

Leveraging our manufacturing power to open up new horizons

Under the Sixth Medium-term Business Plan, we are currently undertaking capital investments totaling 1 trillion yen over 3 years (IFRS). By establishing leading-edge facilities through renovation and new production processes utilizing advanced AI/IoT, the company aims to stabilize facility operation, increase production efficiency, reinforce cost competitiveness and realize the stable production of products with high added value. Maximized manufacturing capabilities will enable JFE Steel to triumph against global competition and ensure a solid earnings base for the future.

Converter (Fukuyama)

Expanding the engineering business that “Ni·na·u^{*}” the foundations for life, from planning to operation.

The geothermal power plant in Matsuo-Hachimantai constructed by JFE Engineering Corporation has started full-scale operations. JFE Engineering has participated in the project from the survey stage, and remains responsible for the construction of the entire set of ground facilities including steam production facilities and power generation facilities, while engaging in operations management as an investor. The generated electricity is supplied to local customers via Urban Energy Corporation, a new electric power company wholly owned by JFE Engineering. We aim to expand a stable source of earnings by proposing integrated services that cover business planning to management.

*Geothermal power plant in Matsuo-Hachimantai (Iwate Prefecture)

*“Ni·na·u” is a Japanese word meaning supporting and remaining responsible. We aim to provide solutions with our engineering and manufacturing know-how.



JFE Steel JFE Engineering JFE Shoji Trade Japan Marine United

Developing steel processing centers globally with a focus on Asia

Every day we strive to improve our technology and quality with a great sense of pride in the important role of connecting each JFE Group's steel-works with customers.

In 2010, we established the Steel Alliance Service Center in Thailand to process steel materials for automotive steel sheets. National staff, who initially had no experience, have become reliable on-site employees. They are the power behind the scene supporting the frontline of our business.

National staff at Steel Alliance Service Center

JFE Steel

JFE Engineering

JFE Shoji Trade

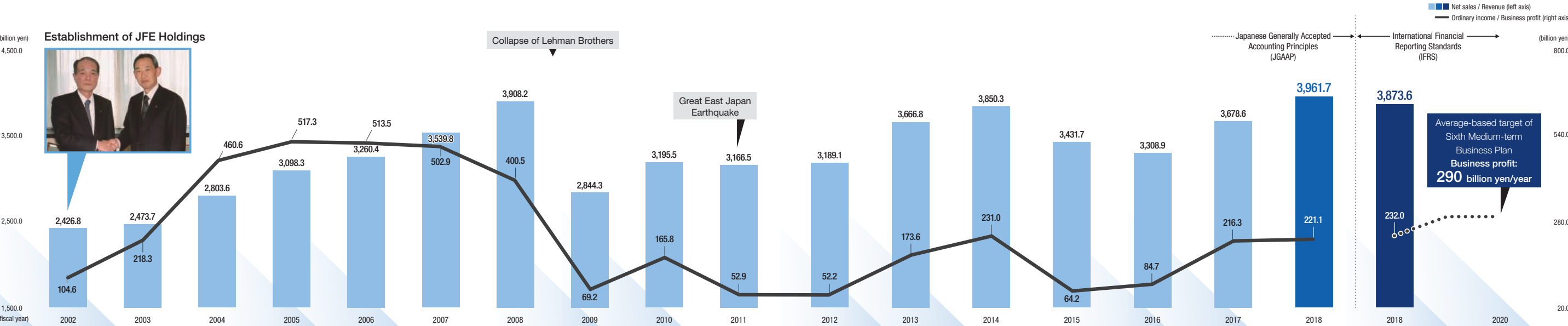
Japan Marine United

Meeting all needs using the latest environmental and energy-saving technologies

This Suezmax tanker, developed by Japan Marine United after the merger, is the largest crude oil carrier that can transit the Suez Canal. Born out of a combination of long-amassed expertise and cutting-edge technologies in tanker development, this next-generation Suezmax tanker is energy efficient and environmentally friendly, and is optimally designed to satisfy the entry conditions of the world's major ports and meet the current mainstream market requirements.

Suezmax tanker PATRIOTIC

Meeting Challenges throughout JFE's History



First Medium-term Business Plan (2003-2005)

Realizing our merger's full potential

The primary aim behind the establishment of JFE was to secure stable profitability early on and to strengthen its business foundation through active investment and financing. We consolidated facilities, reorganized and integrated Group companies, formed an optimal production system and strengthened the competitiveness of our core businesses in steel and engineering.

Second Medium-term Business Plan (2006-2008)

Expanding high-value-added products

JFE shifted to establishing a highly profitable business structure based on the production and sale of high-quality, high-value-added products and the provision of sophisticated services. We also invested actively to establish systems for stable production and expanded sales of high-value-added products.

Third Medium-term Business Plan (2009-2011)

Targeting future-oriented technological development

Despite a harsh business environment brought on by events including the collapse of Lehman Brothers in 2008 and the Great East Japan Earthquake in 2011, we pursued development of innovative technologies to accelerate our leap forward into the future, with a focus on envisioned developments in the following 10 years. We also reinforced our corporate structure to increase profitability as the No.1 supplier of high-value-added products.

Fourth Medium-term Business Plan (2012-2014)

Expanding into growing markets overseas

We further strengthened our profit base for growth by investing overseas and developing innovative new products. Corporate resources were allocated intensively in emerging markets where significant growth was expected over the medium- to long-term. We also reinforced production abroad and strengthened overseas sales and technical functions for further growth.

Fifth Medium-term Business Plan (2015-2017)

Capturing global demand to the fullest extent

We formulated a manufacturing and sales system to maximize opportunities for capturing demand in Japan stemming from government initiatives to upgrade disaster resilience and prepare for the Olympic and Paralympic Games in 2020. Overseas, we focused on capturing demand related to infrastructure reinforcement in emerging countries and initiatives for energy savings and environmental protection. Also, we continued to invest in new business in fields and geographic regions showing strong potential for future growth.

Sixth Medium-term Business Plan (2018-2020)

Boosting competitiveness with advanced technology

Our current focus is strengthening competitiveness through the application of data science and other advanced technologies to meet sophisticated and diversifying needs throughout society. Having made sustainable societies one of our priorities, we are pursuing a number of environmental, social and governance (ESG) initiatives, including environmental protection, development of human resources and establishment of a governance system.

Overseas Business

December 2003 ■ Established Guangzhou JFE Steel Sheet Co., Ltd.

August 2004 ■ Basic agreement concluded with BHP Billiton, an Australian mining company, on the establishment of a joint venture for iron ore development

Others

September 2002 ■ Established JFE Holdings, Inc.

April 2003 ■ Established operating companies
Steel business: JFE Steel Corporation
Engineering business: JFE Engineering Corporation
Urban development business: JFE Urban Development Corporation (merged into JFE Steel Corporation in 2011)
LSI business: Kawasaki Microelectronics, Inc. (sold to MegaChips Corporation in 2012)
R&D operations: JFE R&D Corporation (consolidated with JFE Steel in 2009)

April 2004 ■ Started operation of Fukuyama Recycle Power Co., Ltd.

Overseas Business

March 2007 ■ Basic agreement concluded on the cold rolling mill project in Guangzhou, China (new construction of cold rolling line (PL-TCM), continuous annealing line (CAL), and second continuous galvanizing line (2CGL))

January 2009 ■ Urban environmental plants expanded overseas, and received the first order from China in Qingdao

Others

September 2006 ■ Started plant tours for shareholders

January 2007 ■ Construction of APR (waste plastic pulverization plant)

March 2008 ■ Universal Shipbuilding Corporation became an operating company of JFE Holdings

Overseas Business

November 2009 ■ Strategic collaboration agreement concluded with JSW in India (capital participation and technical cooperation agreement concluded in July 2010)

June 2010 ■ Construction of SkyPark in Singapore completed

Others

July 2010 ■ Delivery of steel pipes for Tokyo Skytree completed

November 2010 ■ Number of participants in plant tours for shareholders reached 10,000

May 2011 ■ Coral spawning observed on "Marine Blocks" (artificial base blocks for seaweed bed and coral reefs made of iron-steel slag) in Miyako Island

Overseas Business

June 2013 ■ Decision reached on construction of Indonesia's first zinc-coated plating line for automobiles in Bekasi, West Java

November 2013 ■ Opening ceremony held for JFE Steel Galvanizing (Thailand) Ltd.

December 2014 ■ Agreement reached on acquisition of U.S. pipe distributor Kelly Pipe Co., LLC

March 2015 ■ Decision reached on establishment of joint venture company to manufacture and sell large-diameter welded steel pipes in Abu Dhabi, UAE (Established May 2015)

Others

October 2012 ■ JFE Shoji Trade Corporation became an operating company of JFE Holdings, Inc.

January 2013 ■ Japan Marine United Corporation established

September 2014 ■ Started remote assistance for urban environmental plants in each region

Overseas Business

September 2015 ■ Contract concluded on participation in integrated steelworks project in Vietnam

April 2016 ■ Groundbreaking ceremony held at the planned construction site of the large-diameter welded steel pipe plant in Abu Dhabi, UAE

June 2016 ■ Decision reached on joint venture for automotive steel sheets in Mexico with Nucor Corporation

March 2017 ■ Joint venture for steel powder business with China BaoWu Steel Group Corporation Limited established

April 2017 ■ Started developing Byerwen mine in Australia

October 2017 ■ Zinc-coated plating and colored sheets operations for construction materials launched in Myanmar

Others

March 2016 ■ Verification tests on waste collection through waste-to-energy power generation started with Kawasaki City

April 2017 ■ Delivered the first ship, "SUNFLOWER FURANO", a large passenger/car ferry

October 2017 ■ Kesenuma Oshima Bridge completed

Overseas Business

June 2019 ■ Australian Commonwealth Scientific and Industrial Research Organization (CSIRO) agreed to collaborate on joint research activities in characterization and agglomeration techniques for ironmaking raw materials (iron ore and coal)

Others

March 2018 ■ Global Remote Center established in Yokohama Head Office

June 2018 ■ JFE Welding Research Alliance Laboratories established in Joining and Welding Research Institute, Osaka University

November 2018 ■ Started operation of AI-utilizing tool "Pla'cello"

March 2019 ■ Adopted control failure recovery support system utilizing IBM's Watson in all manufacturing lines

July 2019 ■ JFE East Japan Baseball Team crowned the winner of the 90th Intercity Baseball Tournament

(Photo: The Mainichi Newspapers Co., Ltd)

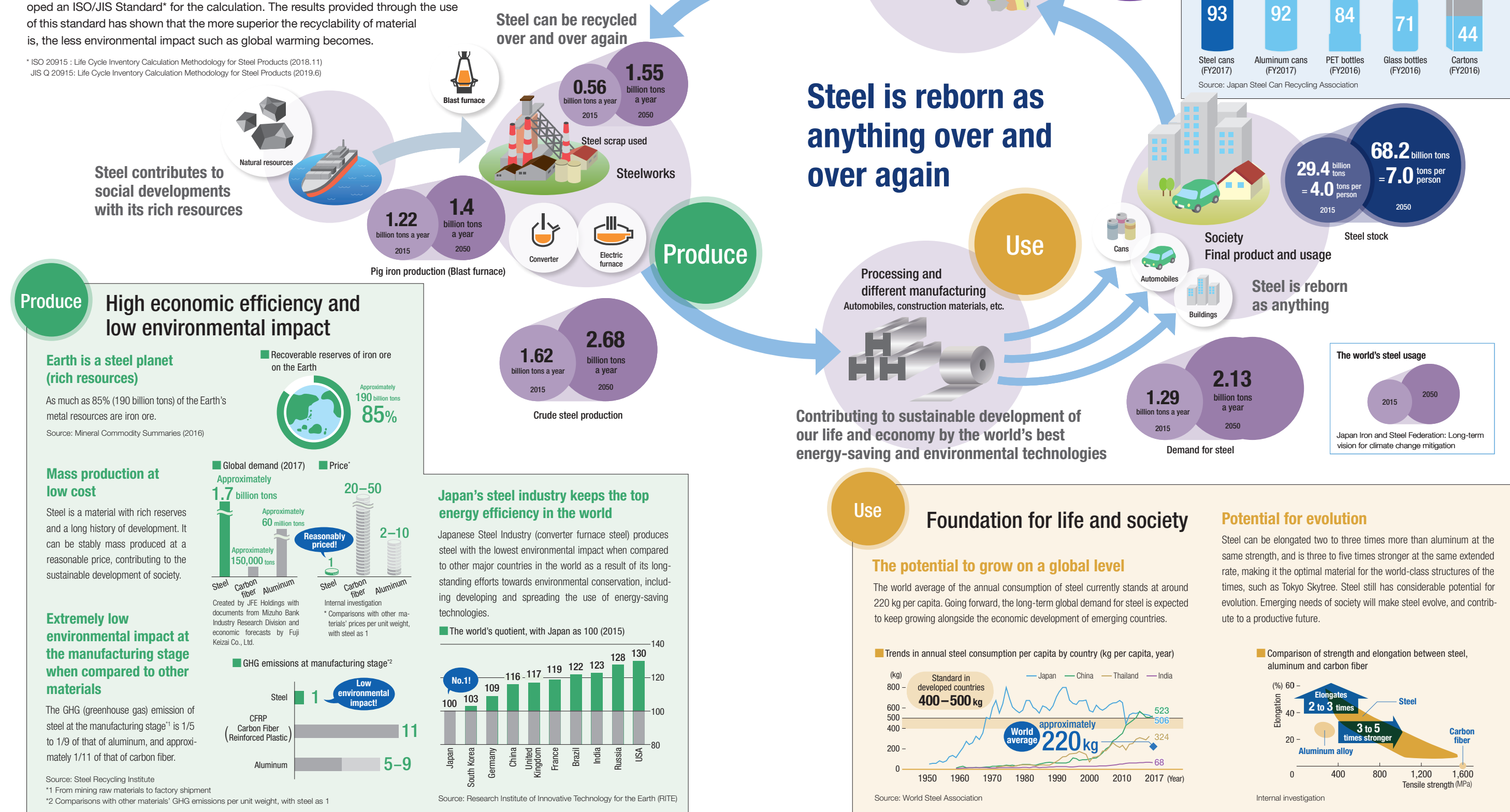
The Value of Steel

Since there are rich reserves of steel, which composes approximately 30% of Earth's mass, it can also be mass produced at low cost. Steel has an extremely low impact on the environment at the manufacturing stage when compared to other materials, and has an excellent recyclability. Steel with the low environmental impact is reborn as anything over and over again (closed-loop recycling), contributing to the sustainable development of our society.

Steel's LCA (Life Cycle Assessment)

Steel establishes a highly sophisticated value chain of Produce-Use-Recycle thanks to its excellent recyclability, and is reborn as anything over and over again. Therefore, it is important to evaluate steel's environmental impact by encompassing the entire life cycle including recycling. JFE Steel participated in the initiative to quantify the lifecycle environmental impact of steel products, which is led by the Japan Iron and Steel Federation, as one of the core members, and developed an ISO/JIS Standard* for the calculation. The results provided through the use of this standard has shown that the more superior the recyclability of material is, the less environmental impact such as global warming becomes.

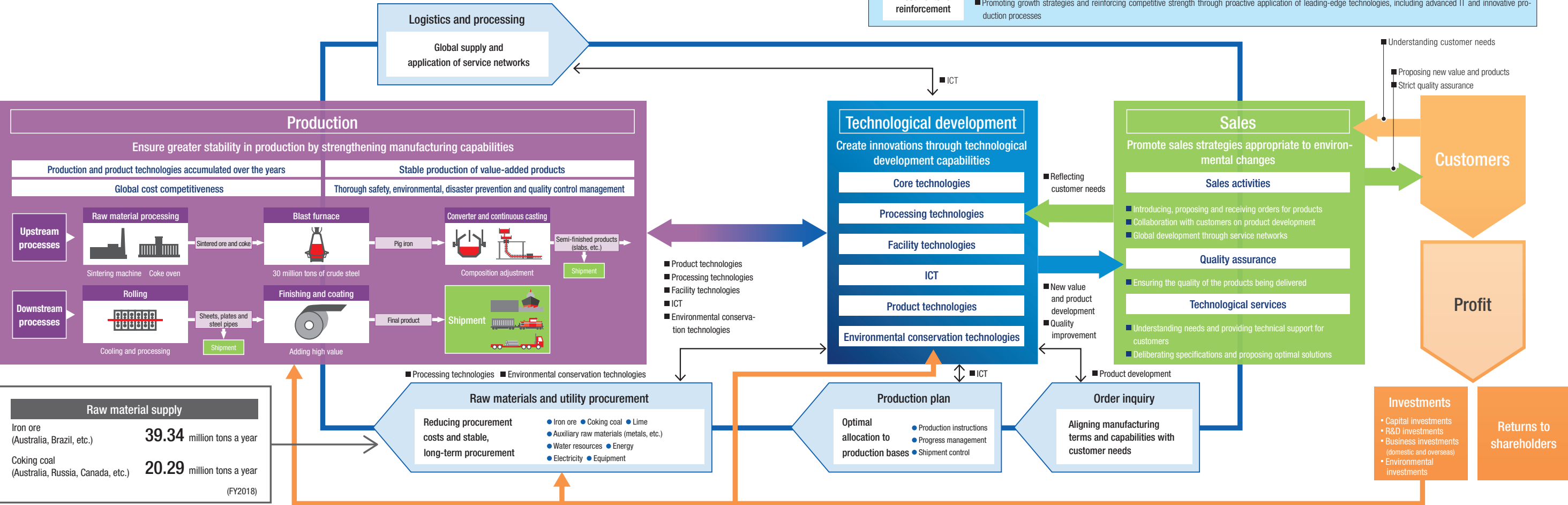
* ISO 20915 : Life Cycle Inventory Calculation Methodology for Steel Products (2018.11)
JIS Q 20915: Life Cycle Inventory Calculation Methodology for Steel Products (2019.6)





A business model that creates a JFE brand associated with high-added value

The competitive advantages of our steel and trading businesses have three fundamental sources: (1) **leading-edge technological development capabilities mobilized by customer needs**, (2) **production capabilities constantly developed and enhanced at production sites**, and (3) **sales capabilities underpinned by firm relationships of trust with customers** established over years by JFE Steel and JFE Shoji Trade. We have created new value tailored to customer needs and provided optimized solutions based on these three factors. Our competitive advantages are treasured assets created through many years of effort. They are also the driving force behind our sustainable growth and cannot easily be matched by other companies.



The source of competitive advantages that reinforce our business model

Production

Two major, integrated steelworks with excellent competitive strength

The primary source of our competitive strength in the steel business are two major steelworks located in east and west Japan, both with world-class production scale. Consolidating manufacturing bases reduces fixed costs and enables highly-efficient production. West Japan Works can produce 20 million tons of steel materials annually and, by international standards, is among the best in terms of cost, product lineup and technological capabilities. Leading production and product technologies, intellectual property, expertise and other strengths accumulated over many years in service provide the company with a unique source of competitive strength.

Initiatives and investments for reinforcement

- Major renovation of facilities to reinforce manufacturing capabilities, along with strategic capital investment and development of innovative production processes
- Application of advanced IT and development of diverse human resources so that skills and technologies are effectively handed down, and dramatic increases in productivity can be realized
- Investment for overseas growth to expand global production systems using technologies and skills constantly developed and enhanced at domestic steelworks
- Stable procurement of raw materials and cost reduction utilizing technologies for low-cost raw materials and networks, including JFE Shoji Trade

The source of competitive advantages that reinforce our business model

Sales

Ability to respond to customer needs and a stable customer base

We have established relationships of trust through two-way communications with many customers during our long years in business. We have created new value by closely communicating with customers to accurately meet their evolving requirements and through other activities, including cooperation from the initial development stage which helps us to contribute to the resolution of customer issues. As a result, we have created a solid customer base that cannot be easily or quickly built by other companies and, at the same time, gained global competitive strength (non-price competition).

Initiatives and investments for reinforcement

- Consolidating product development and sales as well as understanding the needs of customers in an appropriate way and in a timely manner through close communication with them
- EVI (Early Vendor Involvement): Fine-tuning technologies with customers from the initial stage of new product development, to create the finest products possible with the available technologies
- Accurately responding to customer expectations and creating a global network that can deliver products and services in a timely manner

Business models that support society and create the future

The main focus of the engineering business is infrastructure construction that supports people's lives and society, providing products and services based on the Group's comprehensive strengths and advanced technologies. As long as people in the world long for more comfortable and abundant lives, there will never be an end to our mission. We will provide optimal solutions for society and strive to realize a sustainable society to "create" and continue to "Ni-na-u" the foundations for life.

* "Ni-na-u" is a Japanese word meaning supporting and remaining responsible. We aim to provide solutions with our engineering and manufacturing know-how.

The source of competitive advantages that reinforce our business model



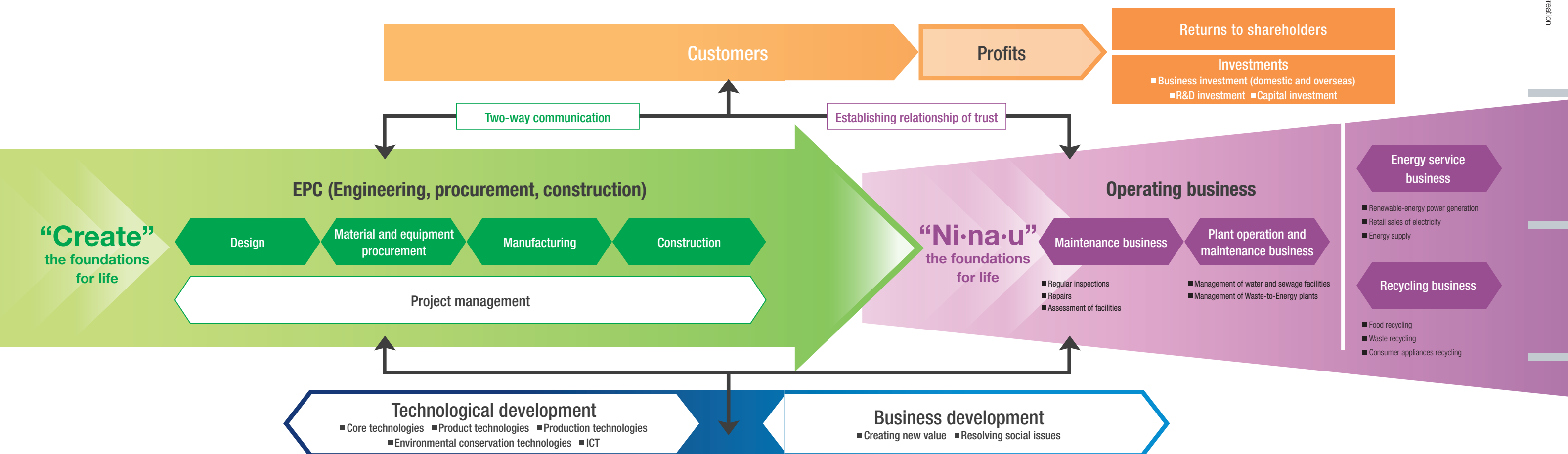
Technological development

Advanced core technologies and diverse product technological capabilities

We have conducted business in diverse fields such as energy, environment and bridges, taking advantage of our advanced technological capabilities, which were developed by combining and advancing the following technologies; processing and assembly technologies based on our shipbuilding business and the material and combustion technologies based on our steel business. We especially possess many technologies that support society, including those for the creation of next-generation energy and solutions for environmental issues. We will make every possible effort to plan, design and promote new business models and develop new technologies based on these technologies.

Initiatives and investments for reinforcement

- Enhancing existing products with a focus on the energy and environment fields, along with developing new products that meet the needs
- Accelerating the creation and expansion of new businesses by consolidating existing businesses toward a recycling-oriented and sustainable society
- Continued investment and reinforcement of human resources to accelerate the enhancement of products and services, including through application of AI and IoT technologies



The source of competitive advantages that reinforce our business model



Engineering, procurement and construction

Proven track record and project execution capabilities enabled by diverse human resources

We have constructed many high-performance, high-quality facilities that meet customer needs in fields such as energy, environment and bridges, from design to completion. Furthermore, we possess Japan's largest steel structure manufacturing plant and other production bases, allowing us to provide high-quality products at low cost. We also have built global engineering structure in overseas bases, centered in Asia, to further reinforce our competitive strength.

Initiatives and investments for reinforcement

- Enhancing quality and productivity through active application of advanced IT at construction and manufacturing sites
- A global engineering structure that enables the supply of optimal products for each country
- Further enhancement of project management systems to ensure projects are thoroughly implemented and earnings is secured

The source of competitive advantages that reinforce our business model



Operating business

Business management capabilities with strengths in manufacturing expertise

We have nurtured our expertise in operation and maintenance over the years at environmental and water and sewage plants, and conduct various projects collaborating with public and private sectors in the civil service field. Our plants undertake recycling and renewable energy generation businesses for a recycle-oriented and sustainable society. We will strive to further expand our operating business, including public and private sector collaborations and energy service operations, applying our strengths in manufacturing and management expertise.

Initiatives and investments for reinforcement

- Active investment toward expanding operating business, such as public and private sector collaborations in the civil service field, energy services, and recycling
- Establishing a system that provides management solutions with remote monitoring of various plants using AI and IoT technologies
- Active business investment, including collaborations with local overseas partners, to enhance our overseas business