in the steel business is generated from sales (production) volume multiplied by profit margin, meaning that we have to secure a steady volume while expanding our margin.

To secure a steady volume requires 1) **highly stable production of high-quality products for on-time delivery to customers**, and 2) **accurate identification of needs in growth areas (either business fields or geographic regions) to capture demand.**

To expand margins, we need to lower manufacturing costs while raising sale prices. This means we need to create **differentiation by rolling out products that offer a high level of technological advantage** and also **by strengthening cost competitiveness in the mass market and other segments and pursuing sales strategies suited to environmental changes.**

While growth in demand for steel materials in Japan will be sluggish, we can expect demand to expand in emerging countries, particularly in Asia. We have cemented firm relationships of trust with many customers both inside and outside Japan through our steel and trading businesses. To secure a steady sales volume, we will firmly maintain and build on these relationships, while also meeting new infrastructure needs in rapidly growing emerging countries and the automobile field, which is undergoing a once-in-a-century technological transformation.

To make this happen, **we will strengthen our manufacturing capabilities in Japan to ensure greater stability in**

**production, and then leverage this as a base to secure the profits required for investment. Additionally, by investing profits to expand overseas, and also by developing product and manufacturing technologies for increased sales of highly value-added products, we expect to secure a steady sales volume as we also expanding our margin of profit.**

Our engineering business is actively expanding its operation and maintenance of constructed plants, in addition to its current EPC (engineering, procurement and construction) business, endeavoring to strengthen its base to secure steady profits over the long term.

### Stable production through strengthened manufacturing

To achieve stable production, we are enhancing the capabilities of our manufacturing bases in Japan. The key points for this are equipment and people.

Japan's blast furnace steel industry, which established integrated steelworks after the Second World War, has been operating much of its existing equipment for several decades, requiring upgrading. If no action is taken, equipment deterioration will lead to lower productivity, increased costs and operational problems, thereby destabilizing production and lowering cost competitiveness.

JFE Steel is investing 1.8 trillion yen in mostly capital investment during the six years of its fifth and sixth medium-term business plan, aiming to establish a manufacturing base in Japan capable of sustainably ensuring stable production and cost competitiveness over the next several decades. Approximately half of the investment is for upgrading aged equipment and systems, but this involves more than just replacement because newer equipment also will be upgraded to incorporate advanced functions and technologies to boost productivity, enhance operations and reduce environmental impact. The other half of the investment is for strategic rationalization aimed at increasing capacity via new continuous casting machines and sintering machines at our mainstay West Japan Works, and increasing our manufacturing productivity for highly value-added products, which are difficult to manufacture. At the same time, we also will invest to enhance our cost competitiveness in offering steel materials of medium quality or higher at lower prices for the mass-market segment to secure sales volume. Our plan is to thoroughly reduce expenses, ensure the world's highest level of cost competitiveness and firmly raise profits in the global market inclusive of our mass-market products.



These endeavors also tie in with our people. The training of and transfer of skills to younger workers as part of the age shift in our workforce is already under way. But this is not enough in itself, so we are also building technology infrastructure not dependent on personal skills or individual intuition, experience or judgment. Making use of the latest ICT, we are working to fully automate certain operations and mechanize certain skills requiring special experience, such as temperature control. In the engineering business, we are also developing and utilizing advanced technologies for interactive operational-support systems. These efforts are both huge challenges and great growth opportunities for our engineers.

While these initiatives require expenses in the short term, they will be implemented resolutely to create sustainable value. Over the next few years, our intention is to focus on building and completing a solid foundation to cement our position as a competitive company worldwide.

See page 35 for details on strengthening our manufacturing capabilities in the steel business.

Sales strategies suited to change

We are committed to implementing sales strategies centered on a technologically advanced global supply system that enables us to respond flexibly to changes in demand structure, customer needs and so on.

Among steel manufacturing costs, those for iron ore and coking coal have a particularly big impact on profit. In recent years, the markets for raw materials have once again become increasingly unstable. Costs for auxiliary raw materials, general materials and logistics have risen to very high levels,

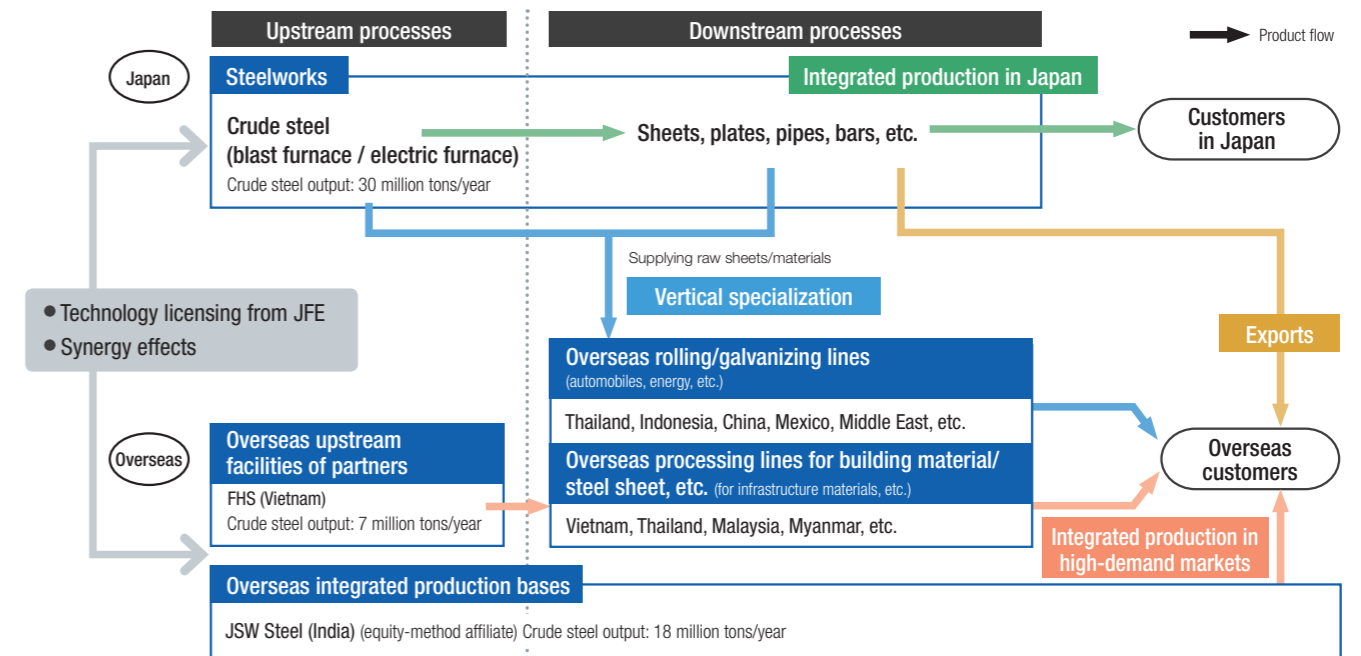
placing pressure on profit. We are developing technology to use lower-priced raw materials and also are leveraging our JFE Shoji Trade network for more stable, lower-cost procurements, although covering all cost rises unilaterally will be difficult. Implementing sales strategies and providing new value to customers incurs significant costs. We work to reduce costs as far as possible internally, but we also set sales prices that reflect the cost of providing products of value, which helps to ensure our business sustainability.

Investment in growth for overseas expansion

To maintain long-term growth, we plan to steadily grasp demand centered on emerging countries and also respond to the shift to local procurement of steel materials. The entire Group is engaged in transforming the JFE supply chain and enhancing the JFE brand, including by making full use of JFE Shoji Trade networks.

Our strategy is divided into two parts. For highly value-added products used in automotive steel, we are improving the vertical specialization of our production system. We manufacture steel in Japan, galvanize and process it overseas and then deliver it to customers. In galvanizing lines for automotive steel sheets, we plan to start commercial manufacturing in Mexico in FY2019. Al Gharbia Pipe Company of the UAE, which processes high-quality plates into line pipes near high-demand markets, will work to expand our supply of high-class steel materials for energy. We will continue to enhance our production systems for supplying high-class steel materials globally to a wide range of customers, including Japanese manufacturers.

Global steel supply strategy



Another strategy is to enhance our infrastructure-development business in emerging countries centered on Southeast Asia. The demand in this field is strong and expected to grow. For added competitiveness, we are increasing our local procurement of steel materials. Steel materials not from JFE Steel, such as those from our capital affiliate FHS in Vietnam, are processed into construction material products at JFE processing companies in Vietnam, Myanmar or elsewhere. By establishing this integrated production system in high-demand markets, we intend to secure cost competitiveness. At the same time, bases in Japan will specialize in highly value-added products to maximize profit.

In India, which has much hidden potential for growth, we invested as early as 2009 in steel manufacturer JSW Steel and then provided technology support for 10 years, enabling JSW Steel become a top-class company in India. JSW Steel is expected to grow further and contribute to JFE's profit as an equity-method affiliate.

Concerning infrastructure development in emerging countries, JFE Engineering is foreseen expanding its global business centering on Southeast Asia, where it will actively develop general and environmental infrastructure by leveraging expertise in waste treatment, water processing, power generation and bridge building.

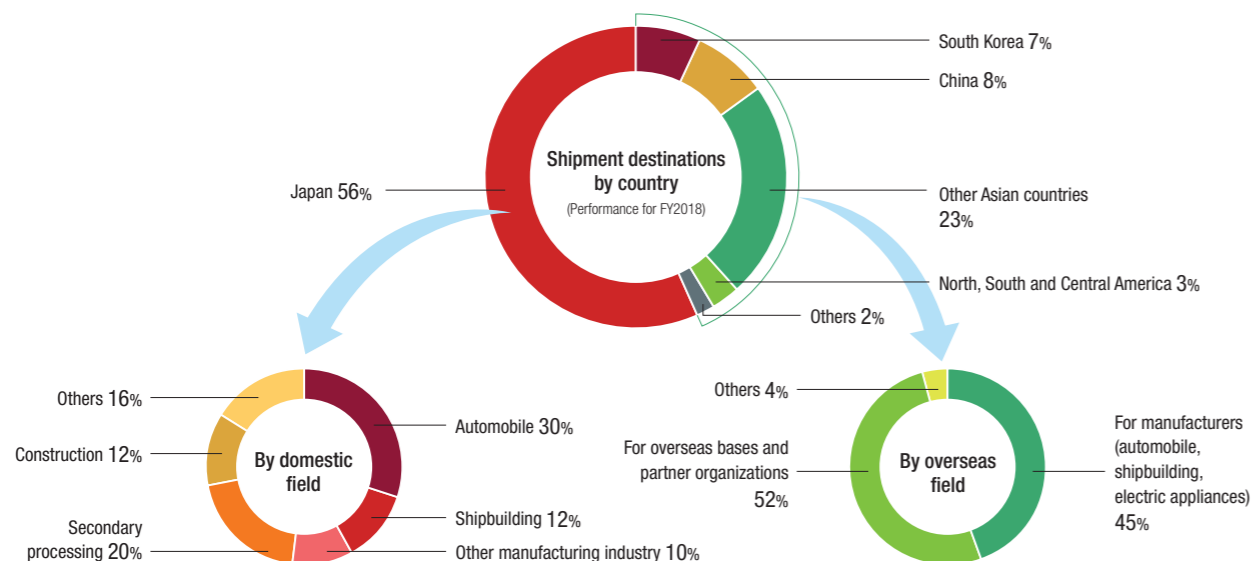
Technologies to unleash steel's diversity

One of our mainstays is world-leading technological development. Although steel is blessed with the diversity to be shaped into many different forms, it still has untapped potential. Indeed, it is thought to have many unexplored properties. For us to strategically prosper amid intense global competition, we must maximize the diversity of steel through our robust technological capabilities and continue to provide customers with highly value-added products that competitors in China, South Korea and elsewhere cannot equal.

In the automotive industry, now on the verge of a major transformation, the overarching theme is adapting to technological innovation for electric vehicles (EV) and lighter cars. To offer more highly value-added products, we will focus more sharply on exact customer needs, improve our cutting-edge technological capabilities and actively pursue new solutions. Only a limited number of companies worldwide can manufacture products such as high-tensile steel for automobile bodies, electrical steel sheets for EV motors, construction materials for skyscrapers or steel materials for large bridges, all of which demand the highest levels of technology. These are among the areas where JFE offers high-level technological superiority. Going forward, we are confident that we can secure firm profit margins in global markets by raising our proportion of these highly value-added products.

See page 41 for more details on our strategies in the automobile field.

Main steel business customers (by shipment destinations/fields)



## Sustainable efforts to resolve issues through business

Amid growing global awareness of environmental protection, ESG compliance, SDGs achievement and other issues, taking action in these areas has become vitally important. JFE's Board of Directors deliberates and oversees important matters relating to promoting ESG throughout the Group, including by setting KPIs.

We are presently pursuing the "Three Ecos" as part of the Japan Iron and Steel Federation's Low-Carbon Society Implementation Plan, and the industry as a whole is working to reduce CO<sub>2</sub>. In addition, last year we formulated a long-term vision for climate-change mitigation through the year 2100. Steel and other industries are working to develop extra-innovative technologies that are totally divergent from previous approaches, such as the use of new reducing agents like ferro-coke, hydrogen-reduction steelmaking, CO<sub>2</sub> storing and utilization technologies, and power sources with zero-carbon emissions.

Japan's blast furnace manufacturers have maintained the lowest energy consumption per ton among worldwide production. However, in recent times electric furnaces have gained attention for recycling scrap, leading some to doubt the sustainability of the blast furnace business. But the continuing expansion of global demand for steel can only be met by increasing the number of blast and electric furnaces. Steel materials that eventually become scrap are first created from iron ore. As the volume of scrap increases with the growth of the global economy, climate-change issues will have to be addressed in all systems, including through new techniques to utilize scrap.

In May 2019, JFE became a signatory to the Task Force on Climate-related Financial Disclosures (TCFD) and consequently began analyzing global-warming risks. The results are

included in this report. JFE is committed to appropriate disclosure regarding activities related to climate change.

See page 59 for more details of the scenario analysis.

In engineering business, we are working to minimize impact by developing environmental infrastructure, such as using biomass and waste for power generation as well as social infrastructure such as construction of bridges. In trading business, we are expanding biomass fuel sales and scrap trading. Business in these areas will be expanded in emerging countries currently centered on Southeast Asia but later other regions as well.

Environmental challenges can be viewed not only as risks but also as major opportunities for sustainable growth, for which we aim to leverage JFE's powerful technological capabilities and thereby contribute to the lives of people as well as the overall economy.

Another challenge is to help solve issues that are impacting global society. The key priorities in our internal operations are securing talented human resources and creating rewarding work environments.

Though steelworks once might have been considered workplaces primarily for men, much improvement has been made to offer women-friendly environments. Female employees have been actively employed in our manufacturing frontlines for about five years and now exceed 500. We are developing jigs and equipment to reduce the workload on women, but we also have found that women can significantly lessen the burden on older male workers, leading to improved workplaces. The company also sets up onsite childcare facilities in each region to allow employees with children to work with peace of mind.

Amid increasing labor fluidity in recent years, JFE is actively employing foreign workers and mid-career hires. To enhance our corporate value, it is extremely important to create

environments where human resources representing diverse values and skills can flourish.

Similarly, operating steelworks with massive equipment would not be possible without the understanding of local people, so we are committed to coexisting and prospering with

our regional communities. To maintain good communication with members of our local communities and to develop together sustainably, we strive to provide employment and regional economic stimulation.

See pages 57 to 66 for our initiatives on environmental and social issues.

## Swift and active response to change Corporate culture for accepting challenges fearlessly

To implement the many initiatives explained in this report, it is essential to maintain a corporate culture that encourages people to take on challenges. My impression is that we have allowed the challenging spirit component of our corporate values—Challenging Spirit, Flexibility & Sincerity—to gradually weaken with the growing scale of our business. It will be up to the management team to remind all employees that in an age of rapid change, we must have a corporate culture that encourages people to willingly accept challenges and a corporate DNA that is rich in such spirit and the value of freedom. To give one example, JFE Steel has devolved specific authorities and expanded the scope of discretion for each

department and steelworks. Success is achieved by taking on challenges, experiencing failure and then drawing on lessons learned to move forward once again. JFE management is working to create an atmosphere in which a degree of failure is tolerated and employees are encouraged to try again.

To build a corporate culture resilient to change, JFE is striving to better anticipate change and react more swiftly. Instead of passively accepting needs before us, we are encouraging employees to constantly take the initiative to ask how they can contribute to the company through change. We also are encouraging them to face problems and propose solutions with confidence.

## Engaging diverse outside executives

A corporate governance system that is fair, just and transparent helps to underpin corporate value. JFE has three Outside Directors, amounting to at least a third of total Directors, and three Outside Audit & Supervisory Board Members. These six Outside Directors and Audit & Supervisory Board Members comprise four persons with experience in business management, one with experience in

academia and a lawyer. Their diverse backgrounds help to facilitate extremely robust exchanges of opinions. For further diversity, we appointed a full-time female Audit & Supervisory Board Member in June 2019. We are working to realize ever-more effective governance by taking advantage of new perspectives within our JFE team.

See pages 67 to 82 for the effectiveness in the company's governance system.

## To all our stakeholders

FY2018 saw a major fall in our production due to the shutdown of a blast furnace, the core of steelmaking operations. Especially in light of our Sixth Medium-term Business Plan's call for strengthened manufacturing capabilities, we have treated the shutdown as a very serious matter. We have already implemented permanent new measures incorporating advanced IT to prevent a recurrence. As part of our new leap forward, we are sharing the lessons learned throughout the Group to establish an organizational structure void of major incidents.

The many initiatives we are undertaking, including the strengthening of our manufacturing capabilities, must be implemented with great effectiveness to ensure that we realize our future vision. By doing so, we expect to put JFE in a strong position as a globally competitive company.

We hope for the continued understanding and support of our stakeholders as we strive to create sustainable value over the long term.

