

JX Nippon Mining & Metals Group Long-Term Vision 2040

Fostering the Development and Innovation in Society
as a Global Leader of Advanced Materials

June 27, 2019

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 **JX Nippon Mining & Metals**

1. Background – Changes in Underlying Trends –

- ✓ Radically changing underlying trends surrounding our business
- ✓ Strong commitment to the SDGs and international development goals

Notable characteristics of underlying trends

1 Escalation of resource shortages and depletion

As the middle class grows, the amount of resources consumed also increases. Geopolitical risks such as prolonged US-China rivalry and the war in Ukraine, and rising protectionism and resource nationalism in supply-side countries make the competition for resources fiercer among demand-side countries.

2 Increasing demand for advanced materials

Demand for advanced materials is increasing as digital data has been widely used in various industries such as healthcare, energy, construction, IT and mobility. Geopolitical risks are accelerating the development in renewable energy and storage batteries.

3 Shrinking domestic market / increasing focus on sustainable growth, especially in emerging countries and Asia

The Japanese domestic market has been shrinking due to the declining birthrate, aging population and deindustrialization in Japan. Environmental issues are becoming critical for sustainable growth including in emerging countries, the forefront of economic growth in the world.

Correspondence to SDGs

To realize a sustainable society, needs for advanced materials are expanding in various industries and fields.

SDGs: The Sustainable Development Goals adopted by United Nations Member States in September 2015



7. Affordable and clean energy



11. Sustainable cities and communities



9. Industry, innovation and infrastructure



12. Responsible consumption and production

2. Future Prospects Based on Underlying Trends

- ✓ Changes in underlying trends create not only challenges but also great business opportunities for the JX Nippon Mining & Metals Group (“JX”)

Focus Businesses

Semiconductor materials segment

ICT materials segment

- High-margin businesses backed by niche top positions in the advanced materials market through technological differentiation and market creation
- Growing semiconductor market due to electronics market expansion
- Risk of losing businesses due to shortening product lifecycle, prolonged lead time for product development, alternative materials and/or economic downturn
- Slower growth, but more advanced functions in smartphones
- Glowing demand for EVs and wearable devices

Base Businesses

Metals & Recycling segment

- Mineral resources: require large amounts of investment capital, highly volatile
- Metals: limited potential for product differentiation in smelting
- More severe business environment due to shortage of resources, tightening environmental regulation and intense competition with overseas competitors
- New business opportunities due to market requirements for stable supply with an emphasis on ESG factors

Note: The following segments have been established from FY2023:

Semiconductor materials segment : Thin Film Materials Division, Tantalum and Niobium Division

ICT materials segment : Functional Materials Division, Tatsuta Electric Wire and Cable, Toho Titanium

Metals & Recycling segment : Resources development Division, Metals & Recycling Division

3. Key Strategies – Long-Term Vision –

- ✓ Shifting to a technology-based from a process industry-type firm
- ✓ Generating high and sustainable profits in fierce global business competition
- ✓ Contributing to the realization of sustainable society as a global leader in semiconductor/ICT materials

《 Target portfolio 》

Position the Focus Businesses as the core of our growth strategy

- Build appropriate structure for Base Businesses, regardless of business scale, to support growth of Focus Businesses
- Position copper and minor metals indispensable to semiconductor/ICT materials as core domains

【Growth】 Focus Businesses

Semiconductor materials segment

ICT materials segment

- Aim to achieve profit growth exceeding market growth through technological differentiation
- Drastically expand scale of revenue and make it a source of profits with diverse line-up of technologies and small-lot, highly profitable products

【Business foundation】 Base Businesses

Metals & Recycling segment

- Secure stable supply of raw materials (copper and minor metals) for Focus Businesses
- Sustainably supply basic materials required for advanced materials and contribute to resolution of ESG agenda

4. New Business Development

- ✓ Establishing a structure to constantly create new technology-based business to significantly expand the scale of Focus Businesses

Leveraging external resources

- Leveraging external resources and building co-creative R&D enables us to shorten R&D periods and achieve a higher success rate of commercialization

Examples

- Joint research with universities, research institutes
- Leveraging open innovation platform and corporate venture capital
- Business alliance with other companies, M&A, etc.

Organization building and HR development for technology-based management

- Working on the establishment of a "flexible organizational structure" allowing prompt decision-making and leveraging high-talented professionals, etc.
- Securing human resources who could create new value

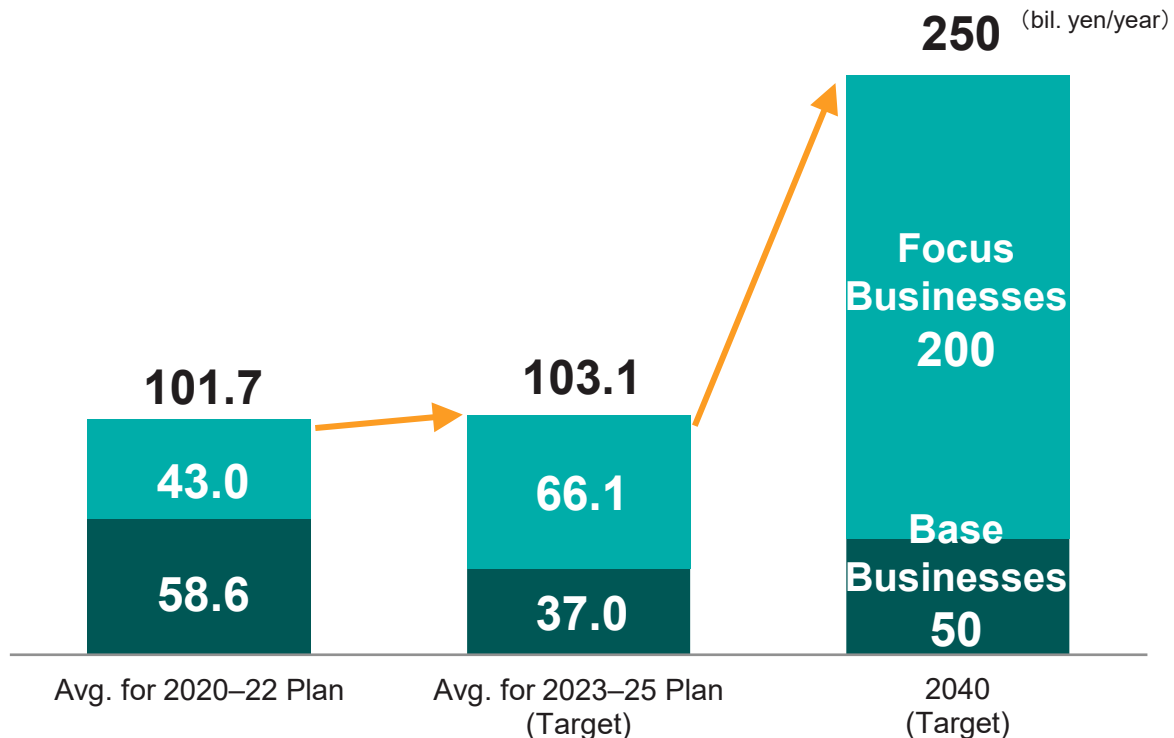
Examples

- Significant increase in technical personnel
- Changing corporate culture
- Radical reforms of career paths for internal professionals

5. Business Portfolio Targeted by Long-Term Vision

- ✓ JX aims to achieve enhanced profitability and capital efficiency backed by high-margin and high-growth Focus Businesses that drive further growth
- ✓ Aim to lift operating profit from the current 100-billion-yen level to achieve 250 billion yen by 2040

《 Operating Income Growth towards 2040 》



Note: Common expenses are allocated to the two businesses in proportion to their operating income.

Focus Businesses

- Aiming at the top global player in niche areas through the supply of advanced materials and new business developments

Semiconductor materials

- Increase sales by capturing trends in markets and customer needs
- Expand our business into new adjacent fields within semiconductor related industries

ICT materials

- Capture demand for advanced interconnection devices
- Provide distinctive products for post-smartphone devices

Create the third pillar of profits, driving further growth

Supply raw materials/
Provide management resources

Base Businesses

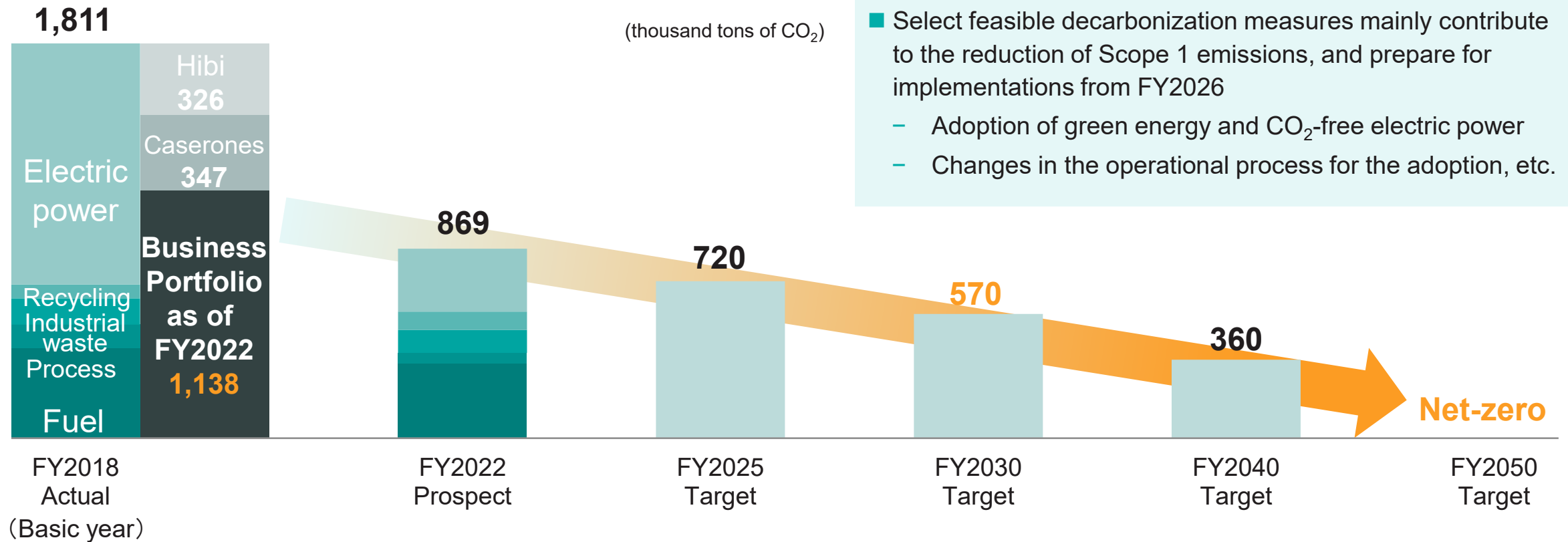
Metals & Recycling

- Long-standing raw materials supply to Focus Businesses
- Establish operations corresponding to ESG agenda

6. Decarbonization Vision of JX

- ✓ Target 50% reduction (vs FY2018) of the Group's total CO₂ emission until FY2030, and net-zero by FY2050

《 Transition of CO₂ emission towards net-zero by FY2050 》



Cautionary Note on Forward-Looking Statements

The purpose of this material is to provide information, etc. related to our company in the medium-term management plan of which regularly announced by our parent company, ENEOS Holdings, Inc. (TSE Prime Market / 5020)

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