

JFE Holdings, Inc. Transition Finance

■ Corporate Profile

Industry	Steel industry
Location	Japan
Business	JFE Holdings, Inc. is part of two large Japanese steel groups. It is a holding company with the wholly owned subsidiaries JFE Steel, JFE Engineering and JFE Shoji. Centered on steel business, it also carries out engineering business and trading company business.

■ Transition Finance Overview

Planned Date of Procurement	From January 2024 on
Planned Procurement Amount	Not disclosed
Structuring Agent (FW)	Not disclosed
Evaluation Agency	Japan Credit Rating Agency, Ltd.

Handling of the Four Elements in the Basic Guidelines

Element 1	<ul style="list-style-type: none"> Transition strategy: Under the JFE Group Environmental Vision for 2050, JFE Holdings, Inc. will aim for the realization of carbon neutrality in 2050. As interim targets, the company aims for a reduction of 18% in its core steel business in FY2024 and a reduction of 30% or more in FY2030 (compared to 2013, both Scope 1 and 2). Further, in engineering business too, the company has raised the expansion of contribution to CO₂ reductions (at least 25 million tons in FY2030). Governance: JFE Holdings, Inc. discusses group-wide targets and policies related to climate change and confirms the progress of results on the Group Sustainability Council and the various committees it participates in.
Element 2	<ul style="list-style-type: none"> In the process of identifying important management issues identified in 2021, JFE Holdings, Inc. identified the reduction of the CO₂ emissions of the JFE Group and contributing to CO₂ reductions by society as a whole as two of its most important material issues.
Element 3	<ul style="list-style-type: none"> The roadmap for the conversion of steel manufacturing processes in the JFE group is consistent with the Ministry of Economy, Trade and Industry's Technology Roadmap for Transition Finance in Iron and Steel Sector.
Element 4	<ul style="list-style-type: none"> In its Seventh Medium-term Business Plan, JFE Holdings, Inc. disclosed a plan to invest at least 340 billion yen in line with its transition strategy over the four-year period from FY2021 to FY2024. As an initiative for FY2030, the company announced that capital expenditure on the scale of 1,000 billion yen will be required to realize its target of reducing CO₂ emissions by at least 30% by converting to low-carbon steel processes with large electric furnaces, ferro coke, scrap and reduced iron measures, LNG, etc.

Main Candidates for Use of Proceeds and Candidate KPI/SPT

* The subject of appropriation this time is **bold and blue**.

Use of Proceeds Category	Candidate Projects
Development of ultra-innovative steelmaking processes	- Development of ultra-innovative steelmaking processes
Conversion to low carbon manufacturing processes	- Capital expenditure and investment for the introduction of electric furnaces and reduced iron manufacturing - Strengthening of LNG supply capacity and building of hydrogen infrastructure - CCS related facilities (CO ₂ separation, recovery, liquefaction, storage and shipping facilities)
Initiatives for energy-saving and greater efficiency	- Use of AI and IOT with blast furnaces. Introduction of cyber-physical systems and increased use of scrap - Renewal of facilities including coke oven renovation, recovery and effective use of waste heat and by-product gas, and resource conservation
Manufacture of eco-products	- Development of manufacturing and processing centers for high-value-added electrical steel sheets
Initiatives for renewable energy	- Initiatives for renewable energy (biomass, geothermal, solar power generation)
Initiatives for the realization of a recycling society	- Recycling of waste plastic

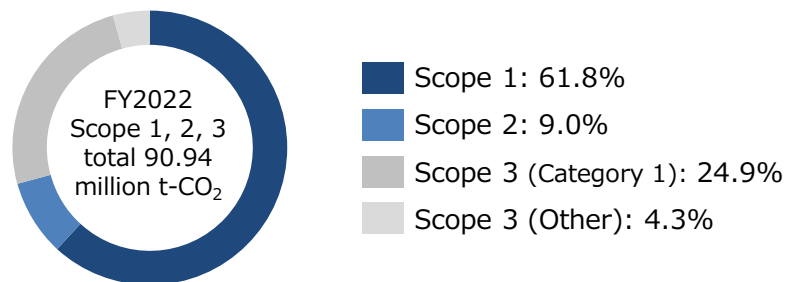
* JFE Holdings, Inc. formulated the Green/Transition Bond Framework in 2021 and this was adopted as a model project by the Ministry of Economy, Trade and Industry the same year. Recently, **in order to add projects with concrete investment plans related to its decarbonization strategy, JFE Holdings, Inc. updated the framework and expanded the use of proceeds and procurement methods.**

Fundraiser's Climate Transition Strategy and Governance (Element 1)

Carbon Neutrality-Related Targets and Initiatives

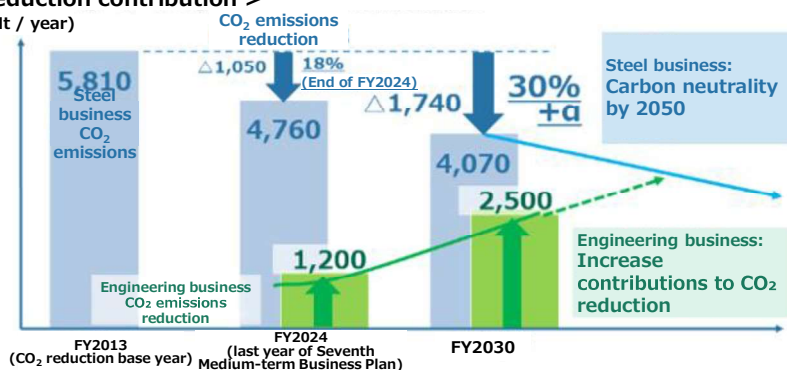
- Scope 1 & 2 emissions account for 70% of the CO₂ emissions of the JFE Group.
- JFE Holdings, Inc. will aim to achieve carbon neutrality in 2050 through initiatives centered on the reduction of CO₂ emissions in steel business and the expansion of contributions to CO₂ reductions in society as a whole.

Breakdown of GHG emissions (FY2022)



Milestones for emissions reductions

< JFE Group CO₂ emissions reduction / emissions reduction contribution >
(Mt / year)



Toward FY2024 -18% reduction (KPI progress to the end of FY2022)

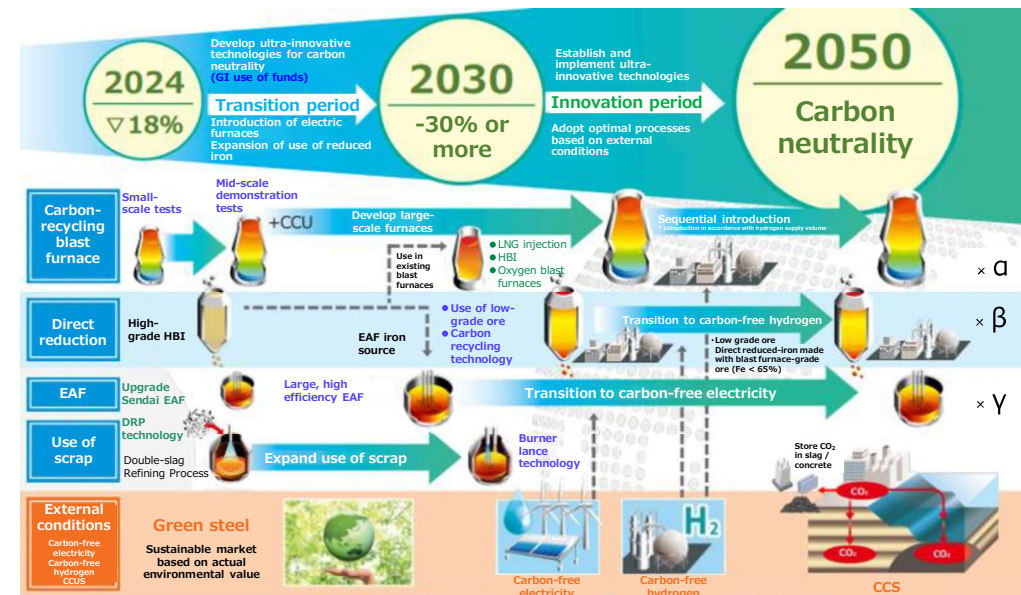
- Facility investment**
Completion of approval of cumulative CO₂ reduction of 90% of the investment plan for the CO₂ reduction target* through energy savings and technological development
-> Cumulative investment plan: 88% approved
 - Emissions reduction**
Achievement of 50% of the CO₂ reduction target * through energy saving and technological development
-> CO₂ reduction target: Achievement of 58%
- *Reduction in CO₂ emissions through energy saving and technological development: 1 million tons

Toward FY2030 -30% or more reduction

- Energy saving and greater efficiency**
Updated to Fukuyama high efficiency coke oven (-16)
Improvement of the efficiency of power demand facilities
Leverage AI and DS technologies
 - Use of low-carbon raw fuel**
Expansion of the use of scrap in converters (-150)
Use of reduced iron in blast furnaces and converters (-200)
 - Use of electric furnaces**
Sendai: Upgrade EAF (-10)
Chiba: Introduce EAF for SUS (-45)
Kurashiki: Innovative EAF (high-efficiency and large) (-260)
- Approved projects are shown in blue bold. Values in parentheses are reduction amounts (10,000 tons / year)

Roadmap and Initiatives for the Reduction of Emissions in steel business

- JFE Holdings, Inc. will take on the challenge of the development of ultra-innovative technologies centered on carbon recycling blast furnaces and CCU.
- In addition, it will expand the introduction of electric furnaces by using scrap iron and direct reduced iron, and promote the conversion to low-carbon processes.

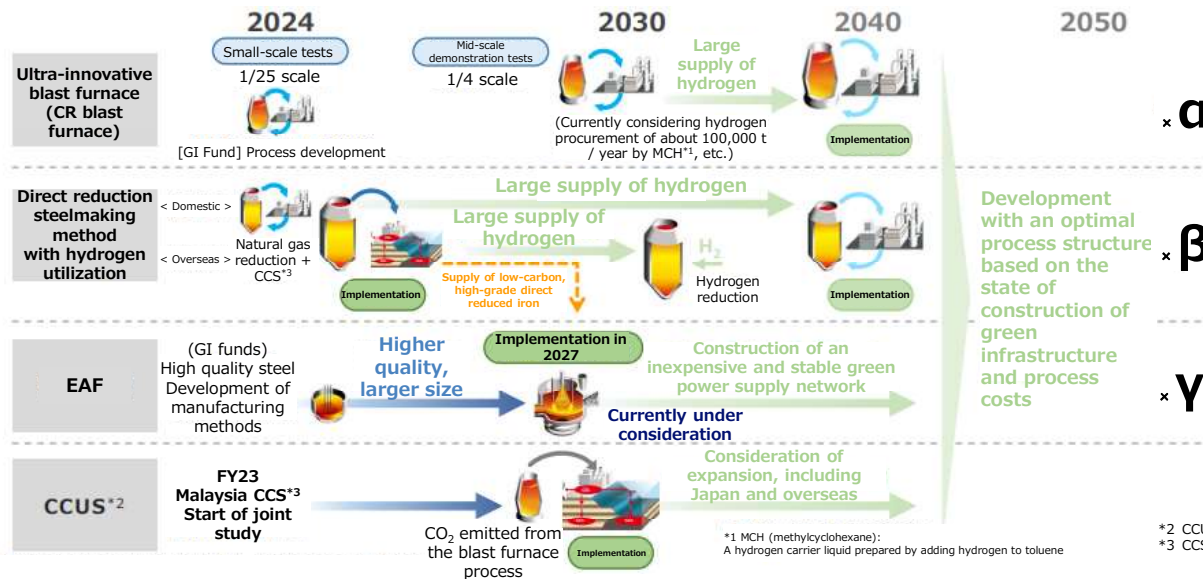


Key Points

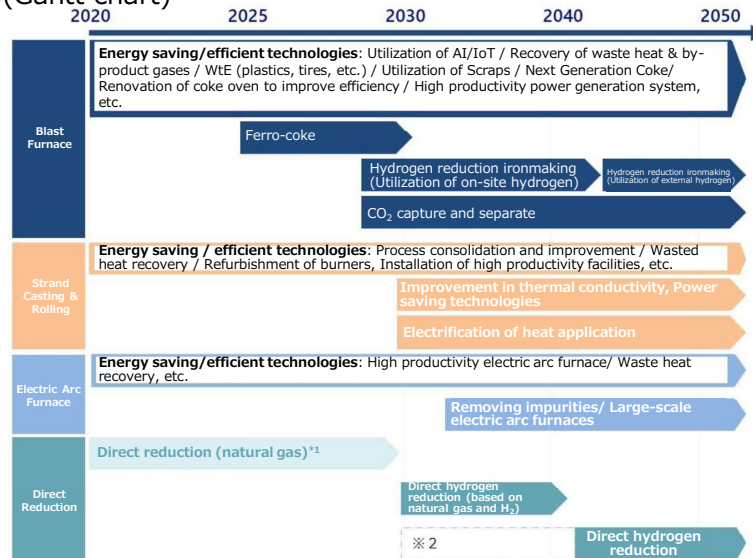
- JFE Holdings, Inc. will implement initiatives for the reduction of CO₂ emissions in steel business, and the expansion and development of renewable energy power generation, etc. for the realization of emissions reductions.
- In steel business, the company will promote the conversion to low carbon manufacturing processes, considering the period to FY2030 to be a transition period. The company defines the period from FY2030 to 2050 as an innovation period, during which it will establish and implement ultra-innovative technologies.
- It is also highly transparent, disclosing initiatives up to the end of FY2024 and FY2030.

Climate Transition Strategy to be Science-based Including Targets and Pathways (Element 3)

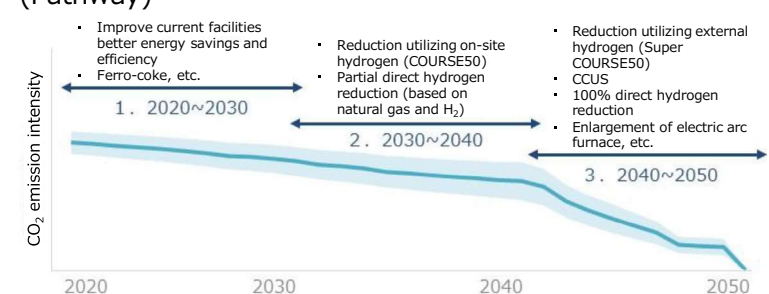
Roadmap for the conversion of iron and steel processes at the JFE Group



(Gantt chart)



(Pathway)



Key Points

- The roadmap for the conversion of steel manufacturing processes in the JFE Group is consistent with the Technology Roadmap for Transition Finance in Iron and Steel Sector.

Ministry of Economy, Trade and Industry
Technology Roadmap for Finance in Iron and Steel Sector

Implementation Transparency (Element 4)

Investment plan in the
JFE Holdings, Inc.
Seventh
Medium-term Business
Plan (FY2021 to
FY2024)

Consolidated investment	Facility investment	1,200	Steel business: About 1,080 billion yen Steel business maintenance: About 30%
	Business investment	250	
	Total	1,450	
Of above	GX investment	340	<ul style="list-style-type: none"> Steel business: 160 billion yen Offshore wind power generation business, strengthening of facilities for manufacturing non-oriented electrical steel sheets, etc. Engineering business 130 billion yen Investment mainly in recycling and renewable energy Trading business: 50 billion yen Investment mainly in the strengthening and expansion of the supply chain for electrical steel sheet processing and distribution

(Unit: billion yen)

Core measures for
carbon neutrality in
Steel Business in
FY2030

Energy savings and high efficiency	Low-carbon feedstock & fuel	Low-carbon processes
Upgrade to high-efficiency coke ovens Fukuyama District (2025)	Expand use of scrap in converters Use direct-reduced iron (HBI) All districts (under way)	Upgrade existing EAFs Sendai Works (2024)
Improve efficiency of power-demand facilities (Electrify blast-furnace blowers, raise efficiency of oxygen plants, etc.) All districts (under way)	Securing Scrap and HBI Reinforcing storage depots All districts (under way)	Introduce large, high-efficiency EAFs Kurashiki District (2027-2030)
Leverage AI & DS (companywide CPS, etc.) for energy savings All districts (under way)	Bolster LNG supply network	Use ferro-coke for commercial production Fukuyama District (TBD)

Key Points

- In its Seventh Medium-term Business Plan, JFE Holdings, Inc. disclosed a plan to invest at least 340 billion yen in line with its transition strategy over the four-year period from FY2021 to FY2024.
- Moreover, as an initiative for FY2030, the company announced that capital expenditure on the scale of 1,000 billion yen will be required to realize its target of reducing CO₂ emissions by 30% or more by converting to low-carbon steel processes with large electric furnaces, ferro coke, scrap and reduced iron measures, LNG, etc.

Committee | Results

JFE Holdings, Inc. Transition Finance

Result:

Approved for Climate Innovation Finance Promotion Grant Scheme

Main opinions

Transition strategy

- Increasing the accuracy and competitiveness of electric furnaces is a very good initiative, and I am in favor of adoption.
- The achievement of the emission reduction target for 2030 might be in sight, not only through the diminution of crude steel production, but also through various initiatives such as the conversion to EAF, and it is important to continue working towards reductions on carbon intensity basis.
- While demand for carbon-free iron will increase from 2030, domestic restrictions and price uncertainties differ from those overseas. In light of this situation, it is difficult to incorporate new technologies whose technological development prospects are unclear into transition plans, but it would be good if you could draw as specific a path beyond 2030 as possible.

Other elements / other

- While waste plastics derived from industrial waste are highly pure and easy to use, competition in securing them is fierce. Initiatives to secure a stable supply network will be important.

This report focuses on the contribution of transition finance to the realization of Japan's 2050 carbon neutrality and the Paris Agreement, and does not cover any evaluation of the risks of transition finance as a financial instrument. Even in the model case of this project, it should be noted that credit risks and other risks (such as price fluctuation or liquidity risks in the case of bonds) exist as in ordinary financing.