Tungsten Business Strategy IR Meeting

September 12, 2025

Managing Executive Officer, President, Metalworking Solutions Company
Kazuo Ohara

MITSUBISHI MATERIALS

Agenda

1. Overview of the FY2031 Strategy for Metalworking Solution Business
2. Tungsten Business
3. Strategy for Tungsten Business
4. About H.C. Starck

1. Overview of the FY2031 Strategy for Metalworking Solution Business

Medium-term Management Strategy FY2031 (FY2031 Strategy)

For people, society and the earth, circulating resources for a sustainable future

Prosperous society | Recycling-oriented society | Decarbonized society

Build a recycling system of metal resources based on our strengths and realize growth throughout the value chain by expanding the scope, regions, and scale of our operations

Resource procurement → Decomposition and separation → Smelting → Material processing and product manufacturing → Sales and use → Recovery

(1) Expansion of resource recycling

Metals Company

Resources Business, Smelting & Resource Recycling Business

- E-Scrap information network with recyclers in more than 60 countries around the world
- Base for highly efficient collection of used products (collection sites)
- Advanced decomposition and separation technologies cultivated through home appliance recycling
- Highly efficient recycling technology using smelting systems

(2) Enhancing the supply of high-performance materials and products

Advanced Products Company

Copper & Copper Alloy Business, Electronic Materials and Components Business

- High-performance materials and processed products (copper alloy, oxygen-free copper, silicon precision processed products, etc.)
- Global expansion of EV connectors and superconducting wires for MRI

Metalworking Solutions Company

Carbide Tool Business, Tungsten Business, and Solutions Business

- Ability to cope with difficult-to-cut materials and new materials
- Materials and coating technologies, and technical proposals

(3) Implementing GHG reduction measures to achieve carbon neutrality

Supply of renewable electricity

Renewable Energy Business

Geothermal, hydroelectric, solar, and wind power generation Business

- Technology based on abundant achievements and experience in the geothermal power generation business

Supply of renewable electricity

Overview of the FY2031 Strategy for Each Business Segment

*Explanation of initiatives related to business-specific strategies in blue

		1) Expansion of resource recycling	2) Enhancing the supply of high-performance materials and products
Metals Company	Resources Business	● Promotion of technological development to recover rare metal resources contained in copper deposits ● Acquisition of copper mining interests and securing copper concentrates through continuous investment in mines ● Expansion of electrolytic copper supply through SX-EW operations at copper mines	
	Smelting & Resource Recycling Business	● Strengthening and expanding the networks to promote resource recycling ● Expansion of copper cathode production capacity* ● Increasing recycling rate by expanding collection and processing of E-Scrap ● Creation of rare earths and rare metals recycling businesses ● Acquisition of new smelting technology (Exurban) ● Accelerating business developments in Japan and overseas (E-Waste recycling)	*We revised its plan to increase its E-Scrap processing capacity while limiting the increase in copper concentrate processing capacity
Advanced Products Company	Copper & Copper Alloy Business	● Improve the recycling rate of wrought copper products and establish a scrap platform base	● Overseas (Luvata): Rapid entry into growing markets (xEV, healthcare, environment) ● Expand sales and strengthen services to overseas customers by establishing a new overseas plant which carries out a downstream process, with the domestic plants as mother ones(* Mainly explains capacity enhancement and profit improvement at domestic plants)
	Electronic Materials & Components Business		● Highly capital-efficient management through continual restructuring of the business portfolio ● Strategic investment in focal products in growth areas ● Developing and securing human resources for the creation of new businesses and the promotion of business alliances ● Enhancing manufacturing capabilities and DX to enhance production sophistication and profitability ● Providing business and social value (SDGs) for carbon neutrality
Metalworking Solutions Company		**Tungsten Business** ● **Expansion of business scale for rechargeable batteries in addition to carbide tools, etc.** ● **Strengthening environmental responsiveness**	**Cemented Carbide Tools Business** ● Stable supply of the world's top quality, high-efficiency products utilizing the strength of materials and coating technology **Solutions Business** ● Commercialization of solution sales to manufacturing sites

3) Supply of renewable electricity

Renewable Energy Business	● New development at one location every three years to expand business ● New entrants into wind power generation where power generation costs are expected to decline in the future ● Development of solar power using company-owned land and development of small hydroelectric power utilizing operational experience

Metalworking Solutions Company

- **FYE March 2025: Sales growth for automotive industry was significantly lower than anticipated**
- **FYE March 2026: We will focus our sales activities on key accounts, particularly in the automotive and aerospace sectors. Additionally, we will substantially increase the number of seminars to foster customer-friendly initiatives**

(Billions of yen)	FYE March 2024 Result	FYE March 2025 Result	FYE March 2026 Forecast	FYE March 2026 Plan (FY2031 Strategy)
Ordinary Profit	12.2	8.5	8.3	25.0
EBITDA	24.5	20.9	25.9	39.9
ROIC	5.2%	3.1%	3.7%	8.6%
ROIC Spread	-1.3pt	-3.3pt	-3.6pt	+2.1pt
EP	-2.1	-6.6	-7.3	

*EBITDA= Ordinary profit + Interest expense + Depreciation + Goodwill depreciation

FY2031 Strategy Measures	**Cemented carbide tools Business** • Stable supply of the world's top quality, high-efficiency products utilizing the strength of materials and coating technology **Tungsten Business** • Expansion of business scale for rechargeable batteries in addition to carbide tools, etc. • Strengthening environmental responsiveness **Solutions Business** • Commercialization of solution sales to manufacturing sites
Progress	• The creation of high-value-added products is progressing in various fields such as automobiles, aircraft, and medical care. However, due to the deteriorating market conditions, cemented carbide tools's sales fell short of the FY2031 Strategy, and some investments were suspended or postponed • Completion of acquisition of H.C. Starck, one of the world's leading manufacturers of tungsten products
Initiatives for FYE March 2026	• Accelerating comprehensive cost reduction, including personnel reallocation, optimization of scale, and procurement optimization, while also preparing for labor-saving measures in anticipation of an economic turnaround • Strengthening sales expansion to the aerospace industry, which is on a growing trajectory • Accelerating efforts to secure the recovery and recycling capacity of used cemented carbide tools by leveraging recycling technologies, capabilities, and global bases of our company, Japan New Metals (our subsidiary), and H.C. Starck

☐ : Detailed explanations are provided on the following pages

2. Tungsten Business

Tungsten Industry Landscape

Tungsten is an indispensable materials supporting the manufacturing industry, and the strengthening of resource circulation creates new growth opportunities

＜Tungsten＞

Tungsten is a vital strategic material, indispensable for industrial applications due to its hardness—second only to diamond—and high wear resistance. As a key input for cemented carbides and catalysts, it is used in cutting tools, electronic components, semiconductors, petroleum refining, and heavy industrial parts. Global demand is projected to keep rising, with a CAGR of 2.1% through 2034.

＜Trend in the Tungsten Market＞

1. Surge in tungsten prices

Given that around 80% of tungsten concentrates rely on China, the tightening of Chinese export controls amid U.S.-China trade tensions has driven tungsten prices sharply higher since April 2025, setting new record levels.

2. Recycle

With concentrate production largely dependent on China, securing a stable raw material supply through higher recycling rates is vital. As the recycling market expands, scrap collection networks are being established, and the Company is also planning to strengthen its recycling capacity.

3. Risks of the Tungsten Business

In compliance with sourcing exclusively from non-conflict suppliers, we are making Group-wide efforts to secure both virgin materials and tungsten scrap, striving to ensure a stable supply of tungsten raw materials.

＜Tungsten Ore (2024)＞

	W ore production (ton/year)	Share
China	67,000	82.3%
Vietnam	3,400	4.2%
Russia	2,000	2.5%
EU	2,000	2.5%
South Korea	1,700	2.1%
Bolivia	1,600	2.0%
Africa	1,200	1.5%
Australia	1,000	1.2%
Others	1,500	1.8%

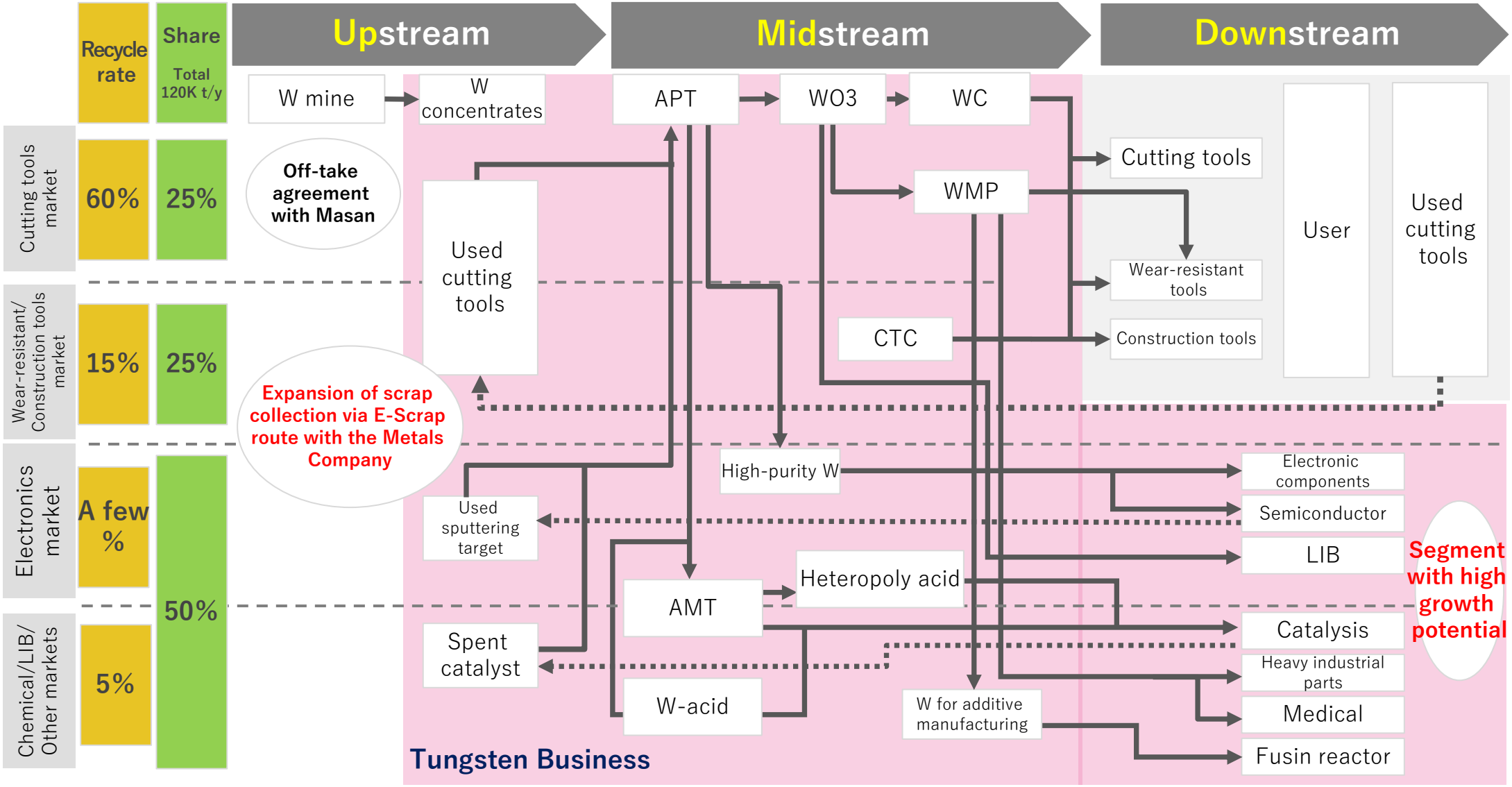
Source：U.S. Geological Survey

＜Tungsten Recycle Rate＞

Global 25% (Our estimate)

Tungsten Materials Flow

Enhancing tungsten resource circulation, through Group-wide efforts



3. Strategy for Tungsten Business

Strategy for Tungsten Business

Establishing the de facto standard for tungsten recycling through HCS*1-JNM*2 synergies

■Expansion of joint R&D and new business

- Advancing R&D and deepening expertise in materials development in partnership with HCS, JNM and MMC
- Promotion of cross-selling and sales growth
- Technical proposals to new customers through jointly developed products

■Enhancing efficiency

- Leveraging both supply chains to strengthen tungsten procurement
- Enhancing efficiency and competitiveness through collaboration in all areas, including production technology, sales channels, and IT systems

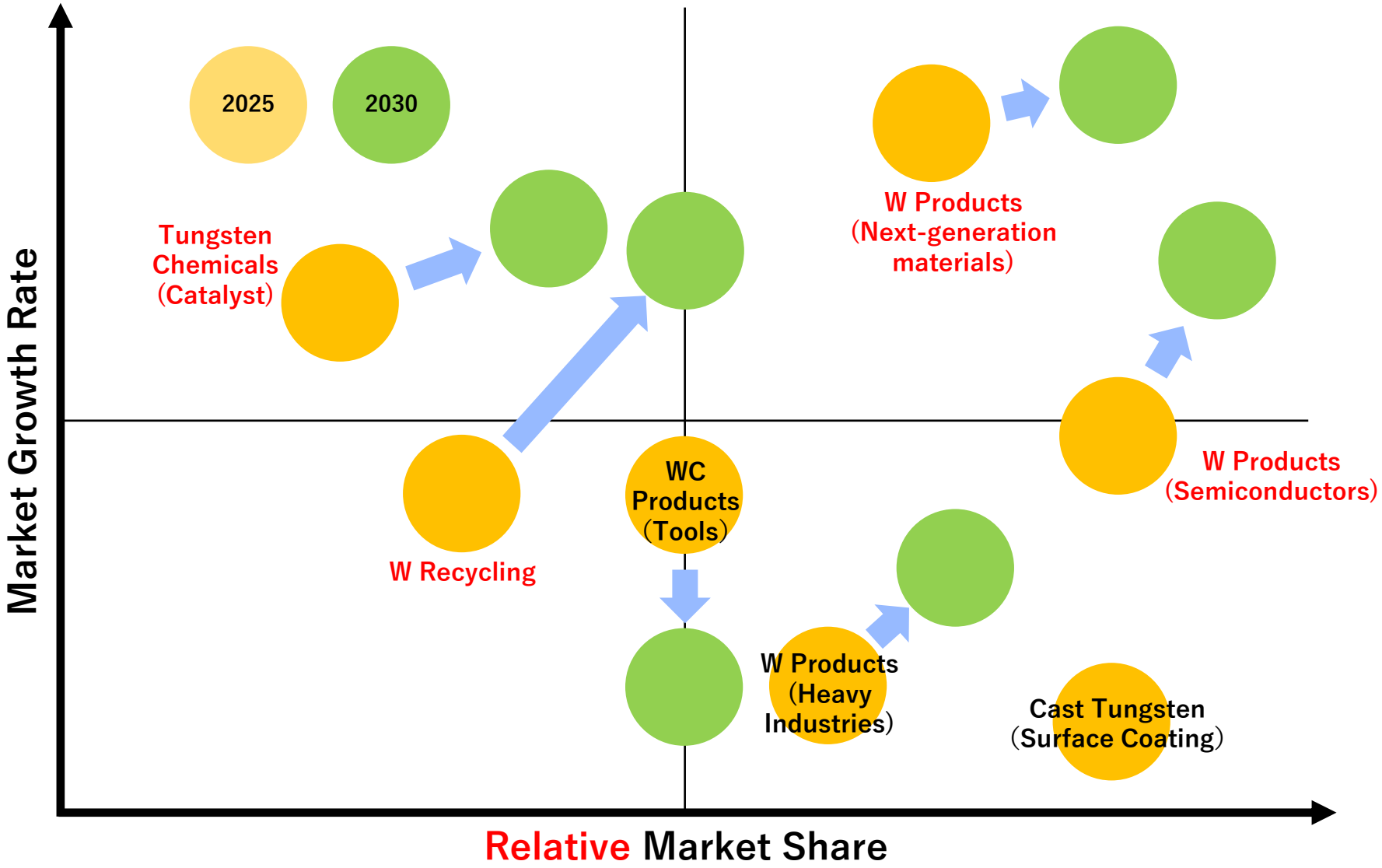
■Promoting recycling

- Achieving and maintaining an **80%** recycling rate for both companies
- Expanding recycling bases and promoting tungsten resource circulation design across Japan, Europe, North America, and Asia
- Global used-tool collection leveraging both recycling bases and the stable supply of cemented carbide tools to customers

*1: H.C. Starck *2: Japan New Metals

Portfolio Strategy for Realizing a De Facto Standard

Prioritizing resources for tungsten recycling and growth in high-value-added products



Company Profiles in Tungsten Business

Creating new value through the integration of both technologies

	H.C. Starck	JAPAN NEW METALS
	Global tungsten player with large-scale recycling capacity and strength in mass production of W/WC powders	Specializing in customer-tailored products and focusing on high-value-added products for electronic components and semiconductors
Products	• Tungsten powders/Tungsten carbide powders • Tungsten chemicals	• Tungsten powders/Tungsten carbide powders • High purity tungsten powders • Tungsten chemicals for Li-ion battery • Molybdenum powders • Non-oxide ceramics powders • Heteropoly acids
Production/ Technology	• Large-scale production • Efficient production technology • Automation technology • Recycling (molten salt)	• Custom-made production • High-purity technology • Recycling (oxidation roasting)
Manufacturing	• Production site in the world's three major markets (Germany, Canada and China)	• Two locations in Japan, Osaka and Akita (Focusing on the Japanese market)
Sales/Major customer	Sales : ¥58.9 billion(FYE March 2026 outlook) Sales mix : For cutting tools (70%), Others (30%) Major customer industries • Cutting/Wear-resistant/Construction tools • Chemicals • Heavy industry	Sales : ¥17.5 billion(FYE March 2026 outlook) Sales mix: For cutting tools (70%), Electronics (30%) Major customer industries • Cutting/Wear-resistant tools • Electronic components and semiconductor materials • Rechargeable battery

4. About H.C. Starck

Facts and Figures about H.C. Starck Group

H.C. Starck
A Group Company of MITSUBISHI MATERIALS

3 production sites
3 sales offices

770 employees

Co-operations with key accounts & first-class institutes

80% recycling ratio in Goslar

> 100 granted national patents (plus 140 pending)

> 650 tungsten intermediates and powders

342 mEUR net revenue

> 150 analytical and infrastructure services

A Joint Global Footprint

H.C. Starck is represented with three production sites in all economically important regions, supported by three sales offices

H.C. Starck
A Group Company of MITSUBISHI MATERIALS

Sarnia, Canada
Tungsten Metal Powders
Tungsten Carbide
Cast Tungsten Carbide

Goslar, Germany
Headquarters
Recycling
Tungsten Chemicals
Tungsten Metal Powders
Tungsten Carbide
Tantalum/ Niobium Carbide

Boston, USA
Sales Office H.C. Starck TUNGSTEN POWDERS

Tokyo, Japan
Sales Office H.C. Starck TUNGSTEN POWDERS

Shanghai, China
Sales Office
Ganzhou, China
Tungsten Metal Powders
Tungsten Carbide

Technology & Innovation Global

Driving global technological leadership by leveraging excellence in both "processes" and "products"

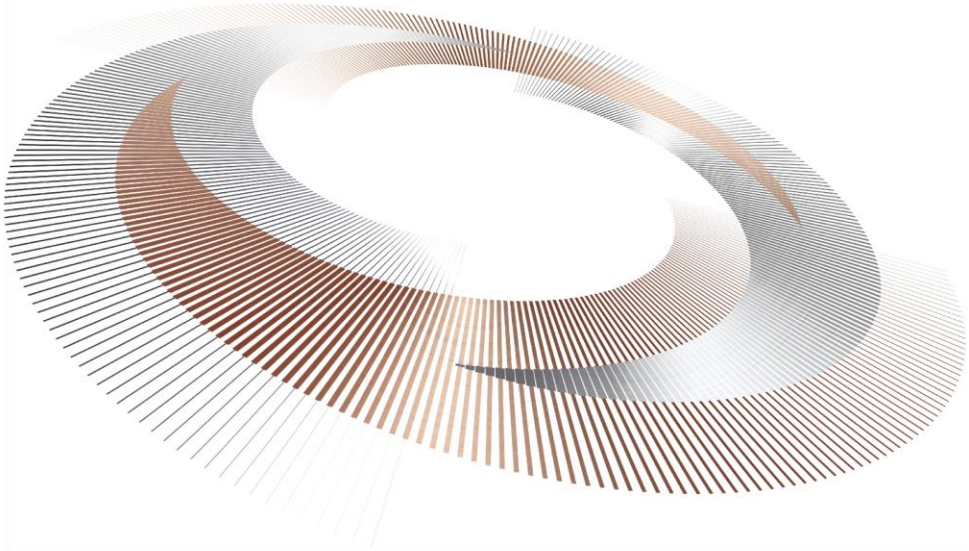
H.C. Starck
A Group Company of MITSUBISHI MATERIALS

Processes

- **Development of New Sustainable Processes**
  - Disruptive technologies + Expanding competitiveness
  - Recycling / Ore concentrate digestion
  - Process / Equipment design
  - AI-based Industry 4.0
- **Process Optimization**
  - Generation of cost savings + Yield improvement
  - Energy & materials efficiency (CO_2-footprint reduction)
  - Smart Green Factories / Digitalization
  - Technology transfer worldwide + Global standards

Products

- **Development of New High-Tech Materials**
  - Portfolio expansion
  - New clients acquisition + New market fields
  - Tailor-made products for new applications
  - Intellectual Property + Monitoring of trends
- **Product Improvement**
  - Particle + Product design
  - Quality enhancements
  - Up-scale laboratory to industrial plant



For people, society and the earth, circulating resources for a sustainable future

MITSUBISHI MATERIALS

September 12, 2025

JAPAN NEW METALS
AKITA Plant

A Group Company of MITSUBISHI MATERIALS

We will support craftsmanship by powder with sensitivity and contribute to realization of wealthy society.

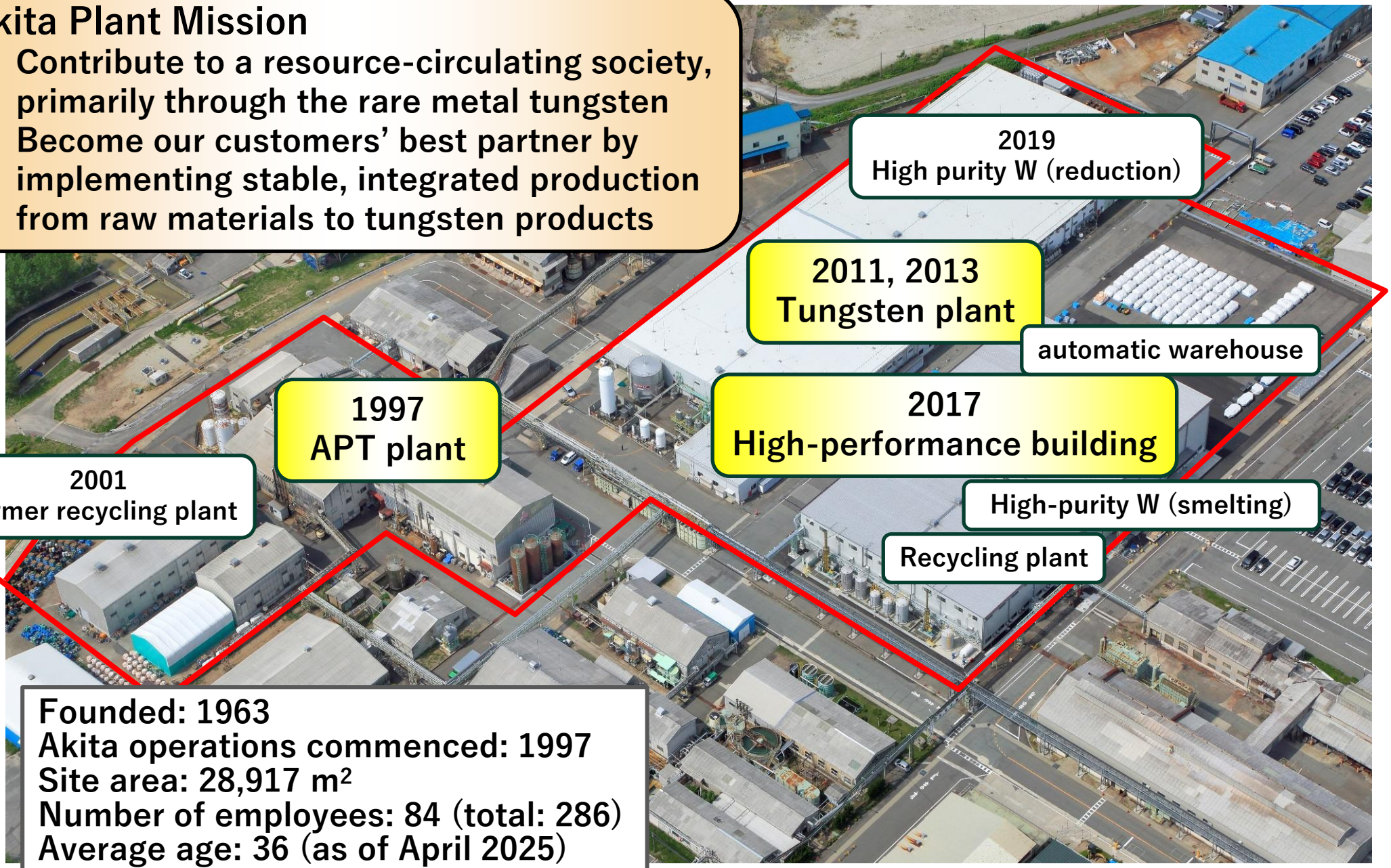
Akita City Barajima Area

Located in the center of Akita City, the area is well served by water, sandwiched between the Asahi River, Akita Canal, and Omono River. Residential areas are located in the east, while an industrial area centered on Mitsubishi Materials is located in the west.

Akita Plant

Akita Plant Mission

- Contribute to a resource-circulating society, primarily through the rare metal tungsten
- Become our customers' best partner by implementing stable, integrated production from raw materials to tungsten products



Founded: 1963
Akita operations commenced: 1997
Site area: 28,917 m²
Number of employees: 84 (total: 286)
Average age: 36 (as of April 2025)

Product Range (Application)

WC

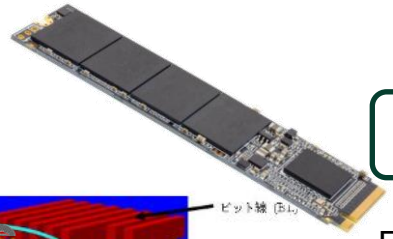
Cutting tools
(compounding, mixing, sintering, grinding, coating)

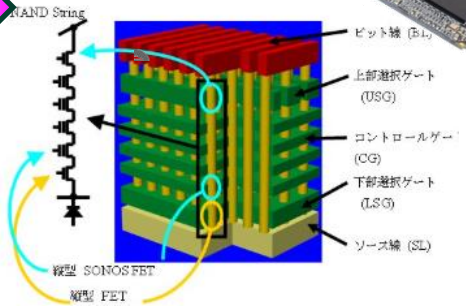
Automotive, Aircraft Construction, Civil engineering industry

High-purity W

99.999% High Purity W

Sputtering Targets
(high temperature and high pressure press)



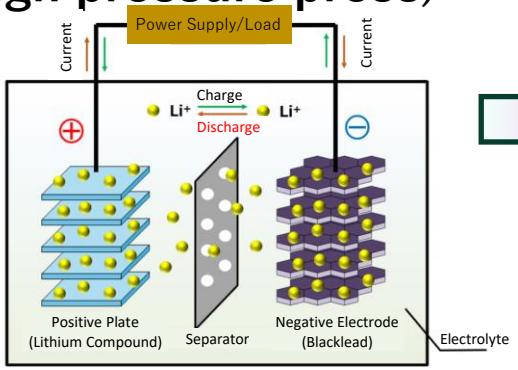


Memory media

PCs, smartphones, Data centers, etc.

WO_3

W 100% recycled content
⇒REMINE



Cathode additives

Lithium-ion battery

EVs, etc.

Production Process

Wet process (Akita Plant)

W ore

(Fe, Mn)WO_4

$CaWO_4$

Recycling plant

WC-Co

W scrap

WO_3, CoO_x (oxide)

Oxidative roasting

Grinding

Extraction and filtration

Refinement

Crystallization

A P T

$5(NH_4)_2O \cdot 12WO_3 \cdot 5H_2O$

Ion exchange

APT plant

Recycling rate
Over 50% in 2024
Equipment installed in July 2026

Tungsten plant

WC

Carbonization

W

Reduction

WO_3

Calcination

A P T

Users (carbide manufacturers, semiconductor manufacturers, battery material manufacturers, etc.)

Dry process (Head Office, Akita Plant)

Manufacturing Process (Recycling Plant)

Soft scrap

In-house recalls

Powder (WC+Co)

Sludge

Oil-based
Water-based
Pulp-based
Diatomaceous earth-based
Mixed, etc.

Hard scrap

Swarf

Insert

Copper tungsten

End mill

Drill for PCB

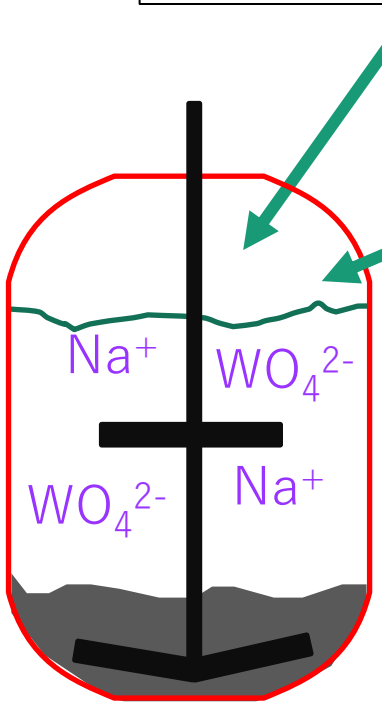
Rolling mill roll

Tungsten target

Pre-treatment (mixing, adjustment) of various scraps, including W, and efficient oxidation roasting in a dedicated furnace ⇒ **Recovery (incineration)**

Wet Engineering; Extraction

Autoclave



Recovery (incineration)

Precipitate = metal hydroxides other than tungsten
Co is sold as a valuable item

Recovery powder is mixed with an alkaline liquid in an autoclave. Metals are insoluble in alkaline solutions (precipitation)
Tungsten dissolves in alkaline solution Tungsten solution
This property allows for the separation of tungsten ions from other impurities

Wet Engineering; Ion Exchange, Enrichment

Tungsten solution

Ammonium chloride

Ion exchange equipment

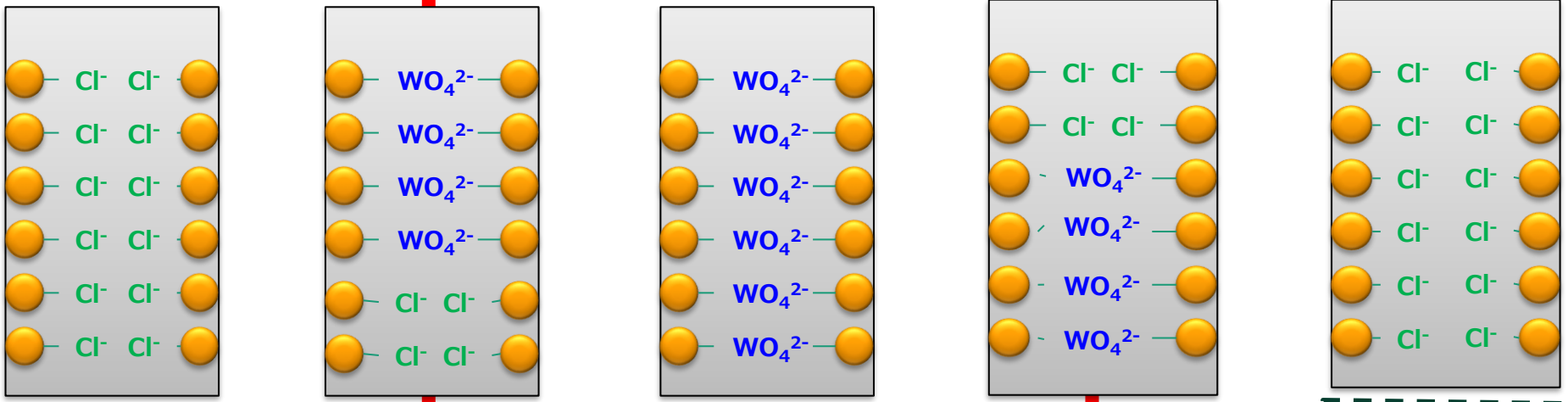
Before

Adsorption

Adsorption

Dissolution

End



Impurities

High-purity tungsten solution

Concentration tank

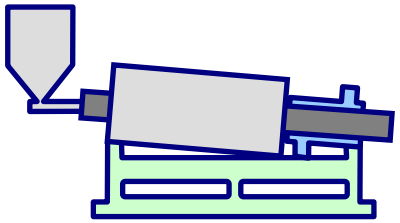
Evaporate high-purity tungsten solution to recover APT (ammonium paratungstate)

Ammonium paratungstate

Tungsten Plant

Calcination

Evaporation of ammonia and moisture



APT

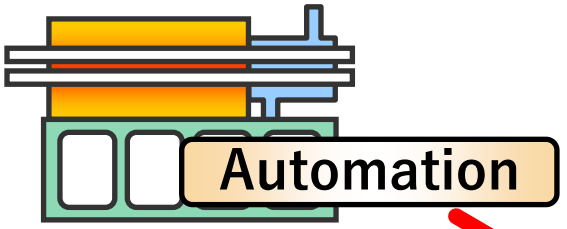
Ammonium paratungstate

WO_3

Tungsten trioxide

Reduction

Hydrogen atmosphere
Recycling of the released hydrogen

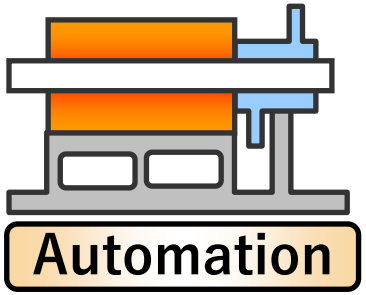


Carbon mixture

Carbonization

W

Tungsten powder



WC

Tungsten carbide powder

Shipment

Wet and Dry High-Purity Plants

APT

Scrap

APT Plant

Wet High Purity Plant

Clean Environment

Dry High Purity Plant

Clean Environment

High-Purity W

99.999%

We have a dedicated line for producing high-purity tungsten.
Facility enhancement is underway.

For more information, please contact :

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Investor Relations Dept.

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https://www.mmc.co.jp/corporate/en/index.html

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