



KOBELCO Group Initiatives Aimed at Achieving Carbon Neutrality

February 6, 2024
Kobe Steel, Ltd.

1. Company Overview

2. Tackling the Challenge of Carbon Neutrality

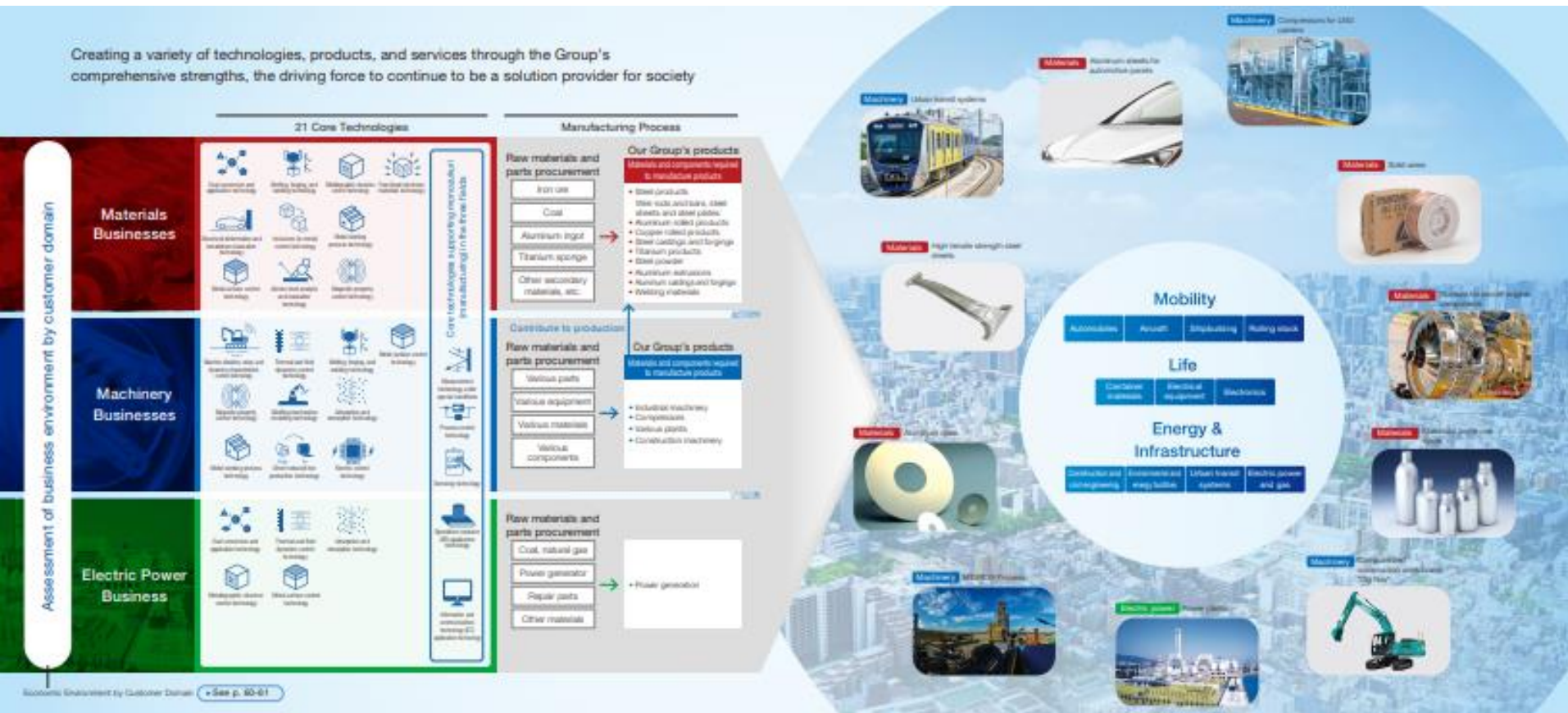
Company Overview

Company Name	Kobe-Seikosho Kabushiki-gaisha
English Name	Kobe Steel, Ltd. < URL: https://www.kobelco.co.jp/ >
Group Brand	KOBELCO
Founded	September 1, 1905
Established	June 28, 1911
Capital	250.9 billion yen (as of March 31, 2022)
President & CEO	Mitsugu Yamaguchi
Employees	Consolidated: 38,106 (as of March 31, 2022) Non-consolidated: 11,296 (as of March 31, 2022; excludes employees on loan)
Subsidiaries	201 companies (as of March 31, 2022)
Affiliates	50 companies (as of March 31, 2022)

Company Overview

Business Model and Value Provided

Creating a variety of technologies, products, and services through the Group's comprehensive strengths, the driving force to continue to be a solution provider for society



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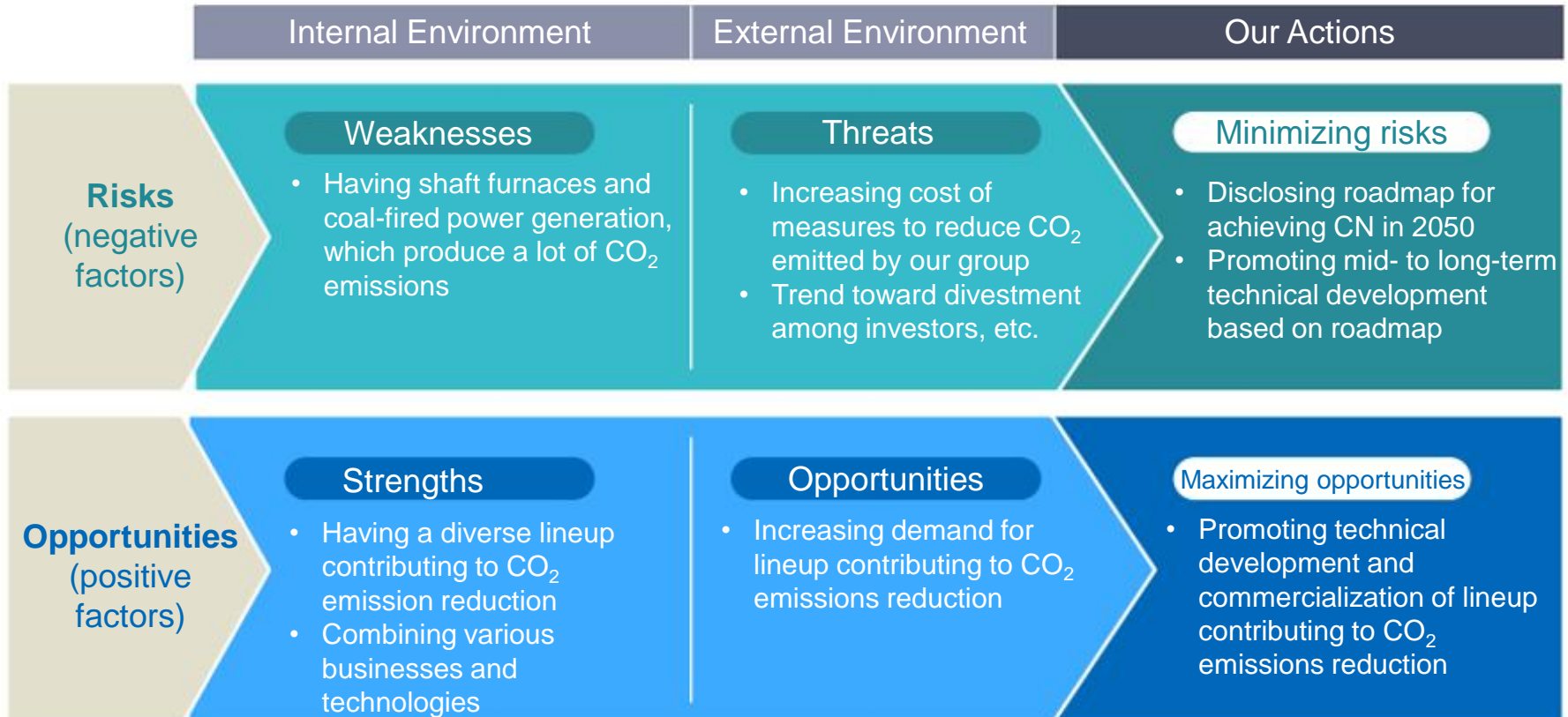
2. Tackling the Challenge of Carbon Neutrality



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Toward Carbon Neutrality in 2050

We aim to **tackle and achieve carbon neutrality**.
We aim to **enhance corporate value** during the transition to carbon neutrality.





Tackling the Challenge of Carbon Neutrality / Targets & Vision

In addition to reducing CO₂ in production processes, our Group is contributing to CO₂ emissions reduction based on our own technologies, products, and services, and based on these two approaches, we have set our 2030 targets and 2050 vision

	2030 Targets	2050 Vision
Reducing CO ₂ in production processes	30–40% (vs. FY2013) (*1)	We aim to tackle and achieve carbon neutrality
Contributing to CO ₂ emissions reduction based on technologies, products, and services (*2)	61 million tons (of which MIDREX® accounts for at least 45 million tons (*3))	100 million tons or more

(*1) The majority of the reduction target's applicable scope is reduction in steelmaking processes.

Revised since the September 2020 announcement (after switching from a BAU base to a total emissions base, we added expanded use of the Group's own solutions)

(*2) Contributing to reducing CO₂ emissions in various areas of society through the Group's own technologies, products, and services

(*3) Revised the calculation method announced in September 2020.



MIDREX® Process Owned by Our Group

This process is a type of steel-making technique that manufactures **Direct Reduction Iron (DRI)**, which is a raw material for steel, by directly reducing iron ore using a reducing gas made by modifying natural gas.

*Reduction = removing oxygen from iron oxide (iron ore)

- DRI: Steel raw material made by reducing iron ore in solid state to iron, making the iron content at least 80%.



Qatar Steel No. 2 Plant (Qatar) (1.5 million tons/year)



DRI



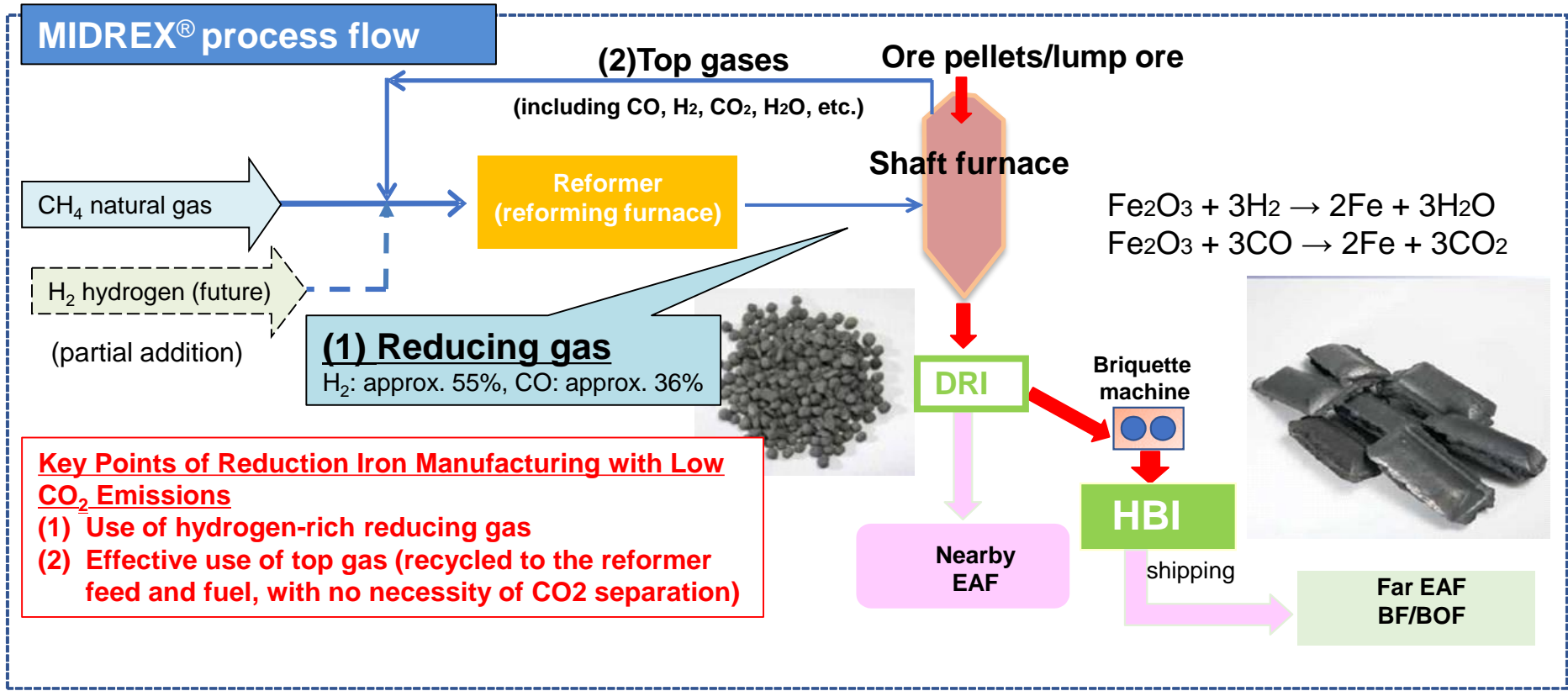
HBI

(Hot Briquetted Iron)
DRI that has been solidified for purposes such as marine transportation

Features of MIDREX® Process

MIDREX® process: Reduction iron manufacturing process that directly reduces iron ore with reducing gas (hydrogen-rich) created by modifying **natural gas**

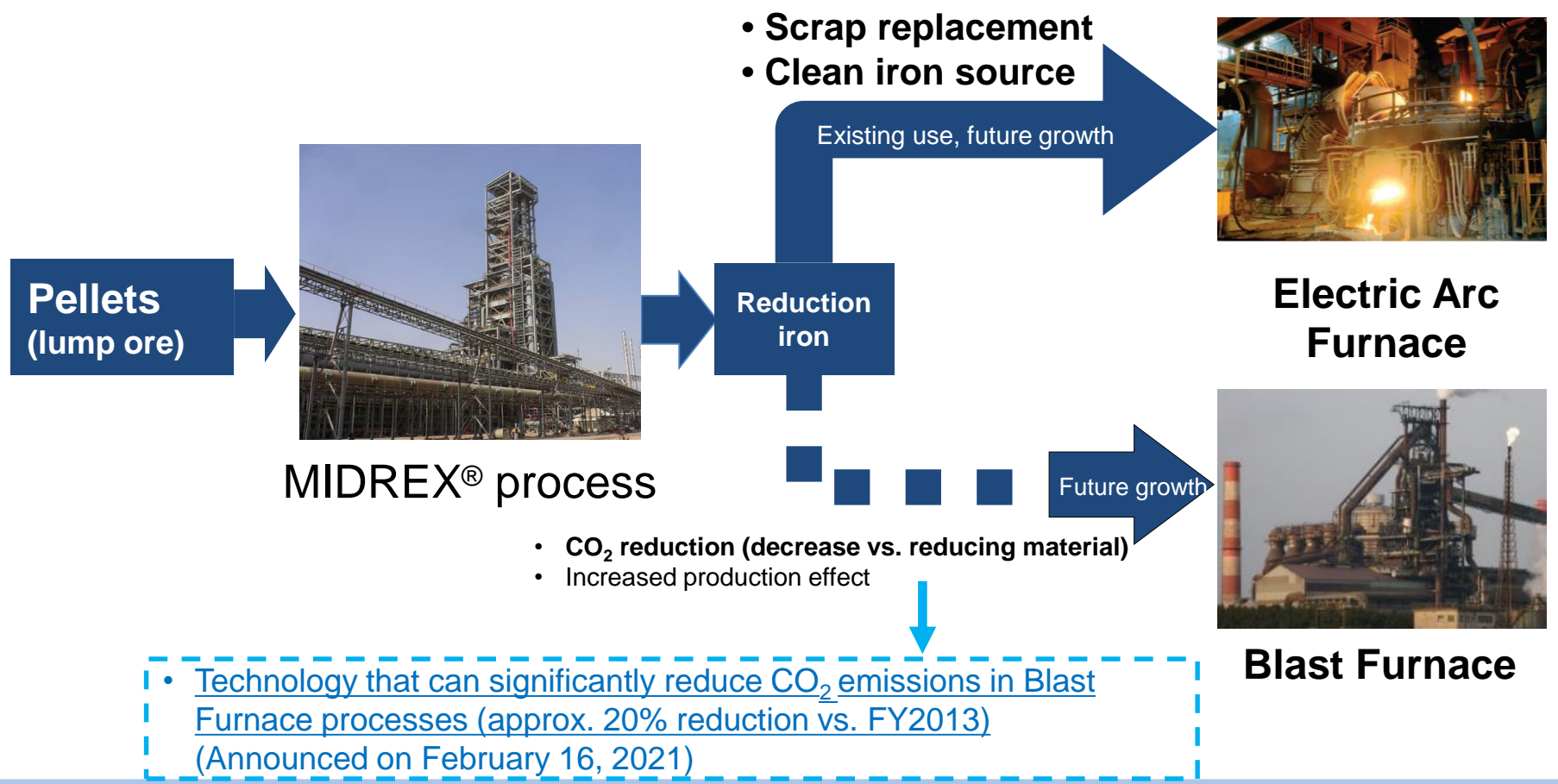
Extensive track record: **80%*** of the world's reduction iron production volume, delivered to **over 90 furnaces**
 (*Natural gas-based direct reduction iron)



(Source: "KOBELCO Group's CO₂ Reduction Solution for Blast Furnace Ironmaking," announced by the Group on February 16, 2021)

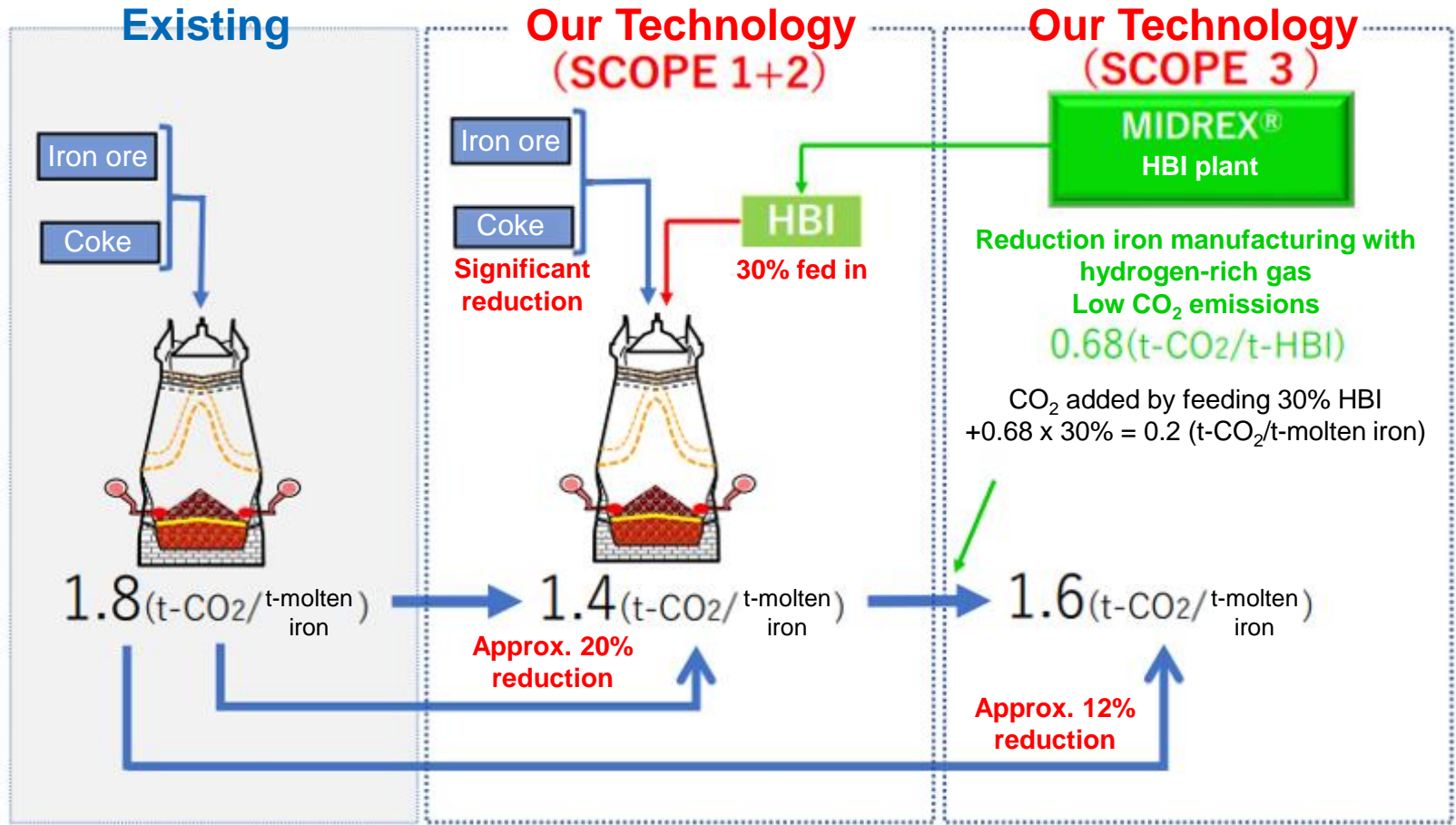
Mid- to Long-Term Demand for MIDREX®

In addition to demand for Electric Arc Furnace, use with Blast Furnace is anticipated in the future with the aim of reducing CO₂ and increasing production.



CO2 Reduction Solution Concept

Replacing Part of Shaft Furnaces' Reducing Functions with the MIDREX® Process Using Hydrogen-Rich Gas



Commercialization of CO₂ Reduction Effect with Shaft Furnaces

We used the technology to reduce CO₂ emissions from a shaft furnace by feeding HBI manufactured using MIDREX® process technology into the shaft furnace at the Kakogawa Steel Works. In FY2020, we obtained certification that CO₂ emissions were reduced by around 20,000 tons from the U.K. certification body DNV. This reduction amount is used by dividing it between two products: one with 100% reduction, and one with 50% reduction.

Kobe Steel's Low-CO₂ Shaft Furnace Steel Stock



Kobenable Steel

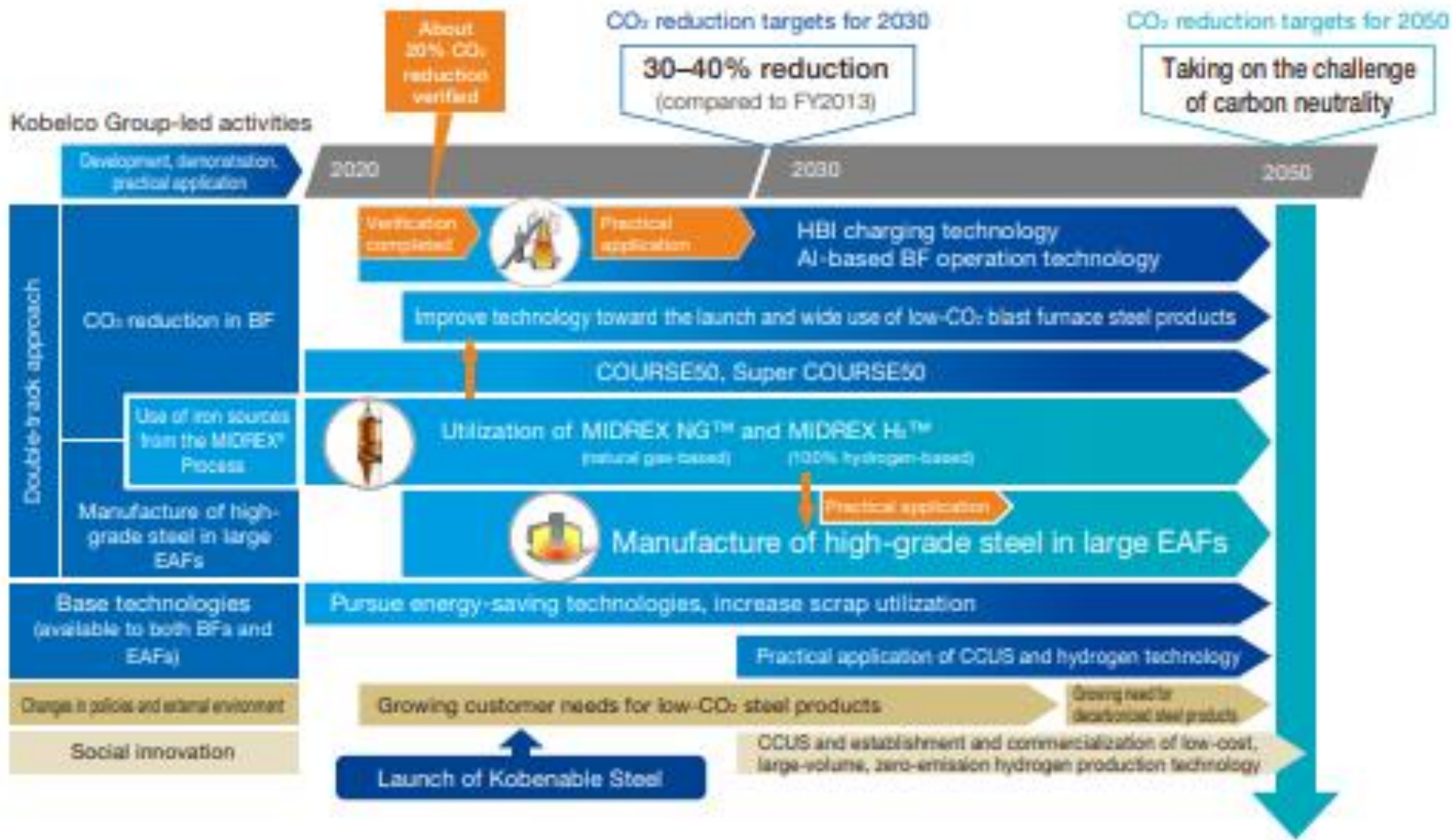
Planning to sell in two grades: a 100%-reduction product (**Kobenable Premier**) and 50%-reduction product (**Kobenable Half**)

Ad Published in *Nikkei* Newspaper



*Applications have been submitted to register “Kobenable,” “Kobenable Premier,” and “Kobenable Half” as trademarks of Kobe Steel.

Roadmap Toward Carbon-Neutral Steel-Making Processes



Thank you for listening.