

Fiscal 2016 First Half Business Results

DOWA HOLDINGS CO.,LTD.

November 9, 2016

Overview of Operating Results

■ Consolidated Income Statements

Billion yen

	FY2015 H1 results (A)	FY2016 H1				Year on year changes (C – A)	
		forecast on May 10 (B)	results (C)	changes (C – B)			
Net Sales	208.2	185.0	184.7	(0.2)	(0%)	(23.5)	(11%)
Operating Income	20.2	11.5	13.3	1.8	16%	(6.9)	(34%)
Ordinary Income	20.6	10.5	13.5	3.0	29%	(7.0)	(34%)
Net Income	12.0	7.5	9.8	2.3	32%	(2.1)	(18%)

■ Key points of operating results

Segment	Operating income changes (billion yen)		Details of change
	Amount	Change (%)	
Environmental Management & Recycling	(0.6)	(19%)	- The volume of low-contaminated PCB treatment decreased. - In Southeast Asia, orders for oil-and natural gas-related waste declined.
Nonferrous Metals	(5.3)	(62%)	- Earnings decreased due to the appreciation of the yen, the decrease in metal prices, and the worsening of conditions for purchasing raw materials.
Electronic Materials	(1.8)	(39%)	- Sales of LEDs for smartphones declined. - Earnings fell due to the strong yen.
Metal Processing	0.5	+21%	- Copper rolled products remained firm for both automobiles and semiconductors.
Heat Treatment	0.2	+44%	- Demand for products for automobiles remained firm. - Fuel costs were reduced.

Metal prices: The prices of copper and indium declined slightly. The prices of precious metals, zinc, etc. increased.

Exchange rates: The yen remained strong, approx. 17 yen higher than in the same period of the previous year.

FY2016 Forecast Comparison (H1)

Billion yen

	FY2016 H1 Forecast (May 10, 2016)			FY2016 H1 results			Change		
	Net Sales	Operating Income	Ordinary Income	Net Sales	Operating Income	Ordinary Income	Net Sales	Operating Income	Ordinary Income
Environmental Management & Recycling	45.0	2.4	2.3	45.4	2.6	2.4	0.4	0.2	0.1
Nonferrous Metals	94.0	2.0	1.8	94.5	3.2	3.9	0.5	1.2	2.1
ElectronicMaterials	22.0	3.0	3.0	27.0	2.8	2.8	5.0	(0.1)	(0.1)
Metal Processing	36.0	2.8	2.9	35.0	3.2	3.2	(0.9)	0.4	0.3
Heat Treatment	13.0	1.0	0.9	11.5	0.8	0.7	(1.4)	(0.1)	(0.1)
Other/Elimination	(24.9)	0.3	(0.4)	(28.8)	0.5	0.4	(3.9)	0.2	0.8
Total	185.0	11.5	10.5	184.7	13.3	13.5	(0.2)	1.8	3.0

Forecast for Fiscal 2016

Billion yen

	FY2015 results	FY2016 forecast	Change
Net Sales	406.5	385.0	(21.5)
Operating Income	35.0	29.0	(6.0)
Ordinary Income	35.0	29.0	(6.0)
Net Income	21.8	20.0	(1.8)

- ✓ Ordinary income in the first half of FY2016 exceeded the initial forecast and also remains higher than the initial full-year forecast.
- ✓ However, The full-year financial forecast has remained unchanged due to uncertainties remaining in the prospects for the market environment such as foreign exchange rates and metal prices.

FY2016 Forecast Comparison (full year)

Billion yen

	Previous Forecast (May 10, 2016)			Revised Forecast (Nov 7, 2016)			Change		
	Net Sales	Operating Income	Ordinary Income	Net Sales	Operating Income	Ordinary Income	Net Sales	Operating Income	Ordinary Income
Environmental Management & Recycling	97.0	6.8	6.8	94.0	5.9	6.1	(3.0)	(0.9)	(0.7)
Nonferrous Metals	193.0	7.2	7.6	197.0	8.0	8.2	4.0	0.8	0.6
Electronic Materials	44.0	5.8	5.9	52.0	5.2	5.3	8.0	(0.6)	(0.6)
Metal Processing	73.0	6.1	6.2	70.0	6.5	6.6	(3.0)	0.4	0.4
Heat Treatment	27.5	2.4	2.3	25.0	2.3	2.2	(2.5)	(0.1)	(0.1)
Other/Elimination	(49.5)	0.7	0.2	(53.0)	1.1	0.6	(3.5)	0.4	0.4
Total	385.0	29.0	29.0	385.0	29.0	29.0	0.0	0.0	0.0

FY2016 Assumptions and Sensitivities(H2)

Sensitivity (Operating Income / H2)			Million yen
	Assumptions	Fluctuation	Sensitivity
Exchange rate	105.0 ¥/\$	± 1 ¥/\$	220
Copper	4,600 \$/t	±100 \$/t	20
Zinc	2,300 \$/t	±100 \$/t	200
Indium	200 \$/kg	±100 \$/kg	300

* Exchange rate sensitivity; Nonferrous Metals 180 million yen and Electronic Materials 40 million yen.

Metal Prices and Foreign Exchange Rates

	FY2015 Average			FY2016 Average			(ref.)
	H1	H2	Full Year	H1 results	H2 assumption	Full Year estimation	Oct. 2016
Exchange rate: (¥/\$)	121.8	118.5	120.1	105.3	105.0	105.1	103.8
Copper: (\$/t)	5,653	4,778	5,215	4,752	<u>4,600</u>	4,676	4,732
Zinc: (\$/t)	2,019	1,643	1,831	2,084	<u>2,300</u>	2,192	2,314
Indium: (\$/kg)	369	235	302	222	<u>200</u>	211	199

* The underlined parts have been changed from the assumptions of forecast announced on August 5, 2016.

Sensitivity is based on assumptions that the Company assumes to be reasonable at the time of publication. Actual effects may differ materially due to a variety of factors.

Ref.1 Year-on-Year Comparison (H1)

Billion yen

	FY2015 H1 results			FY2016 H1 results			Change		
	Net Sales	Operating Income	Ordinary Income	Net Sales	Operating Income	Ordinary Income	Net Sales	Operating Income	Ordinary Income
Environmental Management & Recycling	49.7	3.2	3.0	45.4	2.6	2.4	(4.2)	(0.6)	(0.5)
Nonferrous Metals	110.4	8.6	9.4	94.5	3.2	3.9	(15.8)	(5.3)	(5.5)
Electronic Materials	25.1	4.7	4.9	27.0	2.8	2.8	1.9	(1.8)	(2.0)
Metal Processing	40.3	2.6	2.7	35.0	3.2	3.2	(5.2)	0.5	0.4
Heat Treatment	12.4	0.6	0.5	11.5	0.8	0.7	(0.9)	0.2	0.2
Other/ Elimination	(29.7)	0.3	(0.1)	(28.8)	0.5	0.4	0.9	0.1	0.5
Total	208.2	20.2	20.6	184.7	13.3	13.5	(23.5)	(6.9)	(7.0)

Ref.2 Year-on-Year Comparison (full year)

Billion yen

	FY2015 Results			FY2016 Forecast			Change		
	Net Sales	Operating Income	Ordinary Income	Net Sales	Operating Income	Ordinary Income	Net Sales	Operating Income	Ordinary Income
Environmental Management & Recycling	98.3	6.3	6.1	94.0	5.9	6.1	(4.3)	(0.4)	(0.0)
Nonferrous Metals	214.9	13.3	13.9	197.0	8.0	8.2	(17.9)	(5.3)	(5.7)
Electronic Materials	48.3	8.0	8.2	52.0	5.2	5.3	3.6	(2.8)	(2.9)
Metal Processing	77.4	4.9	5.0	70.0	6.5	6.6	(7.4)	1.5	1.5
Heat Treatment	24.1	1.3	1.1	25.0	2.3	2.2	0.8	0.9	1.0
Other/ Elimination	(56.5)	1.1	0.4	(53.0)	1.1	0.6	3.5	(0.0)	0.1
Total	406.5	35.0	35.0	385.0	29.0	29.0	(21.5)	(6.0)	(60.0)

Ref.3 Cost Outlook for Prospecting Projects

Billion Yen

	FY2013	FY2014	FY2015	FY2016			FY2017	FY2018	On and after FY2019
				H1	H2 assumption	total			
Alaska (Palmer)	Prospecting (incurred a total amount of \$22M, acquired a 49% share interest)						(F/S) → (Development/certification and licensing)		
Operating expenses (prospecting expenses)	0.3	0.8	0.7	0.1	0.5	0.6	Hundreds of million yen/year		
Mexico (Los Gatos)		F/S (incurring a total amount of \$50M, acquired a 30% share interest)					(Development/certification and licensing) → (Start of production)		
Non-operating expenses (Equity in losses of affiliates)	-	-	1.6	0.7	0.2	0.9			
Extraordinary loss (Loss on valuation of investment securities)	-	1.2	1.5	-	-	-			
<p>■ Impact on each profit stage (indicates loss)</p>									
Operating Income	(0.3)	(0.8)	(0.7)	(0.1)	(0.5)	(0.6)			
Ordinary Income	(0.3)	(0.8)	(2.3)	(0.8)	(0.7)	(1.5)			
Net Income	(0.3)	(2.0)	(3.8)	(0.8)	(0.7)	(1.5)			

Palmer, Alaska

Prospecting will continue in FY2017.

Los Gatos, Mexico

A feasibility study will be completed at the end of 2016.

Subsequently, the project will shift to the development stage.

Challenges in Our Business and Focus for the Futures

Environmental Management & Recycling

Situation in FY2016

- Waste treatment: Waste emissions decreased slightly. Price competition in low-contaminated PCB waste intensified.
- Soil remediation: Many projects come from the Tohoku area, and demand is firm.
- Southeast Asia: Economic growth continues and total waste emissions are increasing. The volume of oil drilling sludge has been low.

Future actions

■ Waste treatment

- Capture demand from customers shifting from in-house treatment to outsourcing.
- Increase treatment of municipal waste.
- Low-contaminated PCB waste: Increase cost competitiveness and collection from new customers.

■ Soil remediation

- Increase the treatment of naturally contaminated soil by acquiring orders for onsite treatment.

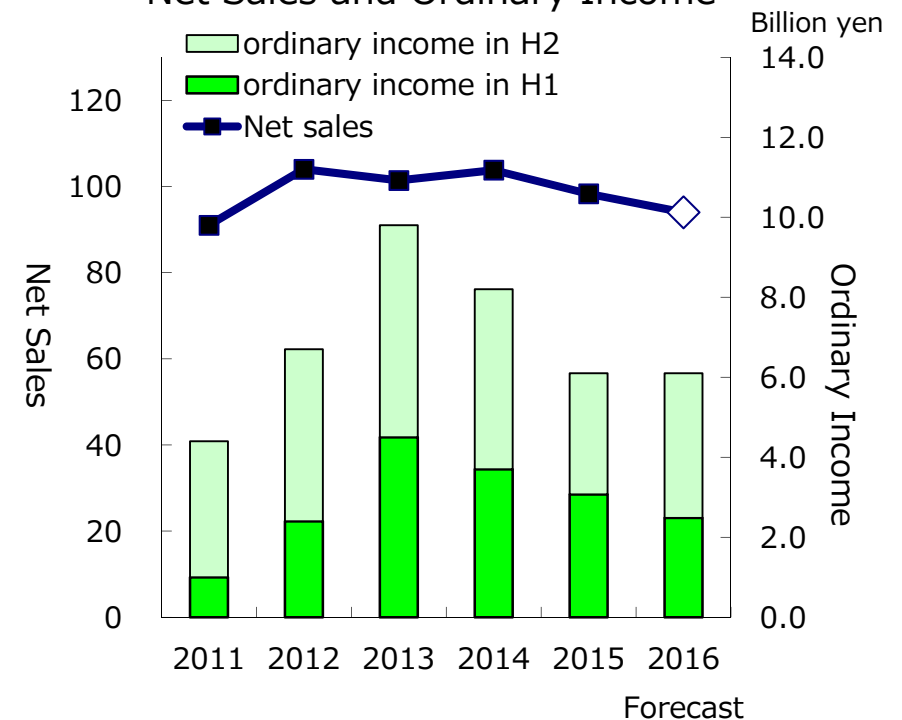
■ Recycling

- Increase in the collection of metal recycling materials from overseas such as the United State and Asia.

■ Southeast Asia

- Implement an environmental impact assessment for the establishment and expansion of controlled landfills.

Net Sales and Ordinary Income



Activities in Domestic Waste Treatment Business

Low-contaminated PCB Waste

The number of treatment business operators of waste electric appliances is increasing.

Growth of emissions remains moderate despite the large volume stored.

→Price competition intensifies in the short term.

- Increase competitiveness: increase treatment efficiency and reduce prior equipment dismantle costs.
- Cooperate with cleaning treatment companies: increase collection from small account customers.

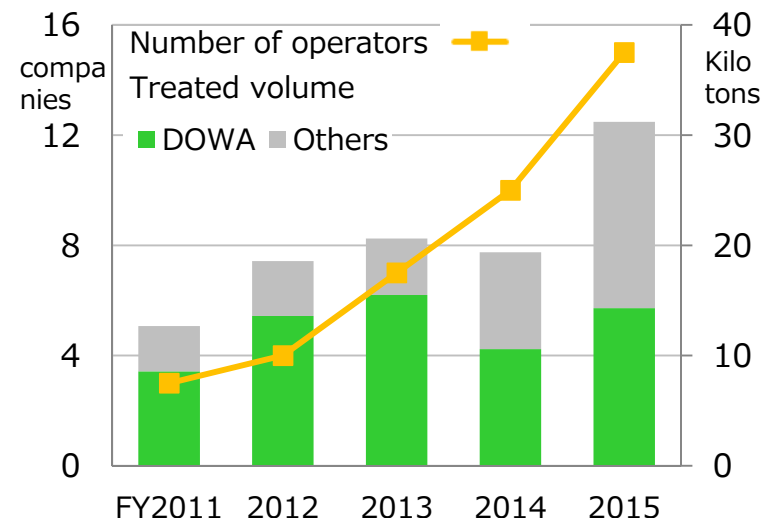
Municipal Waste

Shortage of controlled landfills, increase in demand for recycling, and need to reduce the financial burden of local governments.

→Increase in treatment outsourced to the private sector.

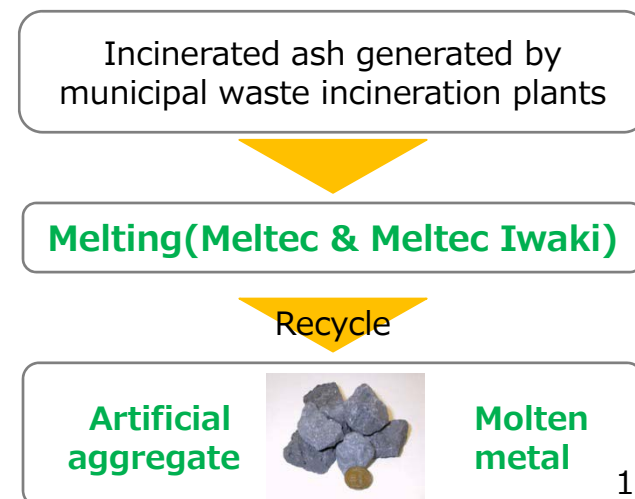
- Expand the business of melting and recycling incinerated ash. Triple the treatment capacity by establishing Meltec Iwaki, etc.
- Increase orders received for incineration treatment and controlled landfill business as well.

Number of operators of waste electric appliances & treated volume



* Developed by Dowa based on public information.

Flow of melting and recycling incinerated ash



Nonferrous Metals

Situation in FY2016

- The prices of zinc and precious metals remained stable. The yen remains strong on the exchange market.
- Domestic demand for metal for construction is low.
- The collection of raw materials for platinum group metals is beginning to grow due to the recovery of precious metal prices.

Future actions

■ Precious metals and copper

- Enhance the ability to treat impurities and the ability to collect byproduct metals at Kosaka Smelting & Refining.

■ PGM

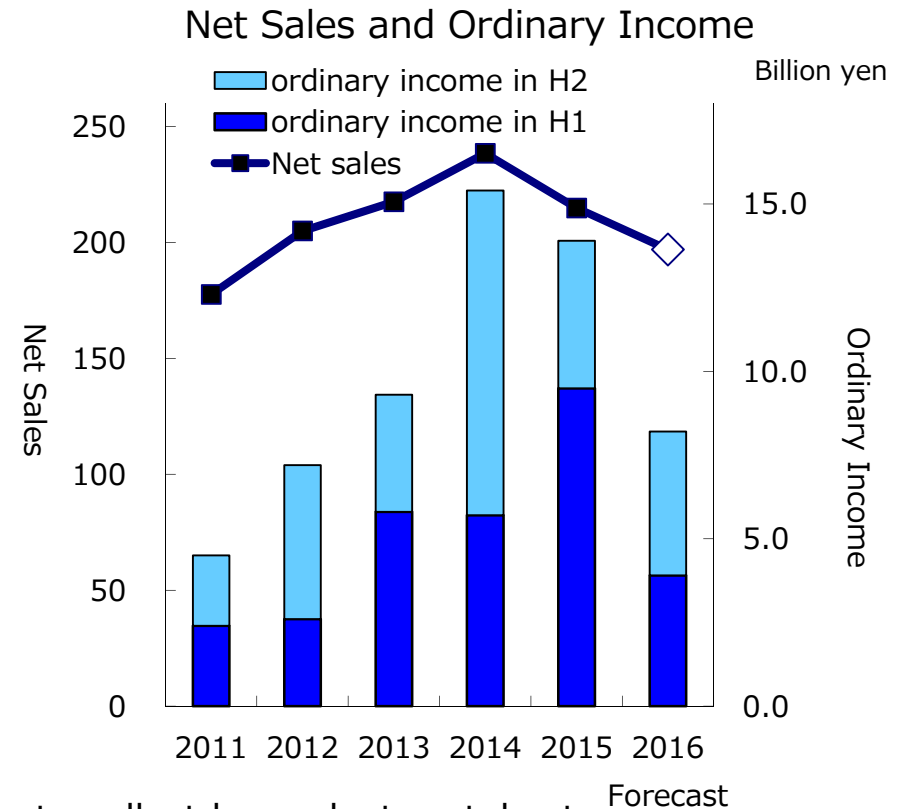
- Increase Nippon PGM's treatment capacity and collection from overseas.

■ Zinc

- Install a new roasting furnace at Akita Zinc, continue full production, and increase competitiveness.

■ Resources

- Complete the feasibility study work of Los Gatos Project (December 2016) and shift to the development stage.



Improving Platinum Group Recycling

Used automotive catalysts

The global volume continues to increase due to tighter environmental regulations.

■ Increasing Nippon PGM's capacity

- 1Q FY2016: Installed a new melting furnace.
 - Will improve each process from now on.
- Increase treatment capacity by 40% by 2020.

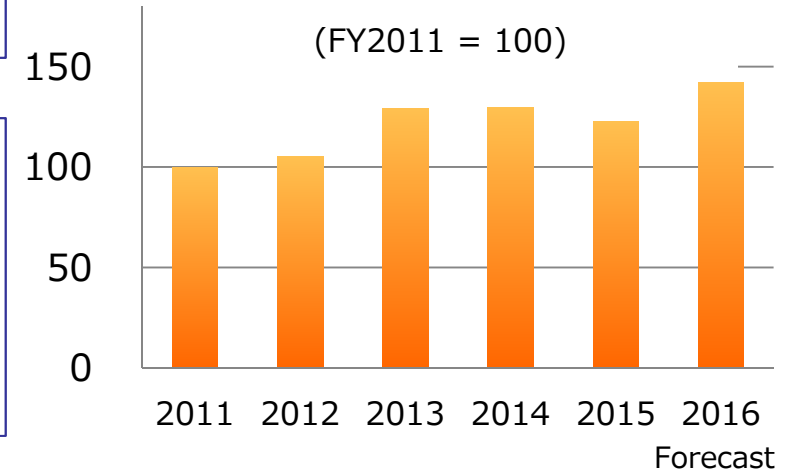
■ Increase collection

- Increase sales staff in North America and Europe.
- Increase collection from small account customers.



Used automotive catalysts

Volume of automotive catalysts collected



Improve both collection and operation to capture growing demand.

Electronics Materials

Situation in FY2016

- Production adjustment of Sensor LEDs continues.
- Silver powder for new forms of energy remains strong, particularly in the North American and Asian markets.
- Magnetic powder for recording media remains strong for use for data archives due to a substantial capacity increase.

Future actions

■ Semiconductors

- Accelerate the development of new products and their use for optical sensors.

■ Electronics materials

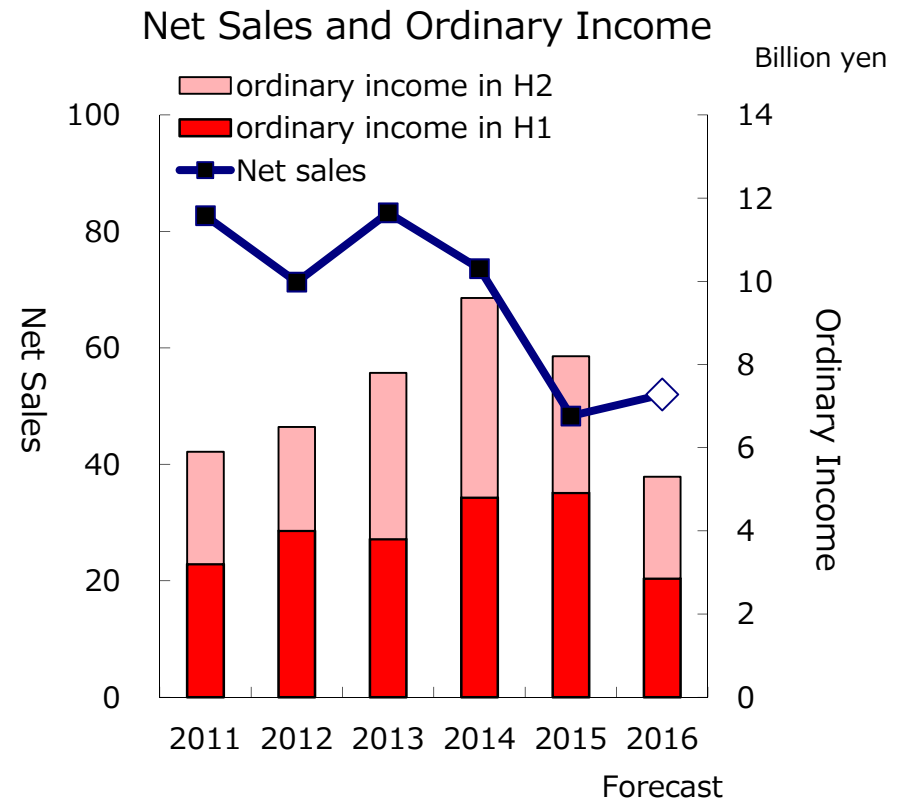
- Increase productivity and personnel to meet strong demand for silver powder.

■ Magnetic materials

- Improve the properties of magnetic powder for data tapes in response to further capacity growth.

■ New development

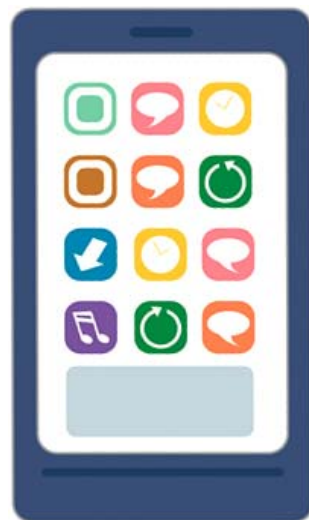
- Obtain new certifications for materials used in electronic circuit components and next-generation touch panels.



Development of New Products for Sensors and Electronic Circuits



Heart rate sensor (back side)



Distance measurement sensor (back side)

Electronic circuits: small capacitors, etc. (inside)

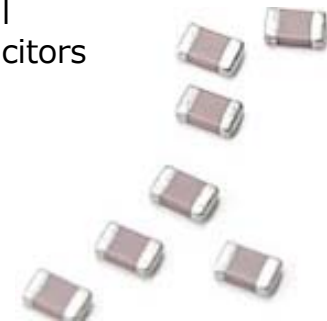
For sensors

- Increase in sensors per unit of smartphone or wearable device.
→ Developing new LED products appropriate for measuring vital data.
- New sensing methods are emerging in the field of optical sensors.
→ Accelerate the development of new laser-based products and their use.

For electronic circuits

- Components are becoming increasingly smaller and capacity is becoming increasingly larger due to an increase in data communication volumes.

small capacitors



More diversified electrode materials and sophisticated property requirements.

- Improve the properties of alloy powder and enhance product lines.

Metal Processing

Situation in FY2016

- Copper rolled products: Sales of products for automobiles and semiconductors remained stable, and those for smartphones increased.
- Plating: Sales of products for automobiles remained stable due to increased electrical parts installation.
- Metal-ceramic substrates: Sales of products for industrial machinery have been recovering since 2Q, but those for rail transportation are stagnant.

Future actions

■ Copper strip products

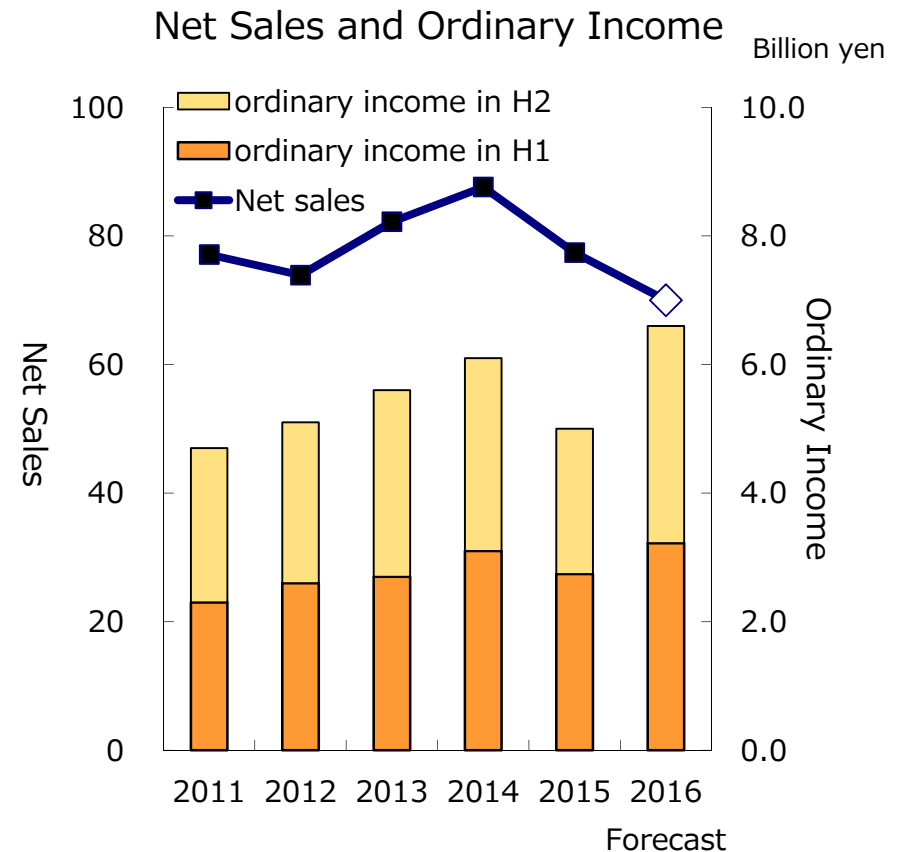
- Install mass production facilities for new products for automobiles (FY2016).
- Boost sales of high performance copper alloys for smartphones using facilities in China.

■ Electroplating

- Establish a plant in Mexico (FY2017) and increase production in Japan and Thailand.
- Develop new plating for high voltage terminals for hybrid vehicles.

■ Metal-ceramic substrates

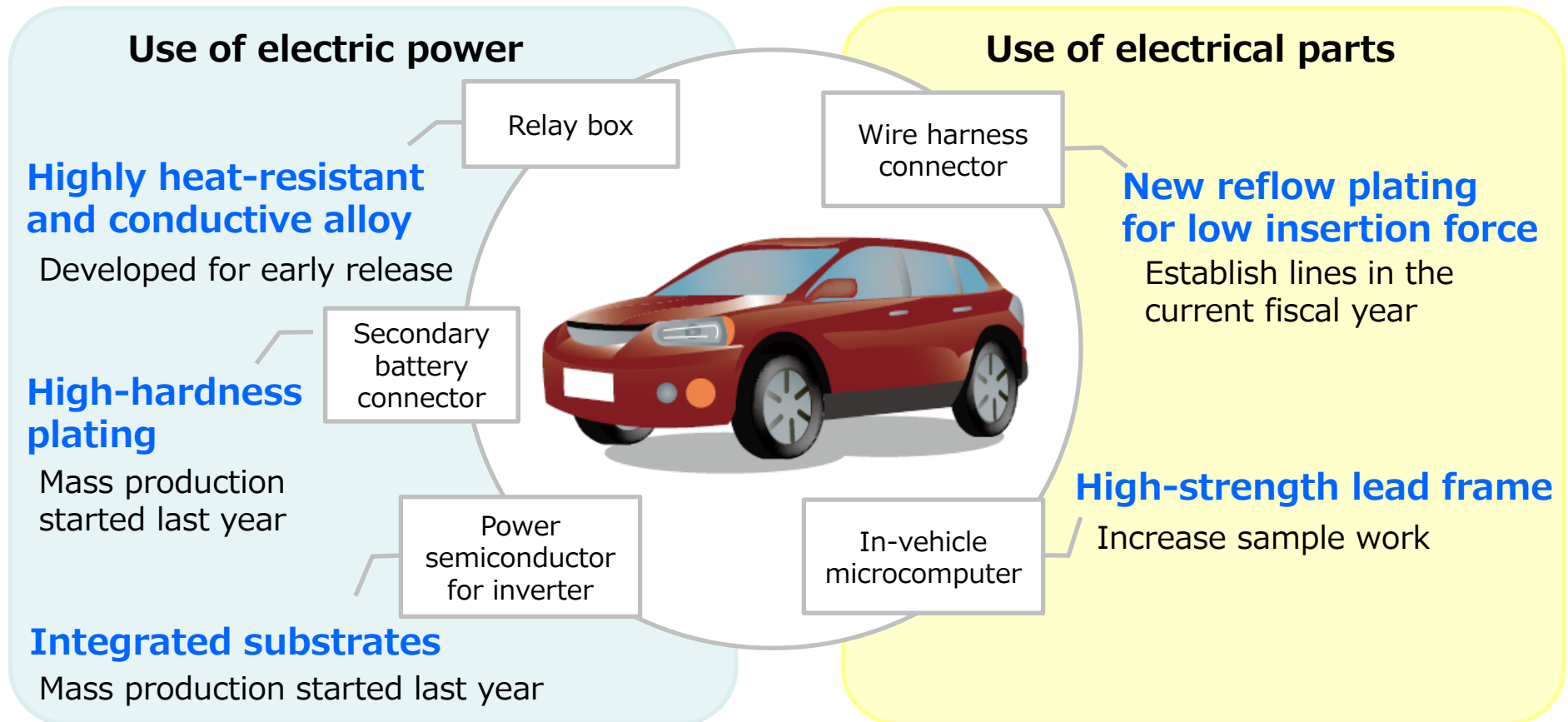
- Increase the use of new lightweight, small products with high heat radiation properties.



Development and Sales Expansion of New Products for Automobiles

Increase in the use of electric power and electric components in automobiles

Increase in the production of hybrid vehicles, use of connectors and switches



Develop and boost sales of next-generation products that meet automobile-related demand.

Heat Treatment

Situation in FY2016

- Industrial furnace: Capital investment made towards the end of the fiscal year. Projects and demand for maintenance are increasing.
- Heat treatment processing: Orders for automobiles remain stable, but orders for construction equipment have stalled.

Future actions

■ Overseas business

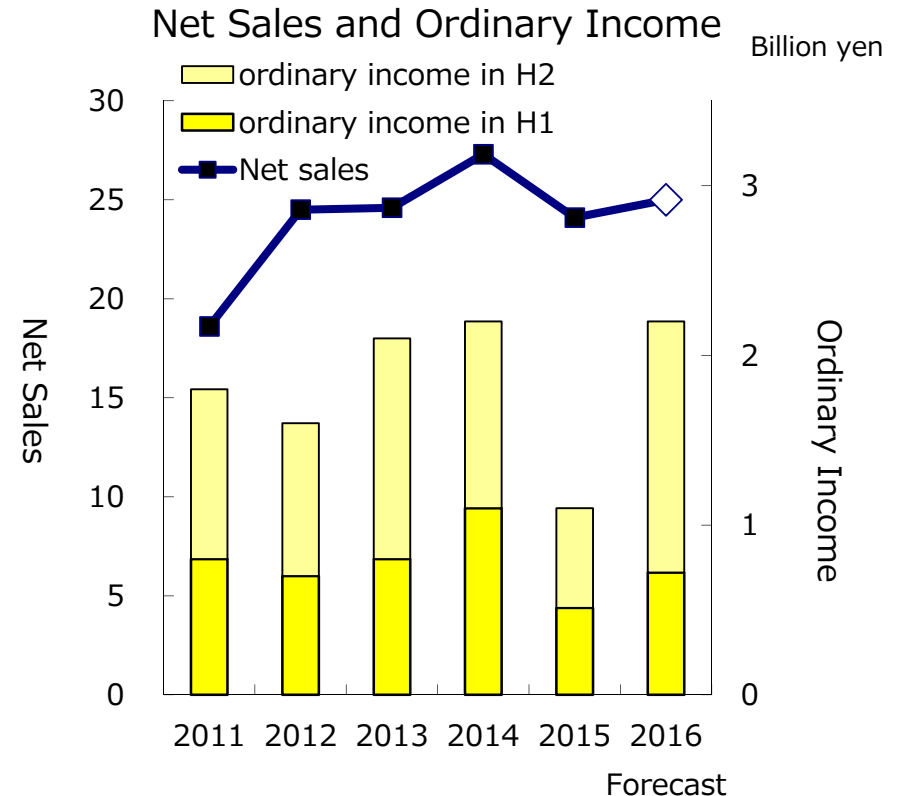
- Establish a heat treatment processing plant in Mexico (October 2016).
- Boost sales of maintenance parts made in India to meet demand for local procurement in Southeast Asia.

■ Domestic business

- Establish a heat treatment processing business at Hamamatsu-Kita Plant (2nd half of FY2016).
- Increase competitiveness by raising the productivity of industrial furnaces and reducing manufacturing costs.

■ R&D

- Commercialize low-cost, small furnaces suited for small lots and develop use in new fields.



Improving and Expanding Heat Treatment Business

■ Heat treatment

Mexico

- Complete the construction of a heat treatment processing plant (October 2016).
- Increase the range of treatment depending on the entry of customers into the local market.

Japan

- Construct a new plant at Hamamatsu-Kita Plant.
- Gradually expand in line with customers' plans for production growth.

→ **Increase production capacity according to growing demand.**



Mexico plant (San Luis Potosí)



Hamamatsu-kita plant (Hamamatsu city)

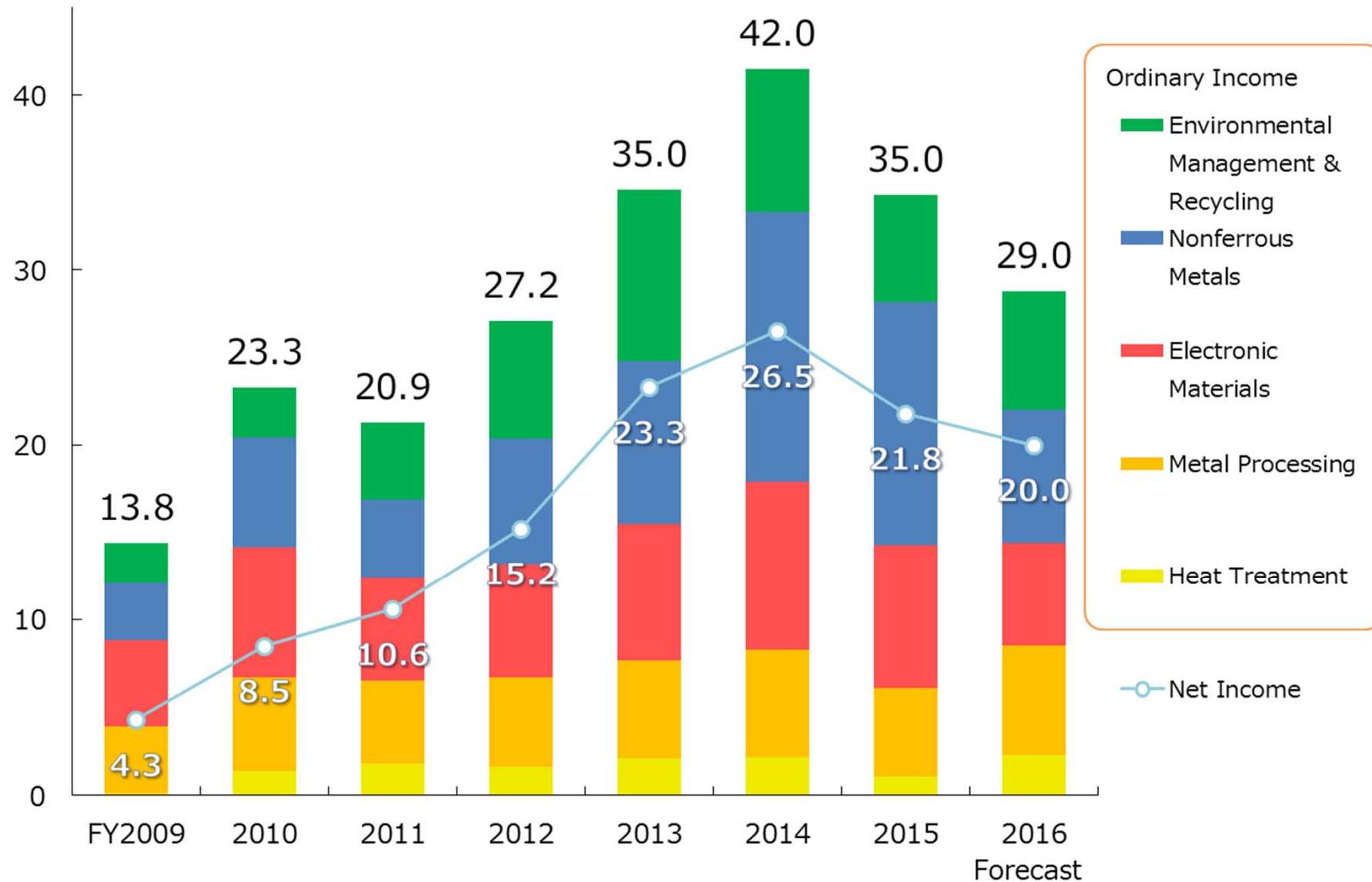
■ Industrial furnace

- Increase alliances at overseas bases such as India.
- Promote the reduction of manufacturing costs and increased productivity.
- Reduce overseas maintenance expenses through local procurement.

▶ **Capture growing overseas demand based on an increase in automobile production.**

Ordinary Income and Net Income

(Billion yen)



DOWA

* Forward-looking statements made in this document, such as business forecast, are based on the information available at this time and on certain premises that the Company assumes to be reasonable. Actual performance may differ materially from such forecasts due to a variety of factors.