

Business Strategy of the High-Grade Functional Components Company

Hitachi Metals IR Day 2016

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Hitachi Metals, Ltd.

Masato Hasegawa

Executive Officer

High-Grade Functional Components Company President

Business Strategy of the High-Grade Functional Components Company

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1. Business Overview

1-1. Business Composition

World's Largest Manufacturer of Casting Components

Piping Components Business

For gas and water

Flexible piping systems, cast pipe fittings, polyethylene piping systems (for gas)



Heat-Resistant Cast Steel (HERCUNITE™) Business



Aluminum Casting Component Business



Cast Iron Business

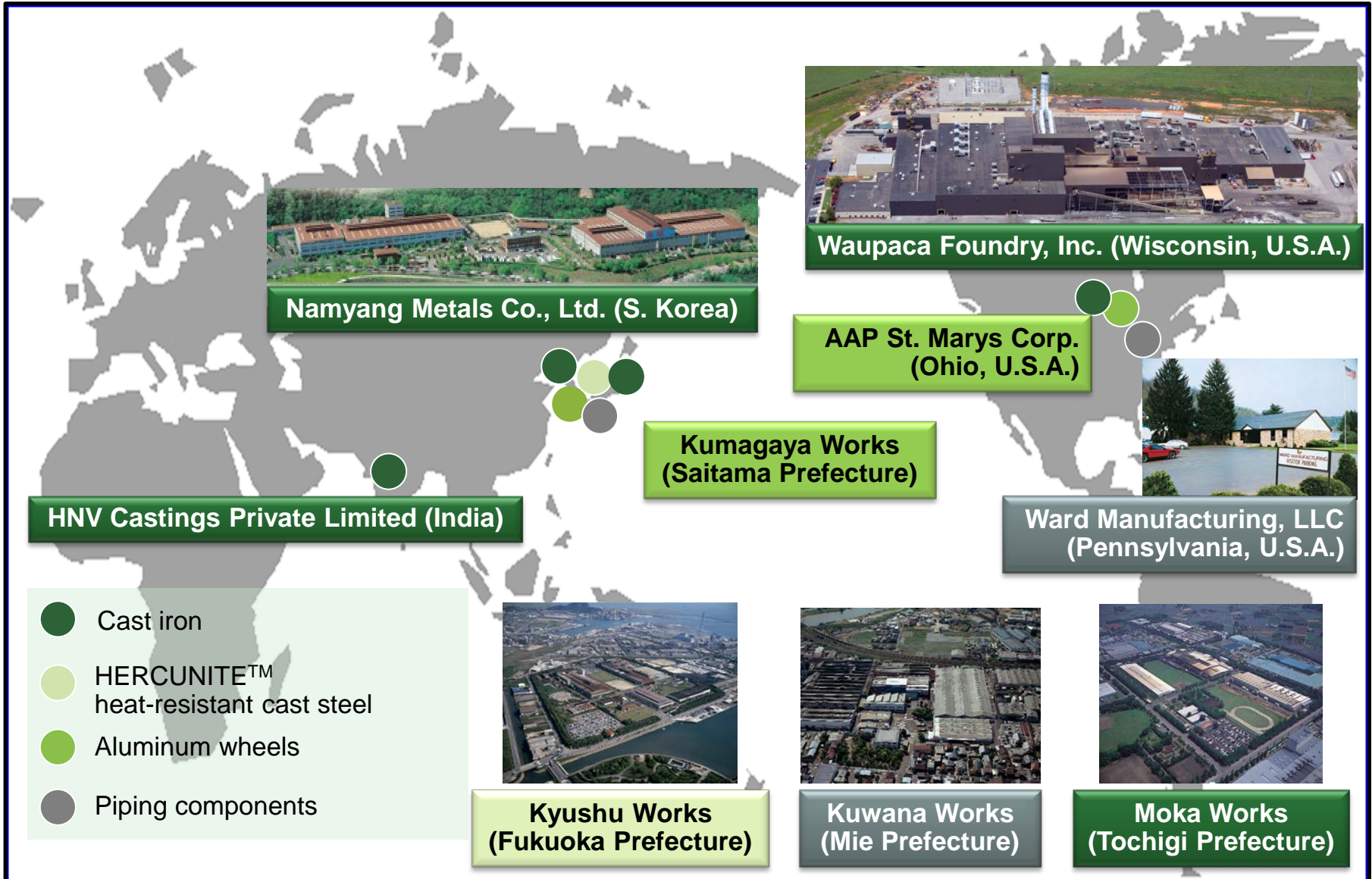


FY2015 Revenues
¥365.1 bn

For automotive & transport equipment
Passenger cars, trucks, buses,
construction machinery,
agricultural machinery, rolling stock

Waupaca Foundry, Inc.
U.S. subsidiary

1-2. Manufacturing Locations



1-3. Cast Iron, Heat-Resistant Cast Steel, and Aluminum Casting Components for Automotive and Transport Equipment Use

Contribute to the future of cars with superior environmental performance, driving performance, and safety through casting components

HERCUNITE™
heat-resistant cast steel

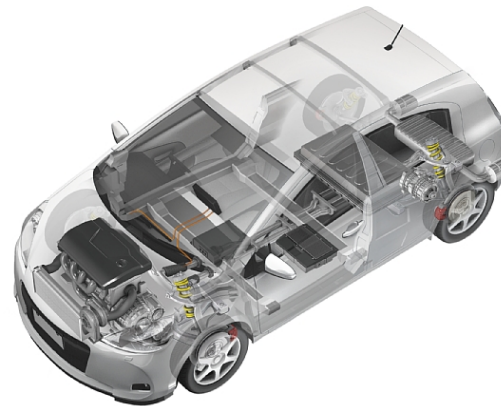


**Environmental
Performance**
Lightweight and
heat-resistant

HNM™ high-grade ductile
cast iron



Aluminum
casting components

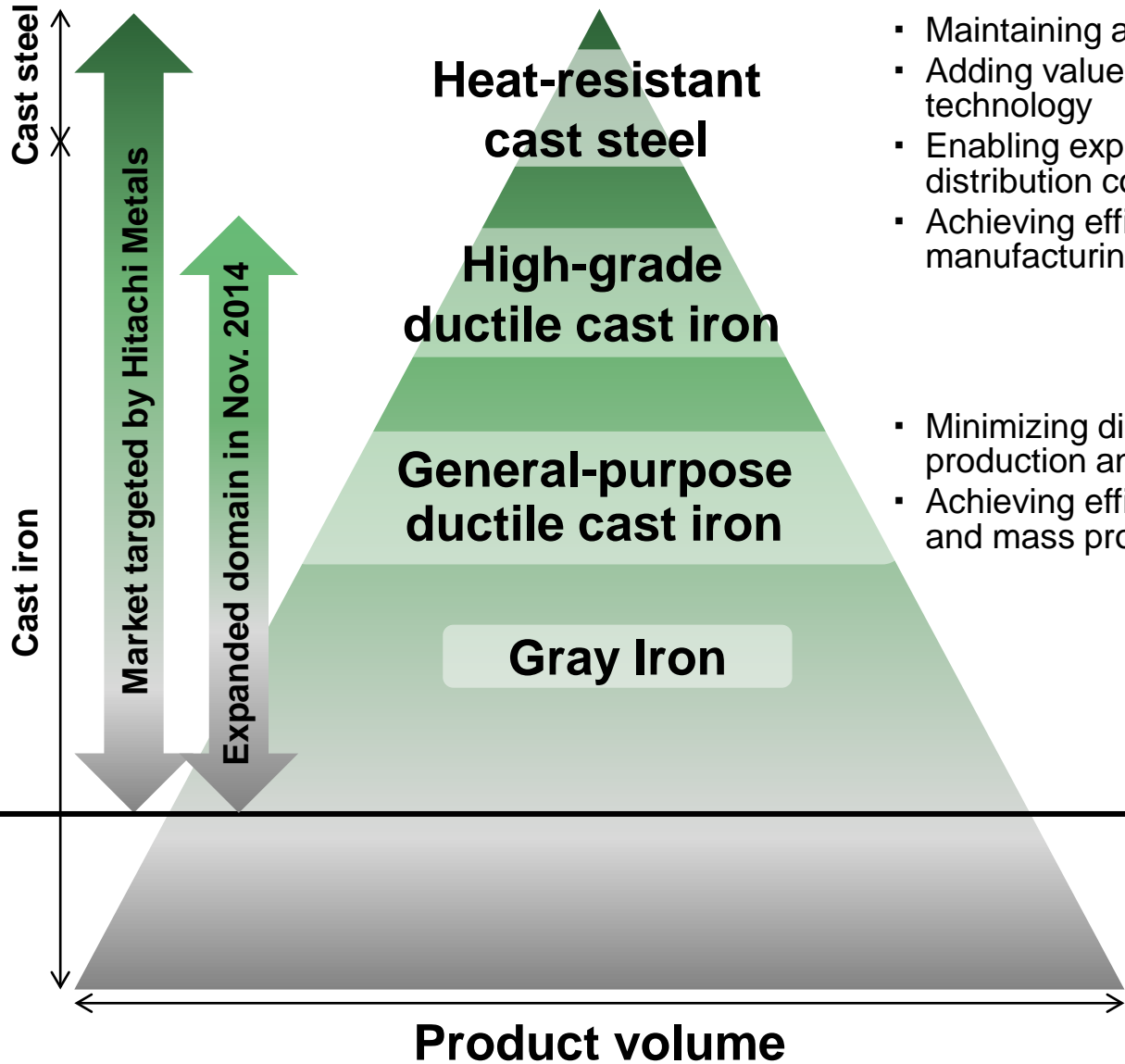


General-purpose
ductile cast iron
Gray iron
(Gray cast iron)

Safety
Strength and
durability



1-4. Direction of Business Development



- Maintaining a technological advantage
- Adding value through advanced processing technology
- Enabling expansion overseas, even with distribution costs added in
- Achieving efficiency through consolidation of manufacturing

- Minimizing distribution costs through local production and local consumption
- Achieving efficiency through high market share and mass production

1-5. Strengths of Our Company

Planning and proposal skills

- Selection of quality materials
- Lightweight, slim design

Extensive product line-up

- HERCUNITE™ heat-resistant cast steel, Malleable™ ductile, gray iron, aluminum
- Strong, heat-resistant

Manufacturing technology capabilities

- Casting technology
- Processing technology
- Coating technology

High manufacturing efficiency

- Maximizing production efficiency using the world's largest manufacturing scale

1-6. FY2018 Medium-term Management Plan: Basic Policy and Goals

Basic Policy of the High-Grade Functional Components Company

We aim for global growth by strengthening the foundation of *monozukuri* and creating new value.

FY2018 Medium-term Management Plan : Goals

	FY2015 Results (¥120 = US\$1)		FY2018 Goals (¥115 = US\$1)	Change vs. FY2015
Revenues	¥365.1 bn	➔	¥375.0 bn	103%
Adjusted operating income	¥26.1 bn		¥37.5 bn	+ ¥11.4 bn
Adjusted operating margin	7.2%		10.0%	+2.8%
Overseas sales as a % of total sales	80%		84%	+4%

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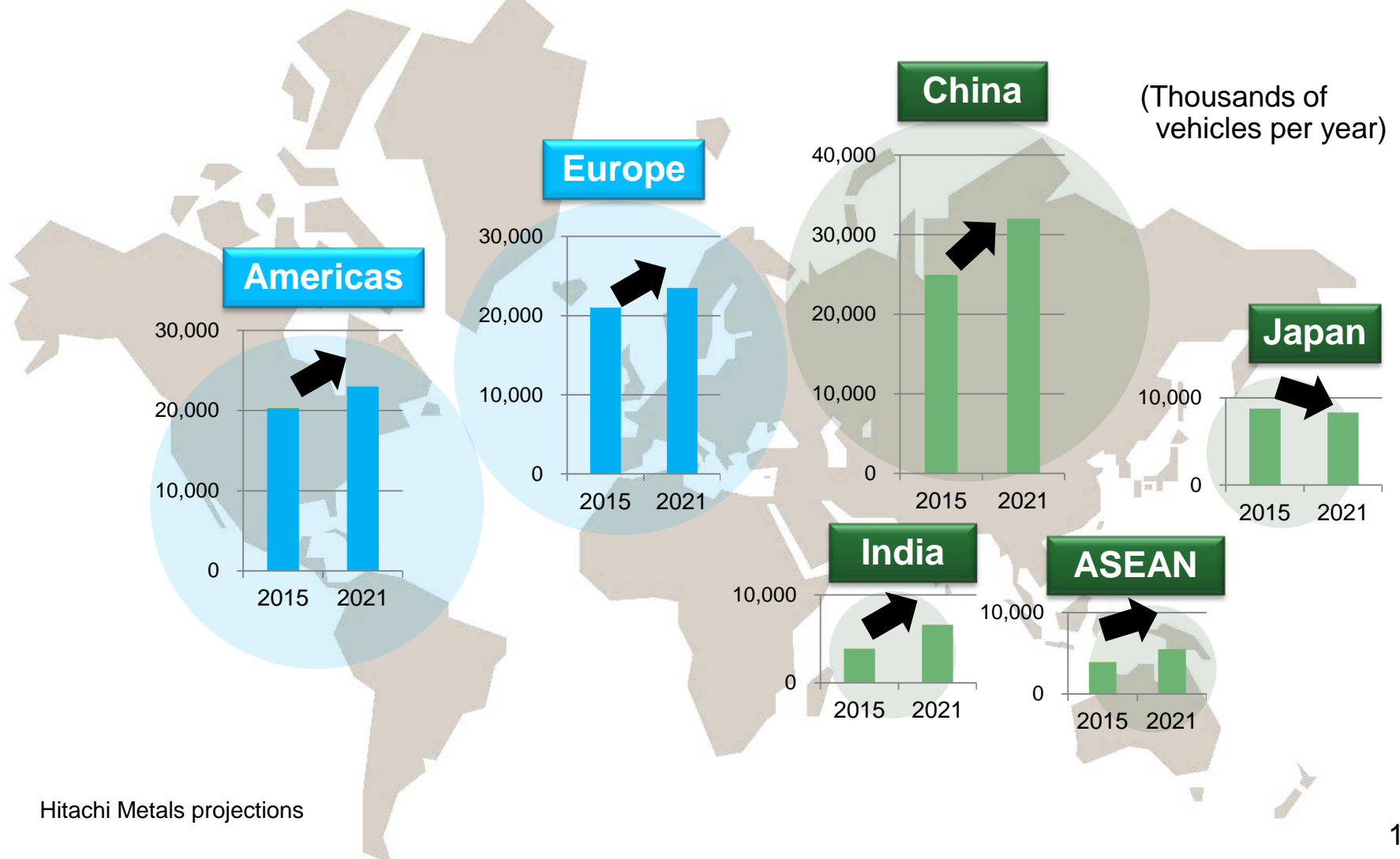
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2. Cast Iron Business

2-1. Market Environment

Vehicle production volume (passenger cars, commercial trucks, etc.) (2015 ▶ 2021)

Cast Iron: Automotive-Related Sales as a % of Total Sales in FY2015: 85%



High-Grade Ductile Cast Iron

- Ability to design high strength and high tensile strength materials (dialog with customers and CAE technology)
- ⇒ Achieves thin, lightweight products



General-Purpose Ductile Cast Iron and Gray Iron

- Clearly superior production volume
 - Proprietary casting equipment that differentiates Hitachi Metals
- ⇒ Achieves lower costs



2-3. Policies and Achievements since Waupaca Foundry, Inc. was Acquired

	Policies	Achievements
Sales	Work to cross-sell the Hitachi Metals and Waupaca brands	Secured major orders in North America under the Hitachi Metals brand
Procurement	Improve procurement leverage by building a joint procurement structure	Begin joint procurement of 15 types of raw materials and subsidiary materials
R&D	Initiate development-driven business by Waupaca, using R&D resources in Japan	Secured opportunities to produce prototypes of next-generation products
Manufacturing	Make mutual use of superior technologies	<ul style="list-style-type: none"> ▪ Increased lifespan of Waupaca molds ▪ Improved manufacturing efficiency
IT	Use the IT resources of Waupaca	Consolidate the existing financial control servers in North American locations and improve operating efficiency



Synergistic benefits

FY2018: \$50 million
(a cumulative total of \$100 million since November 2014)

2-4. Developing Leads into New Markets

Americas

Response to the movement of the auto manufacturers into the Central and South American markets

- Step up sales activities directed at auto manufacturers moving into the Central & South American markets
- Explore new supply structures for Central & South America

Expand sales for commercial trucks, construction equipment, and agricultural machinery

- Expand production capacity for large components (for commercial trucks, construction equipment, and agricultural machinery) by introducing a horizontal casting line (30% increase in FY2018 revenues compared to FY2015)

Add even higher value to products

- Improve quality and manufacturing efficiency by dedicating a plant exclusively to ductile cast iron and gray iron

Expand sales in growth markets (India and Southeast Asia)

- Utilize locations in Japan, South Korea, and India

Develop leads into new markets

- Mine the agricultural and industrial machinery markets

Develop leads into the European market

- Engage in sales activities that utilize Japanese and U.S. planning and presentation skills and European locations
- Explore new supply structures for Europe

Asia

Europe



2-5. Strengthening Product Competitiveness through Technological Innovation

Innovation in *monozukuri*

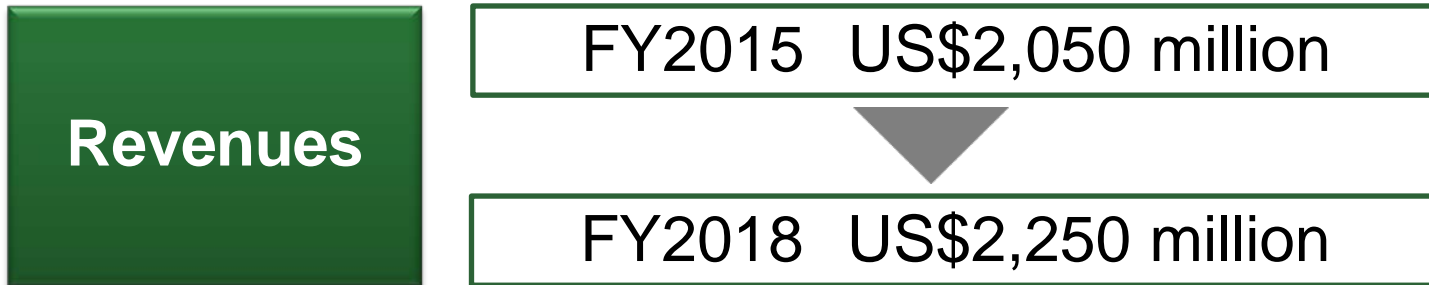
- Development of new pouring technology
- Improvement in the quality of molding sand
- Progress on mechanization with robots

Improvement in development of lightweight designs

- More robust design and use of CAE
- Integrated design of products and production methods

Global roll-out of achievements in material development

- Global roll-out of achievements in R&D in Japan



Achieve sustainable growth by implementing a cycle of adding even higher value and expanding production volume

Contribute to the development of society through casting components as the world leader in cast iron

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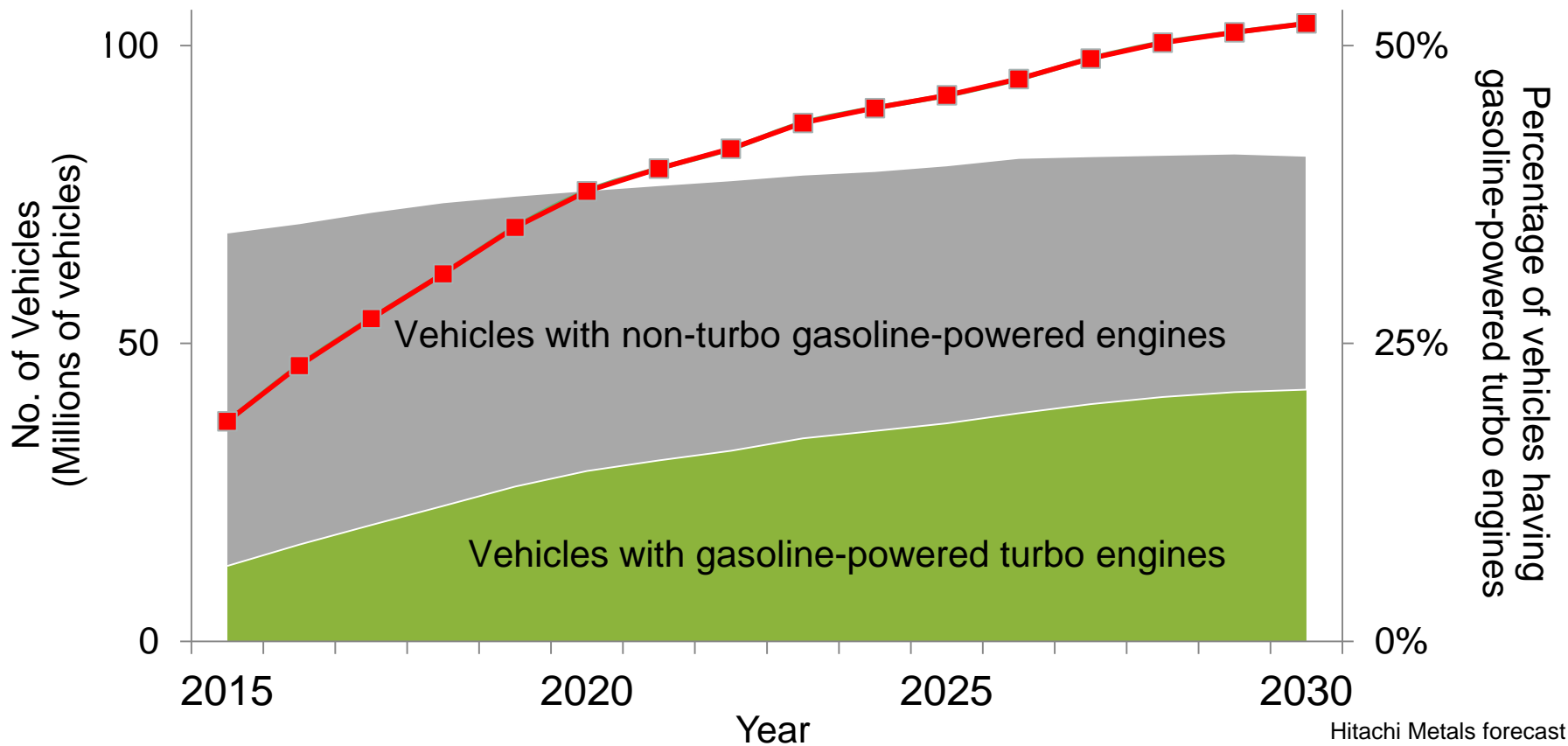
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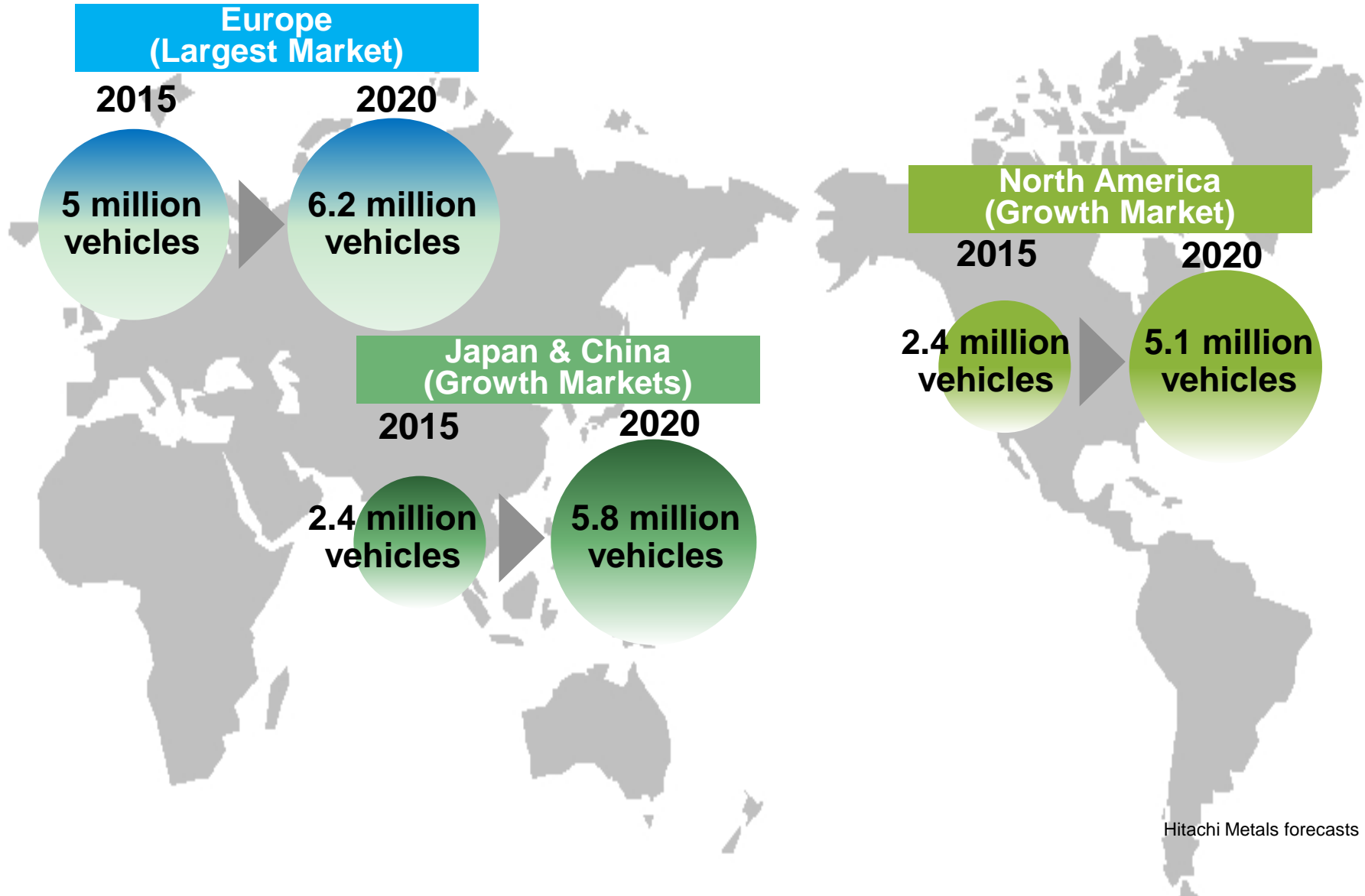
3. Heat-Resistant Cast Steel (HERCUNITE™) Business

3-1. Market Scale

Global Powertrain Forecast			
	2015	2020	2030
No. of vehicles with gasoline-powered turbo engines	15 million vehicles/year	28 million vehicles/year	42 million vehicles/year
Percentage of vehicles having gasoline-powered turbo engines	13%	38%	52%



3-2. No. of Gasoline-Powered Turbo Vehicles (that use heat-resistant cast steel) Produced by Region

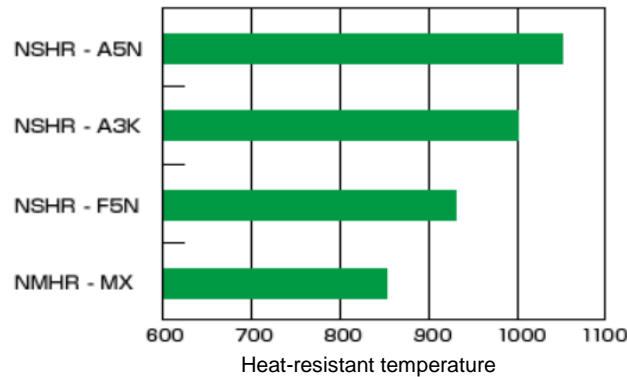


Hitachi Metals forecasts

3-3. Strengths of the Heat-Resistant Cast Steel (HERCUNITE™) Business

Extensive materials technology

- Withstand high temperatures generated by improvement in the combustion efficiency of gasoline engines
- Propose the optimal material for the purpose



Design & evaluation technology

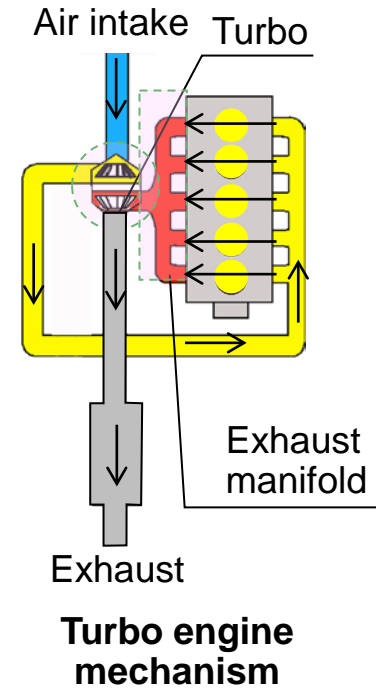
- Provide design support via CAE
- Make lighter weight, thinner, and improve castability

Processing technology

- Possess processing technology for hard-to-cut materials

Integrated manufacturing from casting to processing

- Optimize cost through process management
- Derive 80% or more of sales from overseas sales



Kyushu Works: Increase production capacity by more than 60%

Increase production capacity

- Increase capacity of the casting line and processing line

Optimize production technology

(Achieve differentiation through technology that is difficult to duplicate)

- Streamline casting by automating pouring of casting steel
- Achieve a high degree of efficiency in cutting hard-to-cut materials



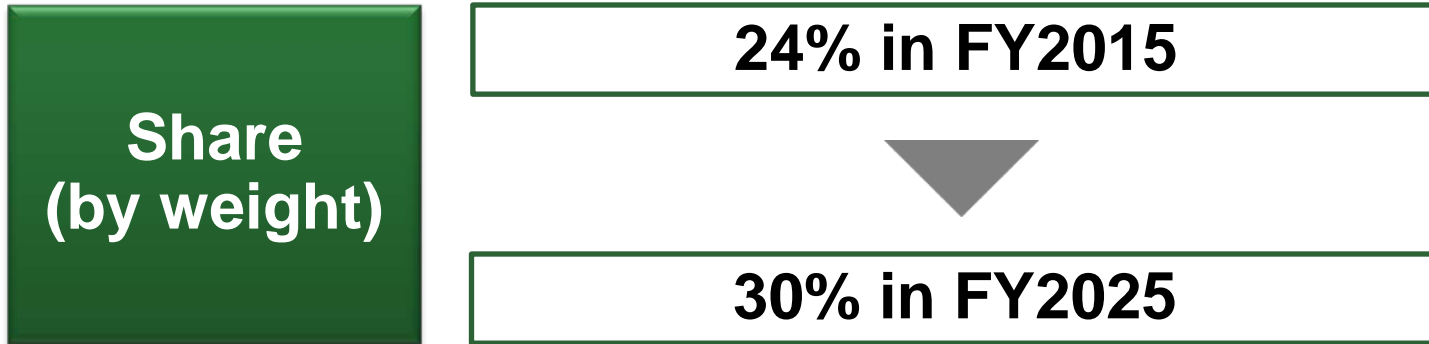
Bring online during 2H of FY2016



Achieve full production in FY2017 and consider increasing capacity further

3-5. Further Reinforcing Our Position as the Top Supplier of Heat-Resistant Cast Steel

Needs	Action Plan
Accommodate complex forms	Provide support for casting and processing of more complex forms for higher performance turbos such as twin scrolling
Reduce raw material costs	Take the market price of raw materials into consideration in launching new materials on the market (Achieve heat-resistance without using materials that have seen steep price rises)
High-performance high-quality	Consider introduction of IoT



Rapidly expand business scale and also improve the profit margin by increasing share in an expanding market

Help to improve environmental performance through heat-resistant cast steel

Share: Hitachi Metals projections

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4. Investment Plans

Cast steel business

- Install a line for large casting components in the U.S.
- Dedicate a plant in the U.S. exclusively to ductile cast iron and gray iron
- Introduce high-efficiency casting
- Streamline production equipment

Heat-resistant cast steel business

- Increase production capacity by more than 60% and streamline production equipment

Aluminum wheel business

- Streamline production equipment in the U.S. and Japan

Piping component business

- Flexible piping systems
Speed up pipe manufacturing and introduce a high-efficiency furnace for heat treatment

Capital investment: ¥64.0 billion (cumulative total for FY2016-FY2018)

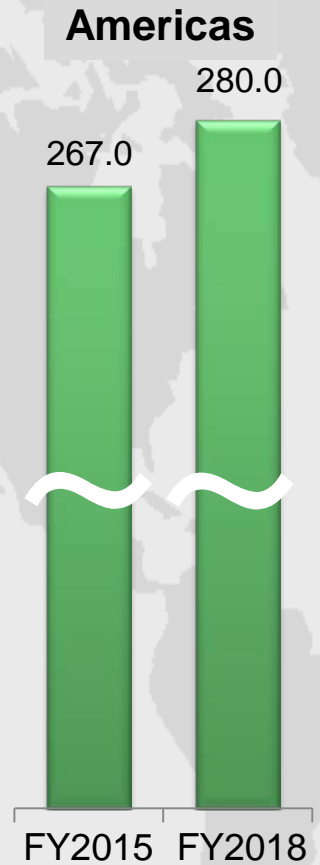
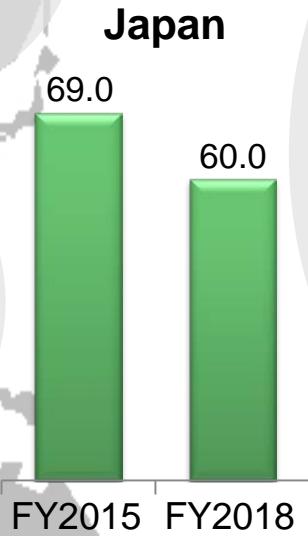
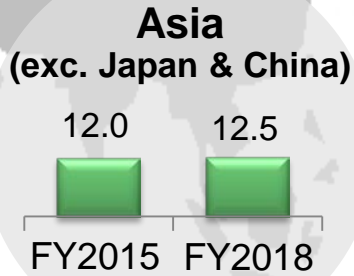
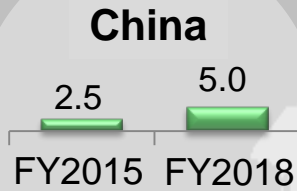
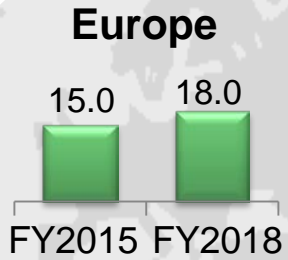
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5. Revenues by Region

(¥billions)



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**Accept the challenge of creating new value
by improving the foundation of *monozukuri*
to achieve global growth**

FY2018 Plan

Revenues:	¥375.0 billion
Adjusted operating income:	¥37.5 billion
Adjusted operating margin:	10%

This document contains forward-looking statements—such as results forecasts and management plans—that are not historical facts. All such forward-looking statements are based upon all available information and upon assumptions and projections that were deemed reasonable at the time the Company prepared this document. Changes to the underlying assumptions or circumstances could cause the actual results to differ substantially. The factors causing such differences include, but are not limited to, the following:

- Changes in economic conditions and regulations in the main markets where the Company operates, particularly Japan, the United States, Asia and Europe
- Sudden changes in technological trends
- Changes in competitive advantage and the capabilities of the Company and its subsidiaries and affiliates to develop and commercialize new products and businesses
- Fluctuations in the status of product markets, exchange rates and international commodity markets
- Changes in financing environment
- The capability of the Company and its subsidiaries and affiliates to cope with fluctuations in product supply and demand, the status of product markets, exchange rates and international commodity markets
- Protection of the Company's intellectual property, and securing of licenses to use the intellectual property of other parties
- Changes in the status of alliances with other parties for product development, etc.
- Fluctuations in Japanese stock markets



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