

# FY 2018 / JGP2020

Business Results for the Fiscal Year Ended March 31, 2019  
Medium-Term Management Plan “JGP2020”

**JSW**

May 18, 2019

The Japan Steel Works, LTD.

Naotaka Miyauchi, Representative Director & President

The performance forecasts and other forward-looking statements included in this report are based on the information that was available to The Japan Steel Works, LTD. (the “Company”) and certain assumptions deemed to be reasonable at the time this report was prepared, and the actual results may differ significantly from these forecasts due to a variety of reasons.

Unless otherwise noted, values of “previous forecast” means those released on November 14, 2018.

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Reference (47~50) :

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# Financial Results for the Fiscal Year Ended March 31, 2019



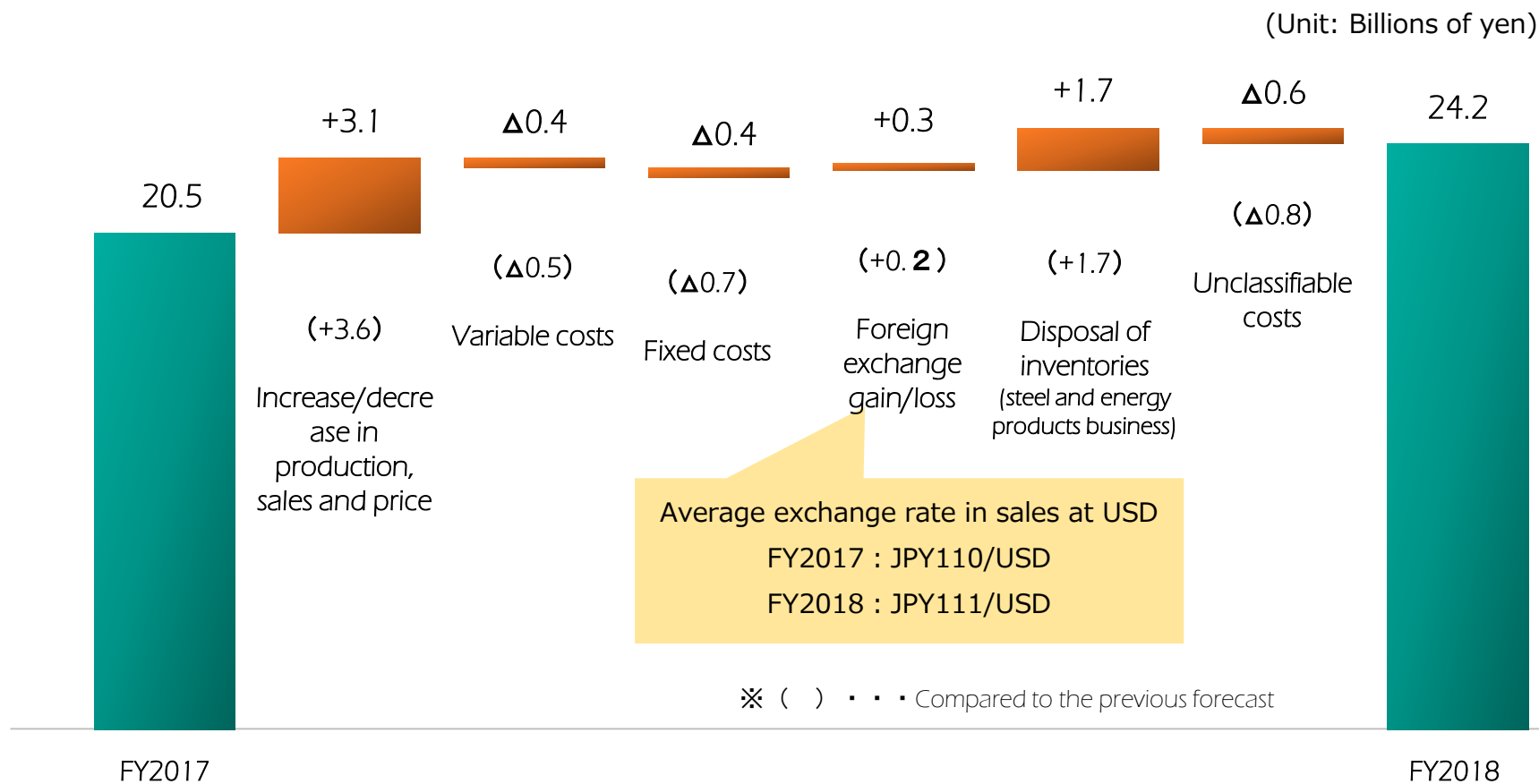
Net Sales and operating income increased from FY2017, while orders received decreased.

(Unit : Billions of yen)

	FY2017 (A)	FY2018		Compared to the previous year (C) - (A)	Compared to the previous forecast (C) - (B)
		Previous forecast (B)	Actual results (C)		
Orders received	235.6	230.0	216.1	△19.5	△13.9
Net sales	211.7	227.0	220.1	8.4	△6.9
Operating income (ratio)	20.5 9.7%	24.0 10.6%	24.2 11.0%	3.7 1.3%	0.2 0.4%
Ordinary income	22.1	25.0	27.9	5.8	2.9
Profit(Loss)	10.7	20.0	19.9	9.2	△0.1
Profit(Loss) per share(yen)	145.77	272.15	271.69	125.92	△0.46
Dividends per share(yen)	37.5	50.0	55.0	17.5	5.0



Operating income increased by 18%, due to the increase in production and sales.



Net Sales increased and orders received decreased from FY2017 in both segments.

## Industrial Machinery Products Business

(Unit : Billions of yen)

	FY2017 (A)	FY2018		Compared to the previous year (C) - (A)	Compared to the previous forecast (C) - (B)
		Previous forecast (B)	Actual results (C)		
Orders received	186.2	180.0	175.7	Δ10.5	Δ4.3
Net sales	169.0	177.0	173.6	4.6	Δ3.4
Operating income (ratio)	23.7 14.0%	24.2 13.7%	23.5 13.6%	Δ0.2 Δ0.4%	Δ0.7 Δ0.1%

## Steel and Energy Products Business

	FY2017 (A)	FY2018		Compared to the previous year (C) - (A)	Compared to the previous forecast (C) - (B)
		Previous forecast (B)	Actual results (C)		
Orders received	43.0	45.0	34.1	Δ8.9	Δ10.9
Net sales	36.3	45.0	41.2	4.9	Δ3.8
Operating income (ratio)	Δ0.9 Δ2.8%	2.2 4.9%	2.6 6.5%	3.5 9.3%	0.4 1.6%

Orders received declined, due to the market downturns of film and sheet manufacturing equipment, molding machines and FPD equipment.

(Unit : Billions of yen)

	Net sales and operating income					Orders Received				
	FY2017 (A)	FY2018		Compared to the previous year (C) - (A)	Compared to the previous forecast (C) - (B)	FY2017 (D)	FY2018		Compared to the previous year (F) - (D)	Compared to the previous forecast (F) - (E)
		Previous forecast (B)	Actual results (C)				Previous forecast (E)	Actual results (F)		
Plastic production and processing machinery	50.2	63.0	52.5	2.3	△10.5	63.8	63.0	59.3	△4.5	△3.7
Molding machines (consolidated)	64.5	69.0	72.7	8.2	3.7	72.4	71.0	70.6	△1.8	△0.4
FPD equipment (consolidated)	15.1	15.0	16.4	1.3	1.4	14.2	14.0	6.0	△8.2	△8.0
Other products	28.4	19.0	20.4	△8	1.4	23.6	21.0	28.1	4.5	7.1
Consolidated subsidiaries, etc.	10.7	11.0	11.6	0.9	0.6	12.2	11.0	11.7	△0.5	0.7
Total	169.0	177.0	173.6	4.6	△3.4	186.2	180.0	175.7	△10.5	△4.3
Operating income	23.7	24.2	23.5	△0.2	△0.7					



Net sales increased while orders received decreased from FY2017.

(Unit : Billions of yen)

## Net sales and operating income

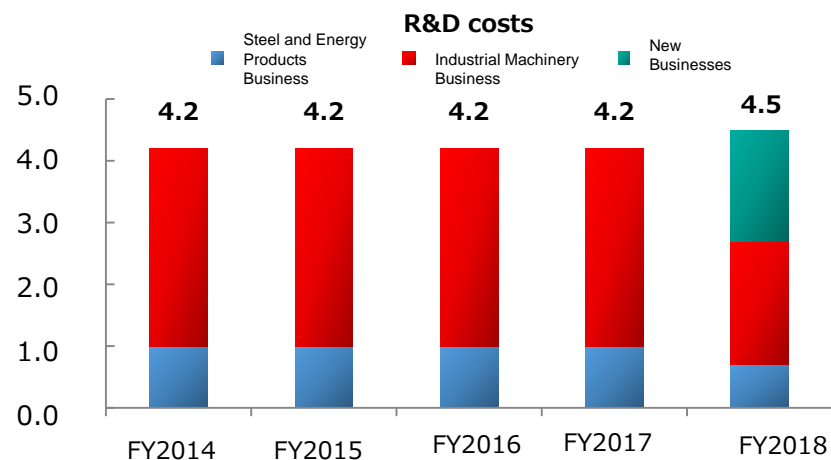
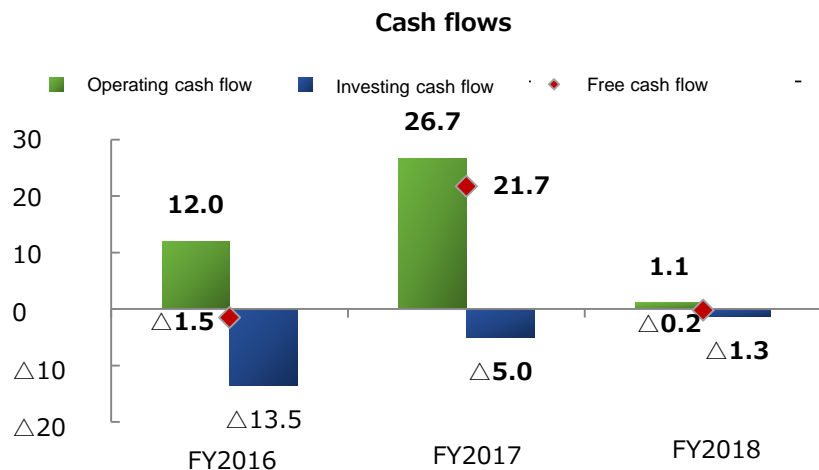
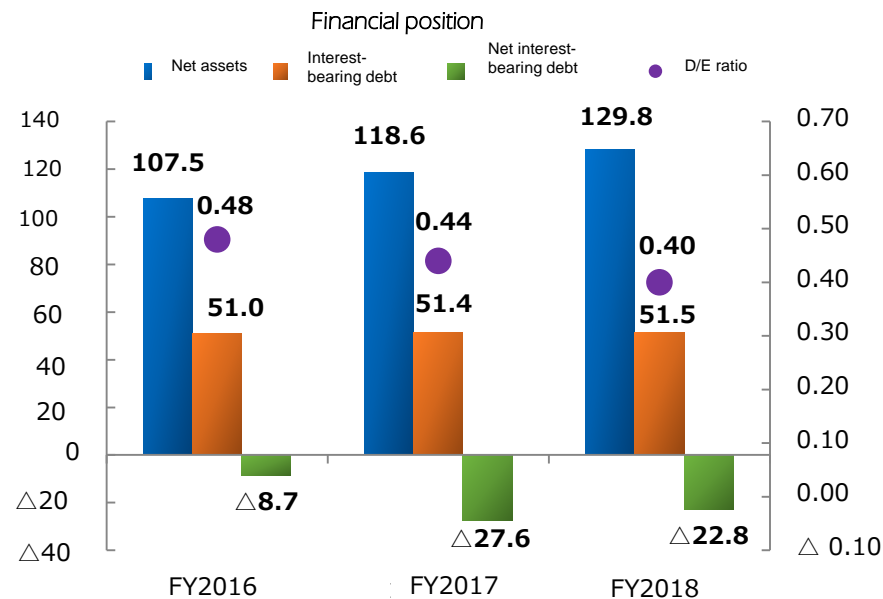
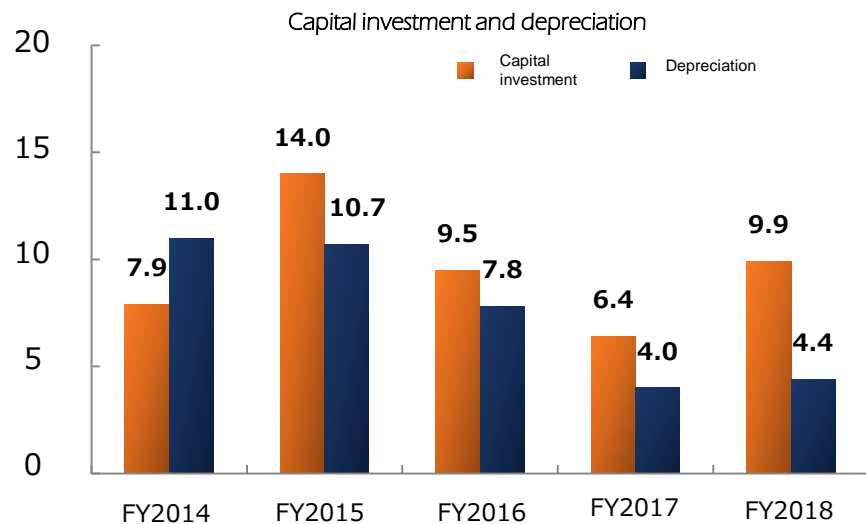
## Orders Received

	FY2017 (A)	FY2018		Compared to the previous year (C) - (A)	Compared to the previous forecast (C) - (B)
		Previous forecast (B)	Actual results (C)		
Electric and nuclear power	17.2	14.0	12.5	Δ4.7	Δ1.5
Clad steel plates and pipes	7.0	15.0	13.0	6.0	Δ2.0
Other products	6.2	10.0	9.5	3.3	Δ0.5
Consolidated subsidiaries, etc.	5.9	6.0	6.2	0.3	0.2
Total	36.3	45.0	41.2	4.9	Δ3.8
Operating income	Δ0.9	2.2	2.6	3.5	0.4

	FY2017 (D)	FY2018		Compared to the previous year (F) - (D)	Compared to the previous forecast (F) - (E)
		Previous forecast (E)	Actual results (F)		
Electric and nuclear power	13.0	15.0	6.7	Δ6.3	Δ8.3
Clad steel plates and pipes	13.9	15.0	12.6	Δ1.3	Δ2.4
Other products	10.3	9.0	8.4	Δ1.9	Δ0.6
Consolidated subsidiaries, etc.	5.8	6.0	6.4	0.6	0.4
Total	43.0	45.0	34.1	Δ8.9	Δ10.9

# Capital Investment/Depreciation, Cash Flows, Financial Position and R&D costs

(Unit : Billions of yen)





# Projection for the Fiscal Year Ending March 31, 2020

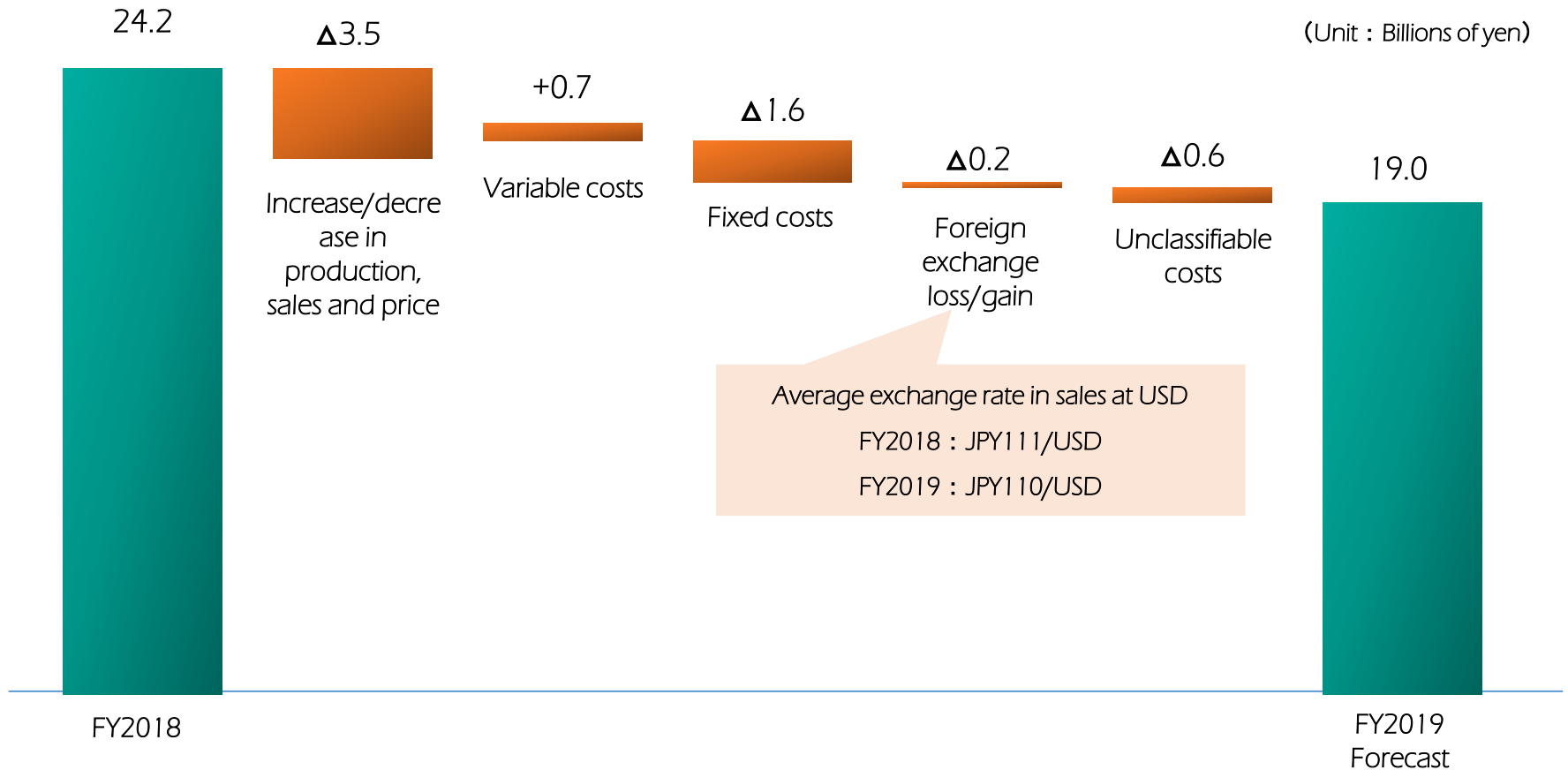


Orders received and net sales are expected to increase from FY2018, while operating income is to decrease.

(Unit : Billions of yen)

	FY2018 (A)	FY2019			Compared to the previous year (B) - (A)
		First fiscal half	Second fiscal half	Full year (B)	
Orders received	216.1	115.0	120.0	235.0	18.9
Net sales	220.1	112.5	112.5	225.0	4.9
Operating income (ratio)	24.2 11.0%	9.5 8.4%	9.5 8.4%	19.0 8.4%	△5.2
Ordinary income	27.9	10.5	9.5	20.0	△7.9
Profit(Loss)	19.9	7.5	6.5	14.0	△5.9
Profit(Loss) per share(yen)	271.69	102.05	88.45	190.50	△81.19
Dividends per share(yen)	55.0	27.5	27.5	55.0	0

Operating income are expected to decrease by 21%, due to the lower production level and increase in fixed costs.



Orders received are expected to increase from FY2018 in both segments.

## Industrial Machinery Products Business

(Unit : Billions of yen)

	FY2018 (A)	FY2019 Forecast (B)	Compared to the previous year (B) - (A)
Orders received	175.7	190.0	14.3
Net sales	173.6	180.0	6.4
Operating income (ratio)	23.5 13.6%	20.0 11.1%	Δ3.5

## Steel and Energy Products Business

	FY2018 (A)	FY2019 Forecast (B)	Compared to the previous year (B) - (A)
Orders received	34.1	40.0	5.9
Net sales	41.2	40.0	Δ1.2
Operating income (ratio)	2.6 6.3%	2.0 5.0%	Δ0.6



Orders received and net sales are expected to increase from FY2018, while Operating income is to decrease.

(Unit : Billions of yen)

	Net sales and operating income			Orders Received		
	FY2018 (A)	FY2019 Forecast (B)	Compared to the previous year (B) - (A)	FY2018 (C)	FY2019 Forecast (D)	Compared to the previous year (D) - (C)
Plastic production and processing machinery	52.5	62.0	9.5	59.3	67.0	7.7
Molding machines (consolidated)	72.7	65.0	Δ7.7	70.6	65.0	Δ5.6
FPD equipment (consolidated)	16.4	15.0	Δ1.4	6.0	15.0	9.0
Other Products	20.4	24.0	3.6	28.1	28.0	Δ0.1
Consolidated subsidiaries, etc.	11.6	14.0	2.4	11.7	15.0	3.3
Total	173.6	180.0	6.4	175.7	190.0	14.3
Operating income	23.5	20.0	Δ3.5			

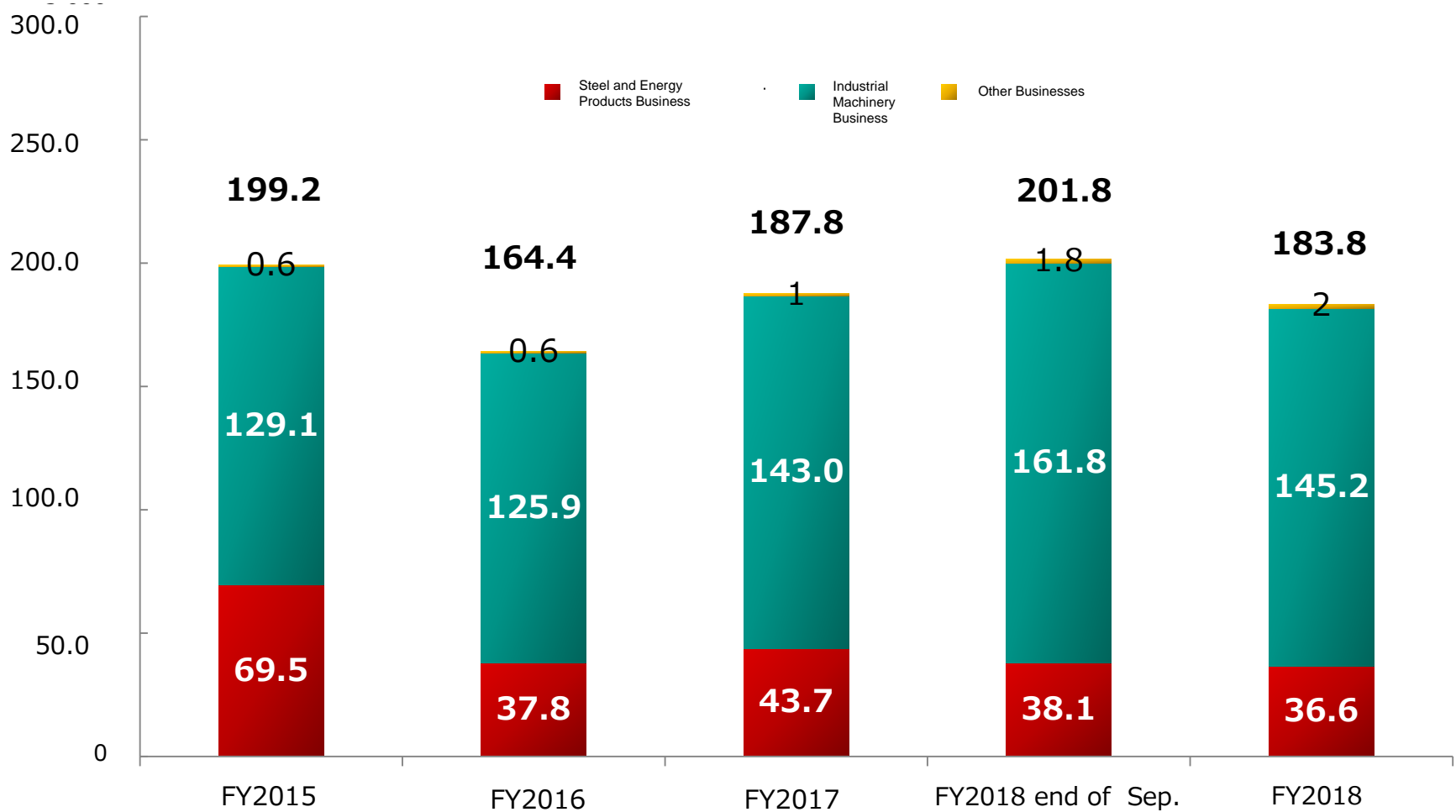
Orders received are expected to increase from FY2018, while net sales and operating income are to decrease.

(Unit : Billions of yen)

	Net sales and operating income			Orders Received		
	FY2018 (A)	FY2019 Forecast (B)	Compared to the previous year (B) - (A)	FY2018 (C)	FY2019 Forecast (D)	Compared to the previous year (D) - (C)
Electric and nuclear power	12.5	12.0	Δ0.5	6.7	9.5	2.8
Clad steel plates and pipes	13.0	16.0	3.0	12.6	15.0	2.4
Other products	9.5	5.0	Δ4.5	8.4	8.5	0.1
Consolidated subsidiaries, etc.	6.2	7.0	0.8	6.4	7.0	0.6
Total	41.2	40.0	Δ1.2	34.1	40.0	5.9
Operating income	2.6	2.0	Δ0.6			

(Unit: Billions of yen)

## Trends of order backlog by segments





# Progress of Medium-Term Management Plan “JGP2020”



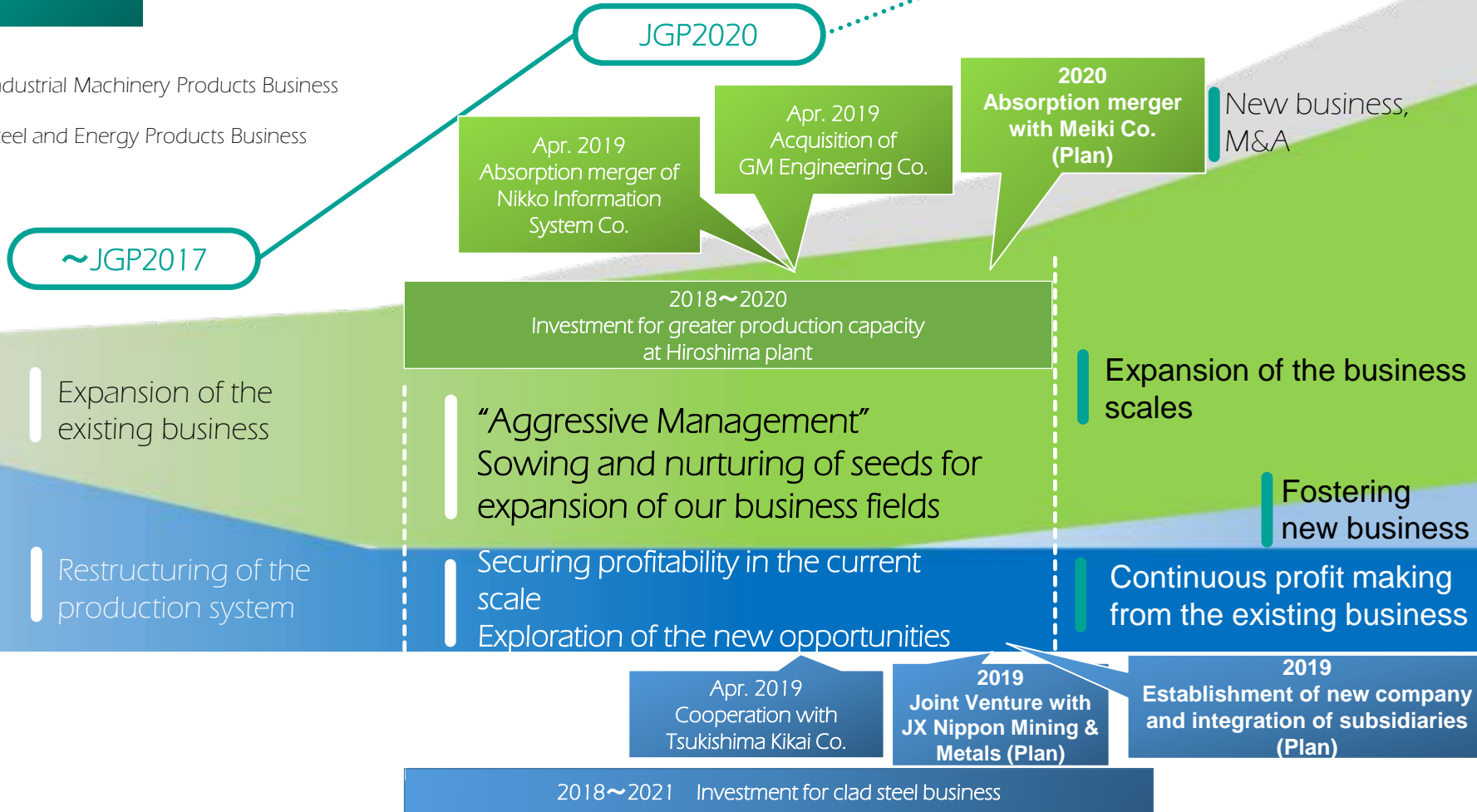
## JGP2020

# Developing Foundations for Growth

To establish the ground to realize our growth in the “Next 10 Years”


FY2030

- Industrial Machinery Products Business
- Steel and Energy Products Business



Changes in market conditions for industrial machinery products is affecting the numeric targets. However, our basic strategies remain effective.

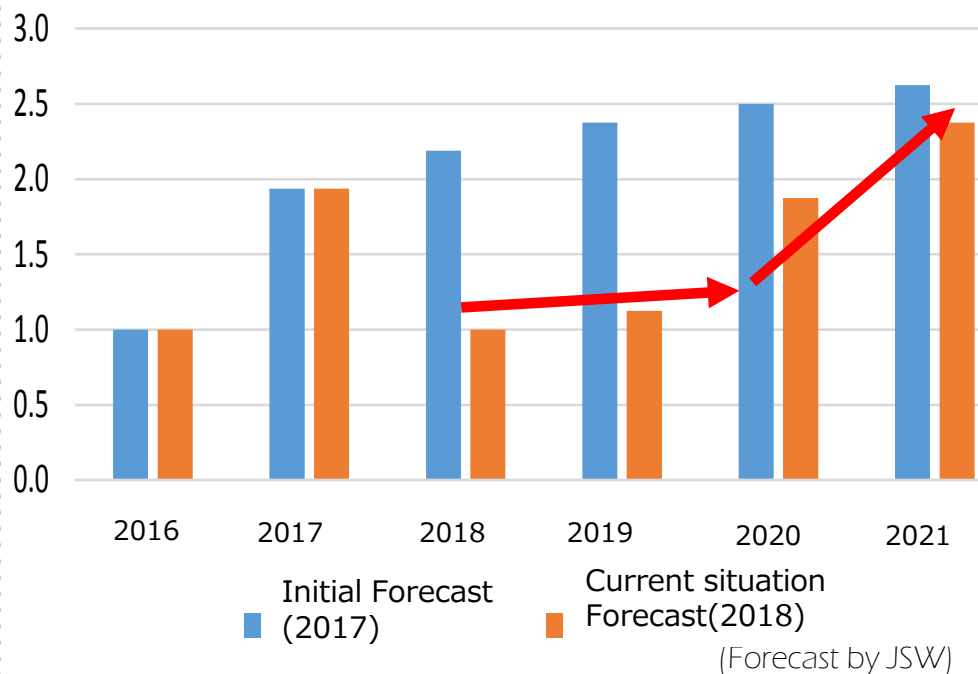
Due to the drastic change in our business environment, we are revising the numerical targets in the medium-term management plan ending FY2020 (net sales; over 260 billion yen, operating income; over 30 billion yen). The new numerical targets will be disclosed as soon as possible, after deliberate consideration. However, we are certain that our basic strategies are still effective. So we keep the measures for implementing it.

Industrial Machinery Products Business	Market Conditions	Prospect
Film and Sheet Manufacturing Equipment	Market in china is inactive due to the excess of supply capability for films. On the other hand, markets in Japan and South Korea are brisk.	
Pelletizers	Orders are increasing in China and other Asian markets.	
Twin Screw Extruders	Shift of materials for automobile parts toward plastics is serving as a spur.	
FPD Equipment	Market downturn and cancelation of orders occurred the previous year. Recovery is expected through investments for 5G and 8K TVs.	
Molding Machines	Market is gradually going down, beginning from the second half of FY2018. The future prospect is unclear.	



## Market Conditions for Separator Film Manufacturing Equipment

Market Forecast for Separator Film Manufacturing Equipment



The data are expressed as relative values, with FY2016 being 1.

### I. Japan and South Korea

\*Demand for high-end equipment (automobile application use) is steady.

\*We already have established the position as the No.1 manufacturer.

### II. China

\*Supplying capability for films is in excess due to the large orders in FY2017.

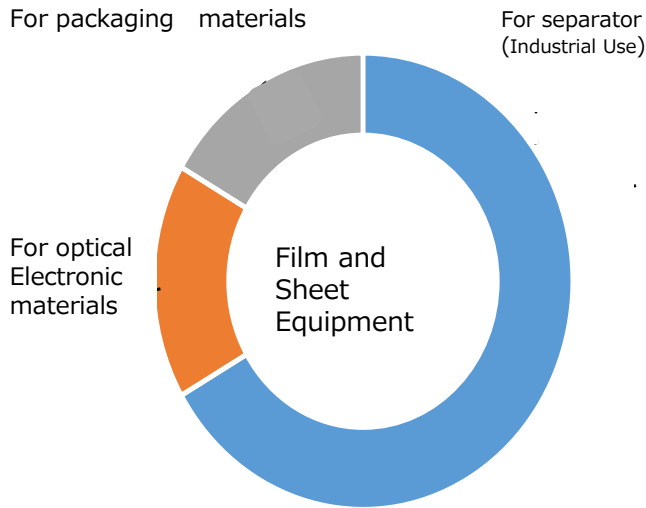
→ "Natural selection" among low-end film manufacturers is beginning.

\*Mood for investment is growing among high-end separator manufacturers.

→ Market for high-end films is shifting toward demand excess from equivalence.

\*Recovery is expected to begin around FY2020.

## Portfolio for Film and Sheet Equipment in JSW



## Efforts for Realization of "JGP2020"

- ◆ We firmly maintain the largest share in the world of film and sheet equipment for separator films.
- Investment for higher production capability has finalized in Hiroshima plant.(FY2018)
- High-performance equipment has launched that enables production of wider films at a higher speed. (order reception;FY2018, shipment;FY2019)
- New simultaneous biaxial stretching system has launched in FY2018. At the same time, the new model is installed at our test centers, which are expected to contribute for the development of new materials (super engineering plastics, barrier film) by our customers.

	JGP2017	JGP2020	JGP2023
For separator (Industrial Use)			
For optical Electronic materials			
For packaging materials			



Simultaneous Biaxial Stretching System



Sequential Biaxial Stretching System

# The Top of Overall Plastic Machinery Manufacturers in the World



## Pelletizers

produce basic raw materials for plastics (pellets).



Pellets

Features :

We supply one of the largest pelletizers that produce 70 tons of pellets per hour.

Market Conditions :

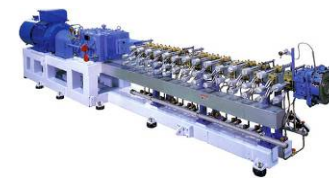
Investment for petrochemical plant is active in China and other Asian economies.

Market Share :

35-40% of the world.

## Twin Screw Extruders

produce high-performance plastic pellets by mixing additives into basic pellets.



High-performance Pellets

Features :

We supply the largest extruders of the world. Differentiated technology that simplifies customer's manufacturing process is our advantage.

Market Conditions :

Growing proportionally with the automobiles market.

Market Share :

20% of the world.

## Film and Sheet Equipment

produce various plastic films and sheets.



Features :

Broad lineup from high-performance (optical or industrial use) to general purpose.

Market Conditions :

Demand in industrial use (separators) is growing.

Market Share :

35-40% of the world.

## Injection Molding Machines

produce various plastic injection molded products.



Parts for automobiles (air spoiler)

Features :

Broad lineup from large to small, that responds to the various needs.

Market Conditions :

Automotive sector is growing.

Market Share :

35-40% of the world.

## Blow Molding Machines

produce various blow molded products.



Fuel tank for automobiles

Features :

Differentiated multilayer technology.

Market Conditions :

Brisk in Asia and North America.

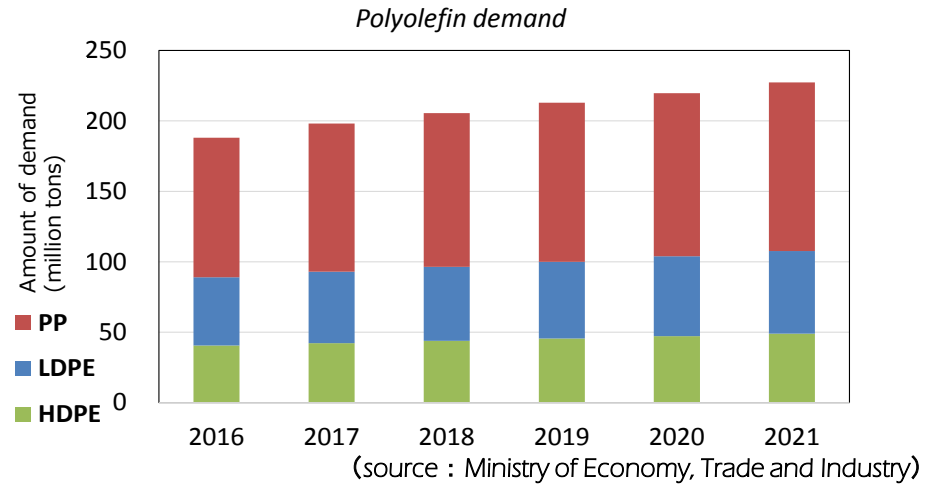
Market Share :

30% of the world.

## Pelletizers

### Market Conditions

- ◆ Demand for polyolefin resin, the raw material for pellets, is expected to increase by 4% per year. Trend of the number of inquiry for new equipment is also steady.



### Efforts for Realization of "JGP2020"

- ◆ For the expansion of our 35-40% market share

○ The only one manufacturer in the world with a broad lineup of pelletizers, who offers the best pelletizers that suit customer's use (types of plastics).

○ Putting one of the largest pelletizers in the world on the market.

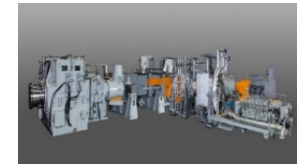
- FY2018 : MP387 (for PP), CIM510 (for PE), P700 (for LDPE)
- FY2019 and later : CMP443, CIM560, P800 are planned, following the actual demand.

○ Enhancement of non-price competitiveness through differentiated technologies.

- The world's most capable cutting equipment (planned to be launched in FY2019)
- Full automatic start up pelletizer (planned to be launched in FY2020)



CMP (for PP)



CIM (for PE)



P series (for LDPE)

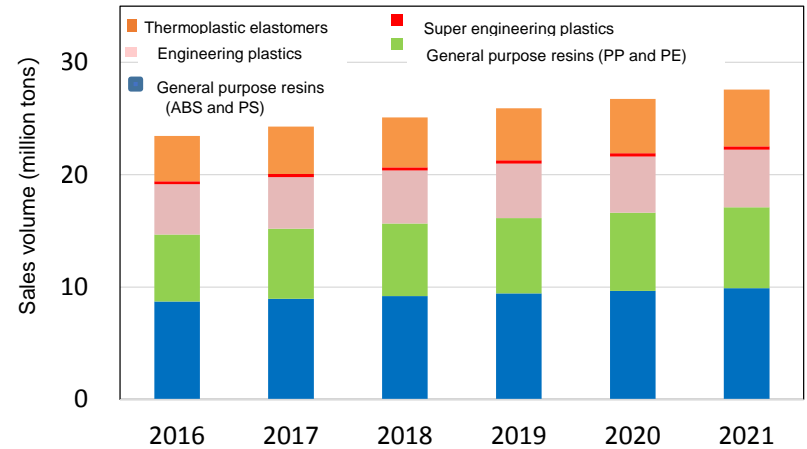
※ Polyolefin resin...polypropylene (PP) and polyethylene (PE) are the typical examples.

## Twin Screw Extruders

### Market Conditions

- ◆ Shift of materials for automobile parts toward plastics is accelerating.
- ◆ Application of plastic is expanding in various fields through development of technologies.
  - Carbon fiber reinforced carbon composite materials, cellulose nanofibers, etc.
  - Introduction of production technologies for human friendly and environmentally friendly plastics. (VOC reduction, recyclable plastics)
- ◆ Polarization toward “high-performance purpose” and “general purpose,” through TEX (high-end machine) by JSW and TEK (standard machine) by SMP.

Global Compounds Market

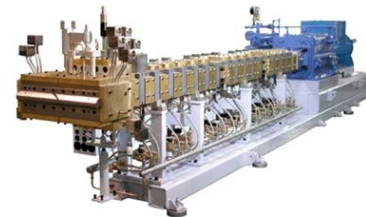


(Source : Fuji Chimera Research Institute, Fuji Keizai)

## Efforts for Realization of “JGP2020”

### ◆ Reaching for the top share in the world

- Enrichment of the three technical centers; Hiroshima plant as the central, United States (Detroit), and Germany (Dusseldorf).
- Coverage of specialized fields (elastomer, high-performance resin, dewatering and devolatilizing, reaction, etc.) and forefront fields (long-fiber composite material, etc.)
- AI and IoT technologies
  - Preventive maintenance function (FY2016)
  - Driving support technology (FY2018)



TEX54αIII  
(High-end machine by JSW)



TEK58  
(Global standard machine by SMP)

※SMP ... SM Platek, a subsidiary in South Korea.

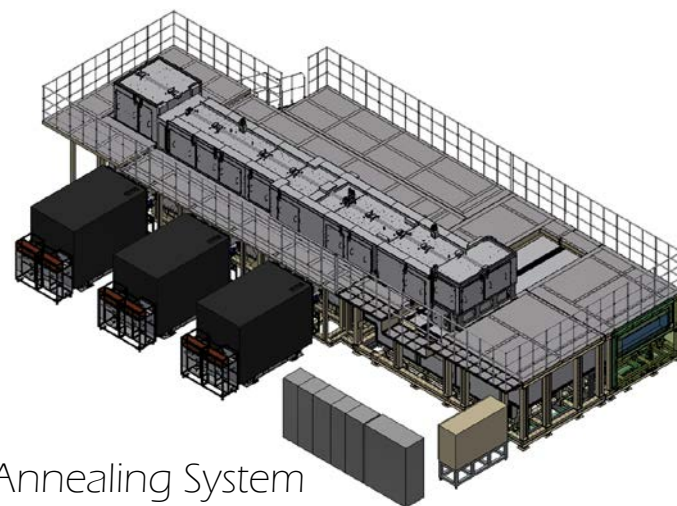


## ■ Laser Annealing System for Medium or Small Sized FPDs

- Growth of smart phone market is slowing down in the world.
- Rise in investment for OLED display production equipment in China is delaying.
  - ⇒ Cancellation of orders occurred last year, due to the revision of our customer's investment plan.
  - ⇒ Harsh condition for attaining orders is expected this year, because of the retard in recovery of the market.

## ■ New Laser Annealing System for High-end TVs

- 8K TVs are slow to spread  
(expected to be later than FY2021).
  - ⇒ Keep our effort for early order reception through continuous product development.

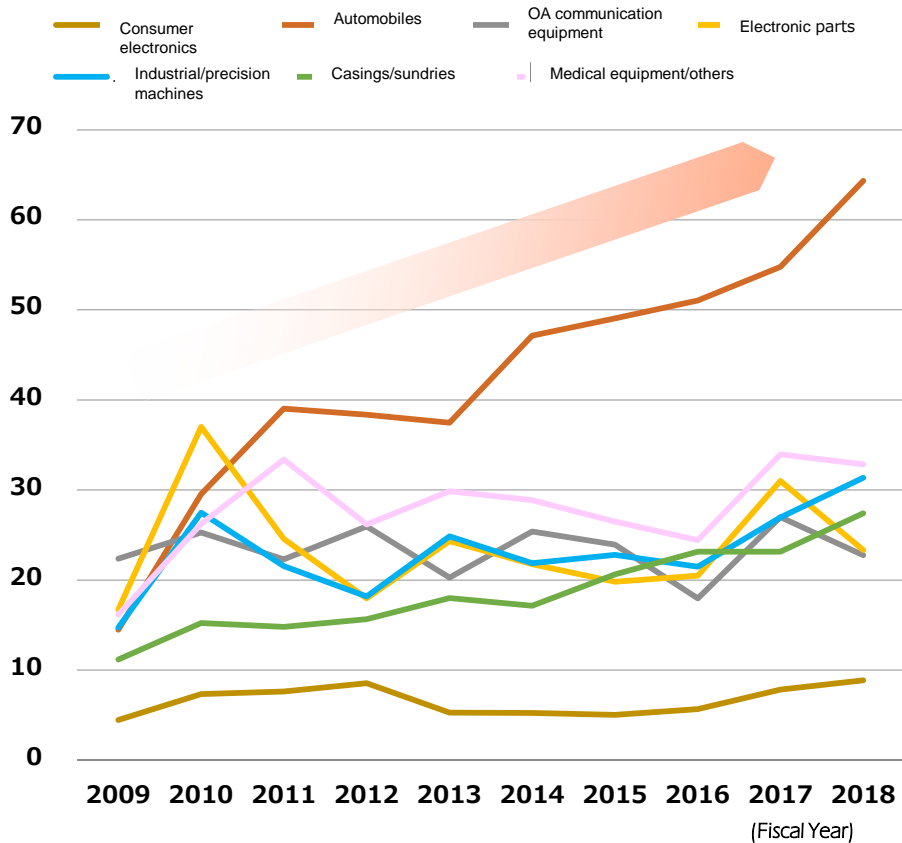


New Laser Annealing System

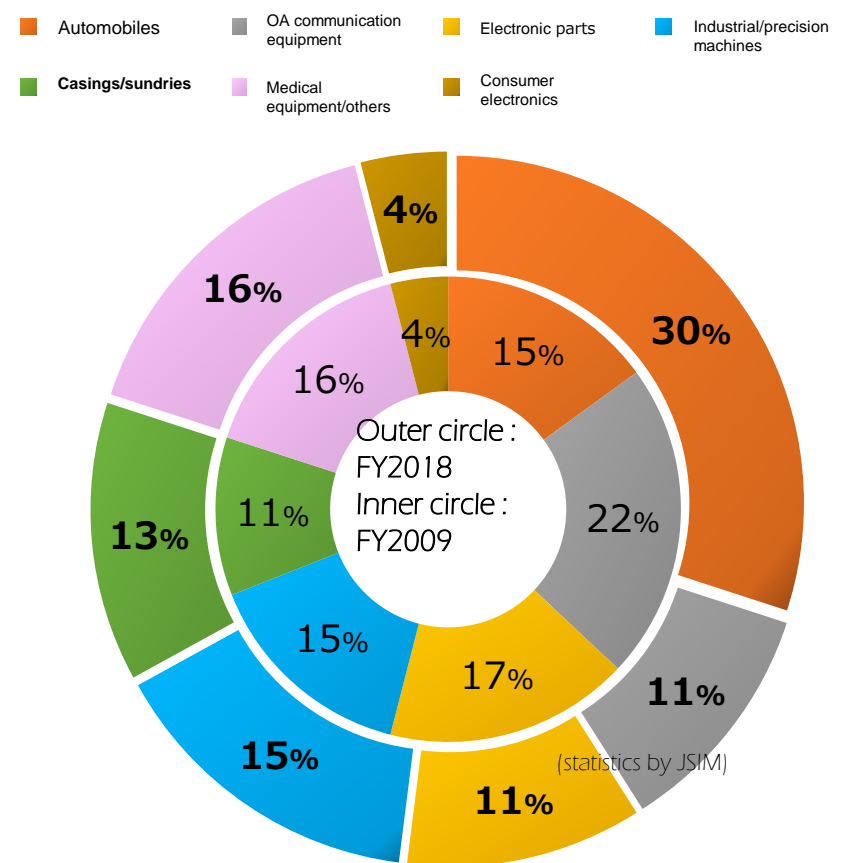


The number of shipment largely increased in this 10 years, after the fall affected by the financial crisis (“Lehman shock”). Automotive related fields are the drivers of the growth, which account for 30% of the market.

Trends of the number of shipments for Japan and other Asian economies by fields of application



Shares in the number of shipments for Japan and Other Asian economies by fields of application

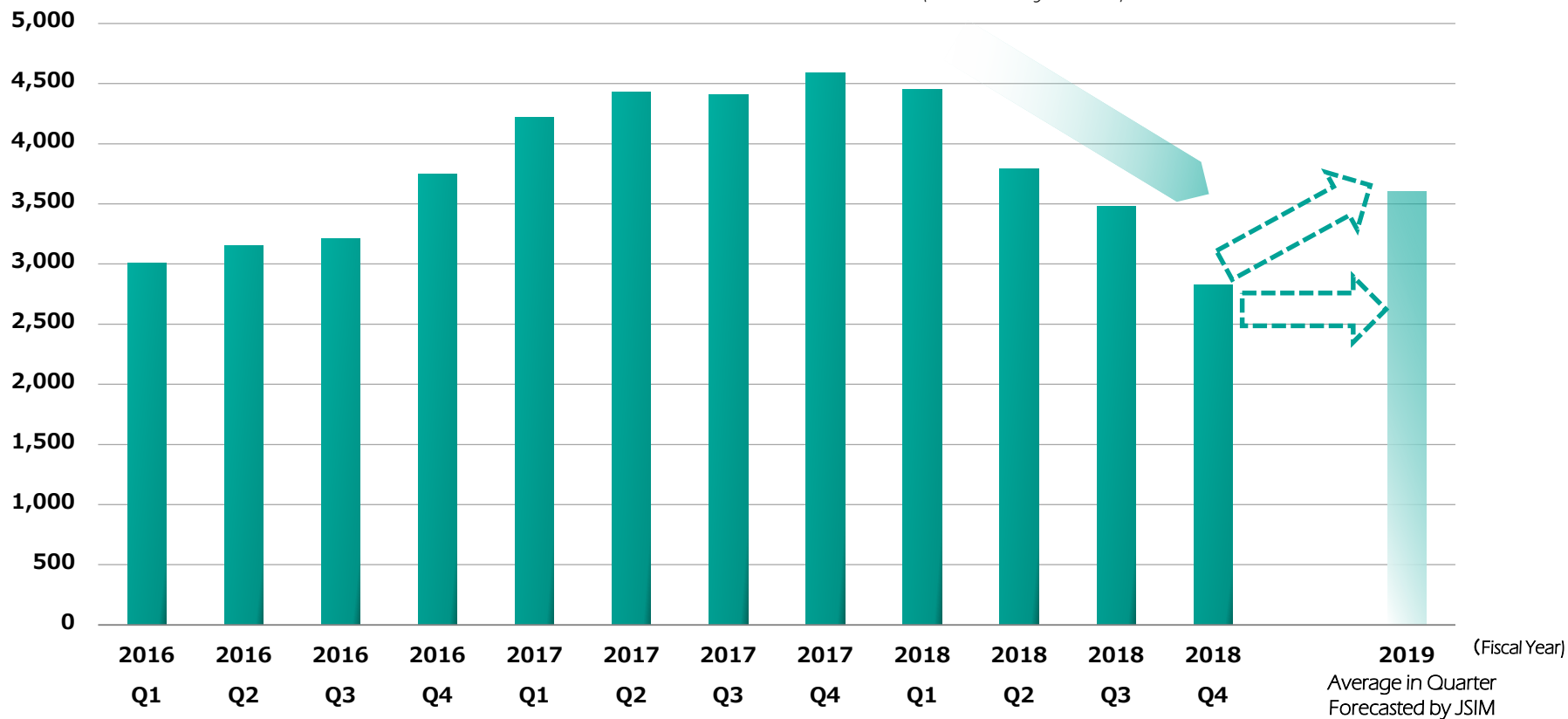


\*The data are expressed as relative values, with the sum of 4 areas for FY2009 being 100.

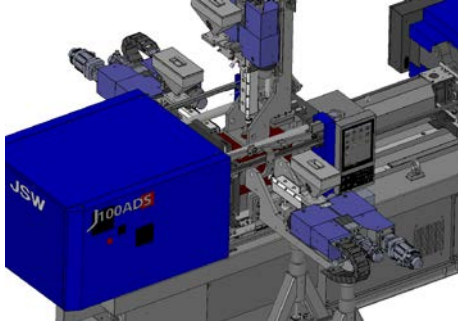
(statistics by The Japan Society Of Industrial Machinery Manufacturers (JSIM))

- While the number of orders received in the market kept in a high level from FY2017-Q2 to FY2018-Q1, it is gradually going down.
- For now the prospect is unclear. However, we are certain about the potential demand and expect the recovery in the second half of FY2019.

Trends of the number of orders received (statics by JSIM)



Success in fulfilling various needs, mainly by medium-sized machines, contributed to the increase of our market share.



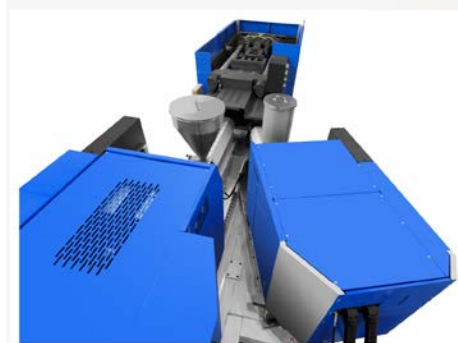
### Injection subunit "FLiP Series"

provides standard molding machines with flexibility and ease of use in composite molding, enabling the addition of values and accessories to the mold.



### Specialized servo system for molding machines "J's Drive System"

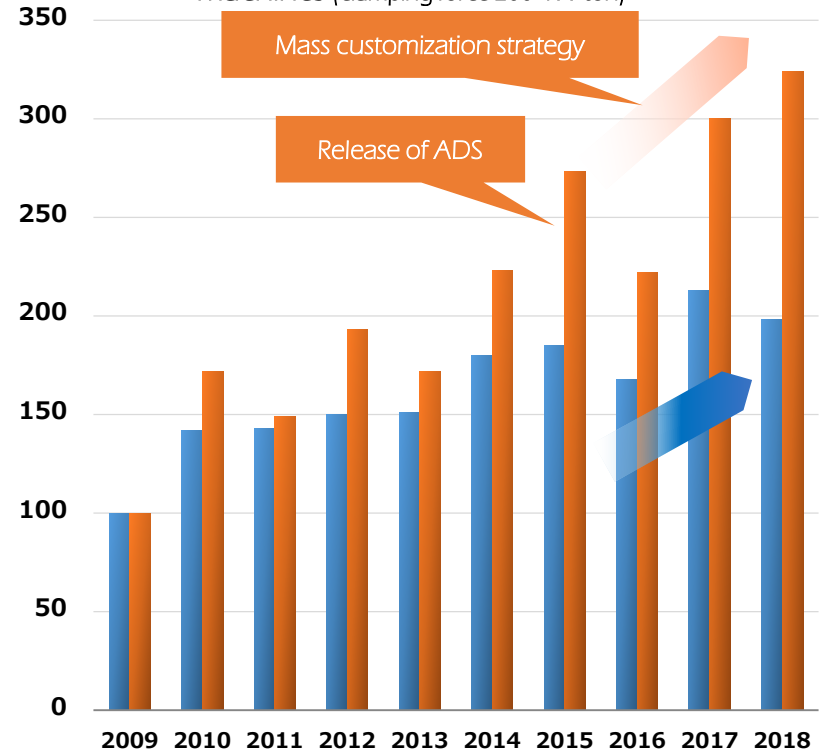
easily molds thin, difficult parts for precision electrical components, which are increasing for self-driving cars and electric vehicles.



### Multi-material molding machine "J-ADS-2M Series"

is the latest model of multi-material molding machine that enables DSI molding, which excels in energy saving and precise molding with the same durability as the former model.

Trends of orders received for medium-sized injection molding machines (clamping force 200-499 ton)



■ Based on statistics compiled by the Japan Society of Industrial Machinery Manufacturers (for 200 – 499 tons) ■ JSW (Horizontal-types for 200-499 tons)

(The data are expressed as relative values, with FY2009 being 100.)

## Mass Customization Strategy

A strategy that aims to achieve differentiation by offering customized machines that suit the needs of the regional area or customers, based on the standardized basics.

Contribution for increase in productivity through improvement of performance and change in materials for automobiles



Multi-Material Molding Machine (Injection facing type)

CFRTP Molding



Instrument Panel

MuCell Expansion Molding



Engine Cover

Long-Fiber Molding



Front End Carrier

DSI Molding



Intake Manifold



Bumper



Large Sized Electric Molding Machine



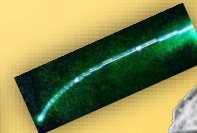
Multi-Material Molding Machine (Multifunctional rotary)



Meter Panel



Light Alloy Molding



Lamp



Multi-Material Molding



Magnesium Alloy Injection Molding Machine

High Cycle Molding



Middle Sized Electric Molding Machine



# Moves ahead of the major shift in the concept of cars

CASE  
MaaS

Reduction  
of CO<sub>2</sub>



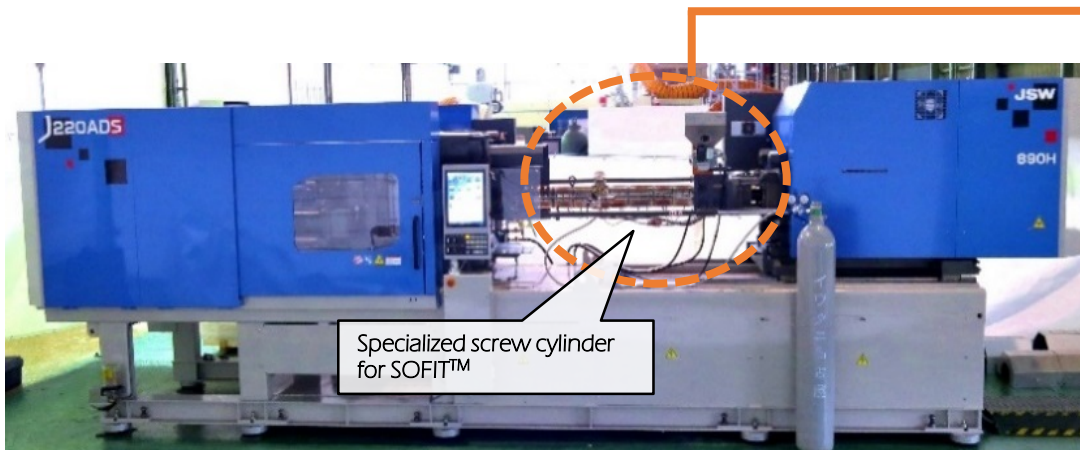
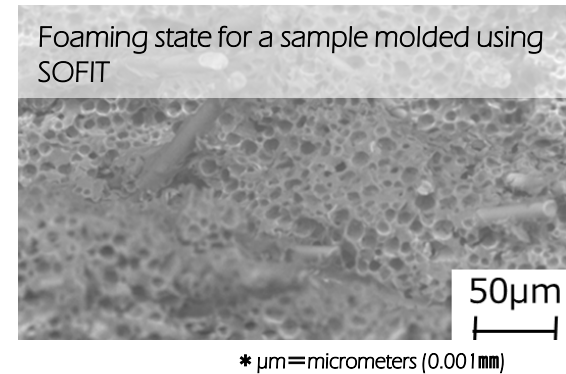
Response by JSW  
Weight Saving,  
Environmentally-  
friendly Materials

Needs	Main targets	Products and technologies	Progress of our moves
Increase in electronic accessories	Displays, doorknobs, thin, precise electrical components, etc.	EHD, USD machines (J's Drive System)	Already launched
Flexibility in design	Multi-colored and multi-material parts (integration of composite parts)	FLiP (injection subunit), Multi-material molding machines	Already launched
Increase in sensors	Imaging lenses (for monitors and sensors)	Specialized machines for lenses	In preparation for launch
Weight saving	Weight saving in drive system, Parts with precise dimensions *Strengthen with composite materials of GF,CF and CNF	SOFIT (new foaming molding technology)	Already launched, in preparation for application to larger machines
	Seat frames Structural parts (powertrain casings, etc.) Casings for electronic devices, frames	MG molding machines (larger scale models)	To be launched this year
	Bumpers, instrument panels, rear gates, fenders, windows (glazing)	2 Platen Ultra Large Injection Molding Machine	To be launched this year
Environmental performance	Support for biodegradable plastics, etc.	Suggestion of green molding machines	Under development

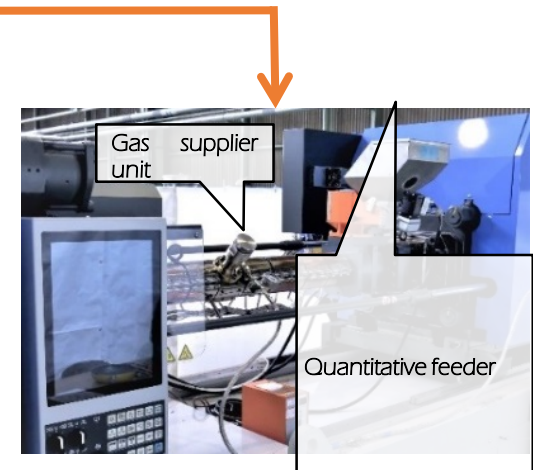
## Foaming moldings at lower pressures and lower costs.

### Physical Foaming Technology: SOFIT™

- “SOFIT™” is the physical foaming technology that we have put into practical use after working on its development ahead of our competitors.
- Molding at lower pressures and lower costs makes it possible to save the weight of automobile parts.
- We are now applying the technology to larger molding machines in order to achieve further weight savings for the internal and external equipment of automobiles.



External appearance of machines with SOFIT™



Details of the cylinder area



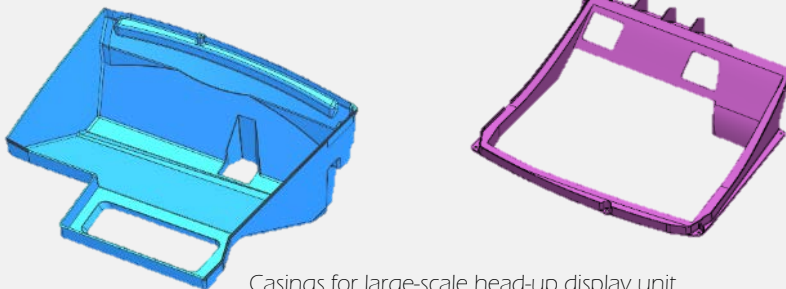
Safe and environmentally friendly molding of magnesium, which excels in weight, durability and recyclability.

## Large scale magnesium molding machine

In pursuit for weight saving of the automobile through supply of electronic device casings with high-level electromagnetic and heat release characteristics, which suits the electrification of automobiles and weight saving of large scale parts for drive system.

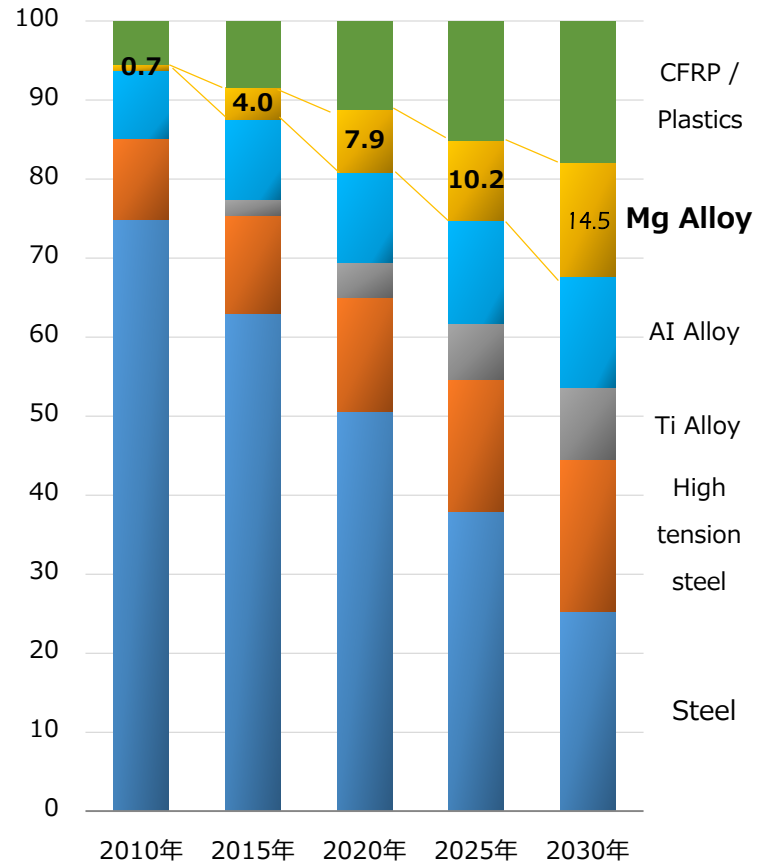


Magnesium alloy molding machine "JLM1300MGII" to be launched this year



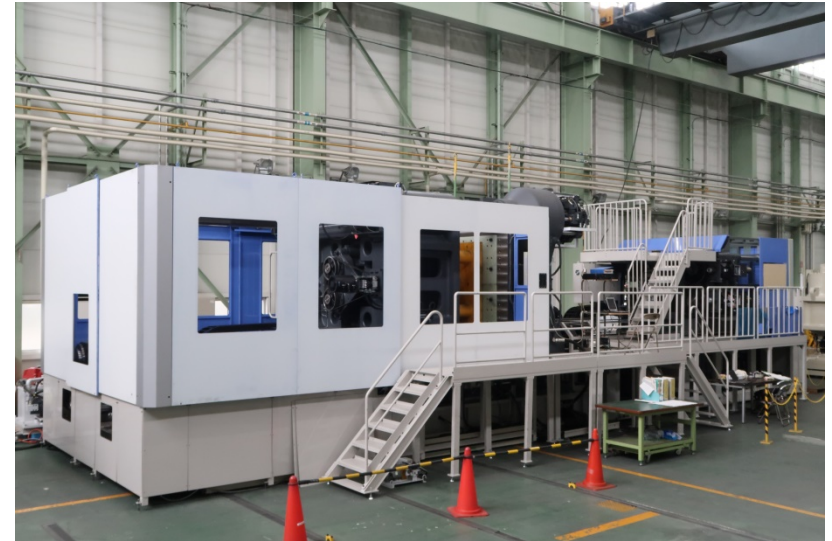
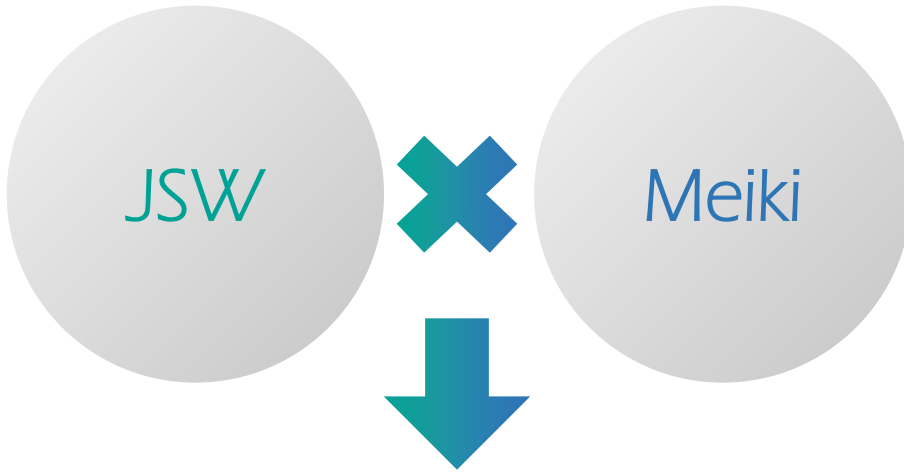
Casings for large-scale head-up display unit (500x400x200)

Materials used for production of automobiles (%)



Source: Excerpted and processed data of materials prepared by the Ministry of Economy, Trade and Industry, based on the Vehicle Technologies Program: Goals, Strategies, and Top Accomplishments (by US Department of Energy)

Development of 2 platen ultra large injection molding machine has completed, through the fusion of technologies in Meiki and JSW.



## 2 Platen Ultra Large Injection Molding Machine

Compact molding machine with one of the best specs and performances in the industry

Clamping force

3,000 ton

Compared to JSW machines

Shorter by 2.3m

Flexibility in size for molds

Top class in the industry



Contribution in the production of large scale plastic products like bumpers



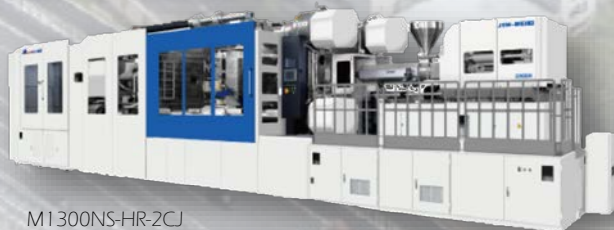
## To accelerate the expansion of the molding machine business

### Adaption for EV-Shift in the automobile industry

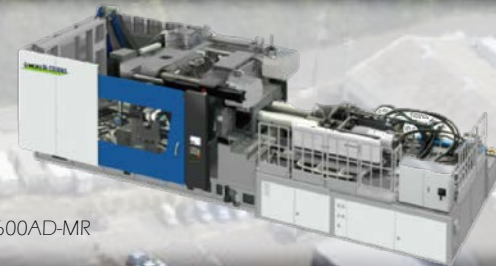
- Increased needs for large-scale plastic molded products due to the electrification of automobiles
- Adaptation for diversification of composite molded products

### Improvement of profitability as a group Optimal arrangement of resources

- Elimination of duplicate function in the group
- Improvement of production capability and efficiency
- Enhancement of product development
- Reinforcement of sales and services
- Revision of function sharing with Hiroshima plant
- Streamlining of business processes and optimization of staffing



M1300NS-HR-2CJ



JM1600AD-MR





## Progress of The Priority Measures in “JGP2020”



# JGP2020 ~Developing foundation for 2030~

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## ◆ “Growth” in Industry Machinery Products Business, “Rebirth” in Steel and Energy Products Business

### I . Optimization of Management Resources and Strengthening of Alliances

Optimization through rearrangement of the resources

⇒ Active investment for industry machinery product business, Rebuild of cost structure in the steel and energy products business that suits the current sales scale

Expansion of the businesses through alliance and M&A

⇒ Breaking free of adherence toward self-sufficient policies

### II . Strengthening After-Sales Services (Stock-Based Business)

Enhancement of service force mainly in industrial machinery

⇒ Securing stable profitability, improvement of customer satisfaction

Strengthening customer relationship through service business

⇒ Development of foundations for the next business

### III . Acceleration in Exploration and Development of New Businesses

Exploration of new businesses from the view point of mega trends

Fostering and commercialization in the 4 fields (aircrafts, hydrogen, crystals and thin films) +  $\alpha$

# I. Optimization of Management Resources and Strengthening of Alliances: Steel and Energy Products Business

Cooperation in production activity with Tsukishima Kikai, Co., Ltd.  
Muroran factory of Tsukishima commenced operation on April 1.

Utilization

Utilization of idle production equipment, manufacturing spaces, human resources and technologies

Improvement

Improvement of efficiency and reduction of manufacturing costs

Expansion

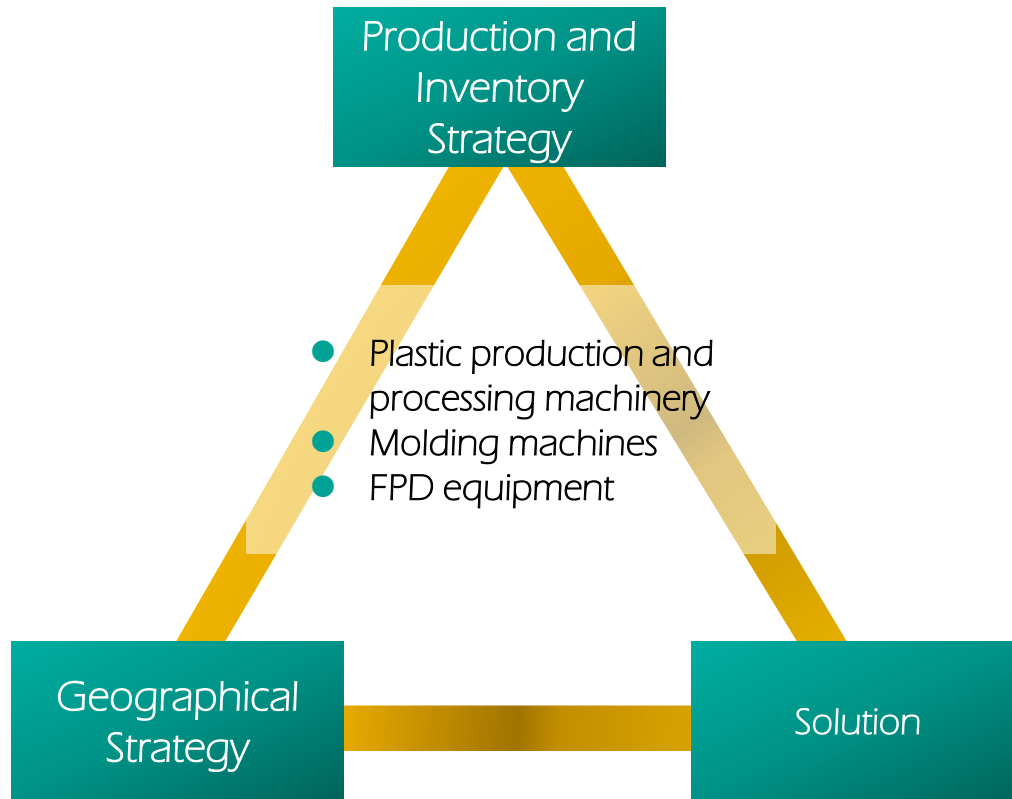
Expansion of business fields (welded structures, etc.) through the mutual utilization of the technologies in the two companies

- Opening ceremony on April 9, 2019



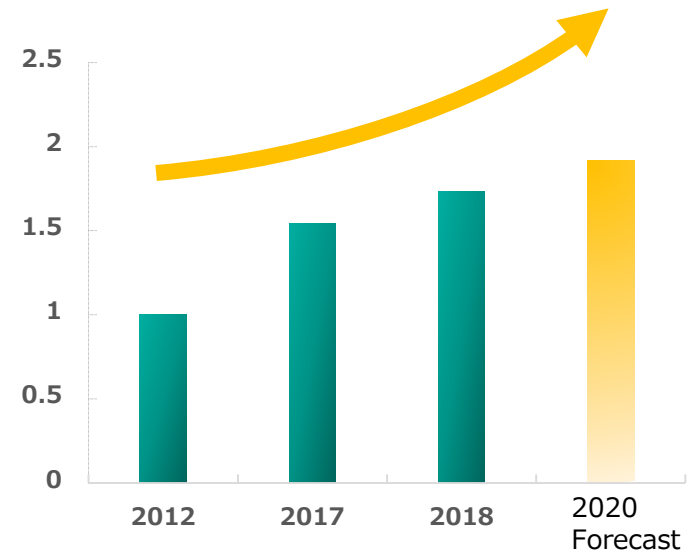


In pursuit of stable profitability and enhancement of customer satisfaction.



Reinforcement of service systems mainly in industrial machinery products business

Trends of sales for after-service (relative values, with FY2012 being 1)

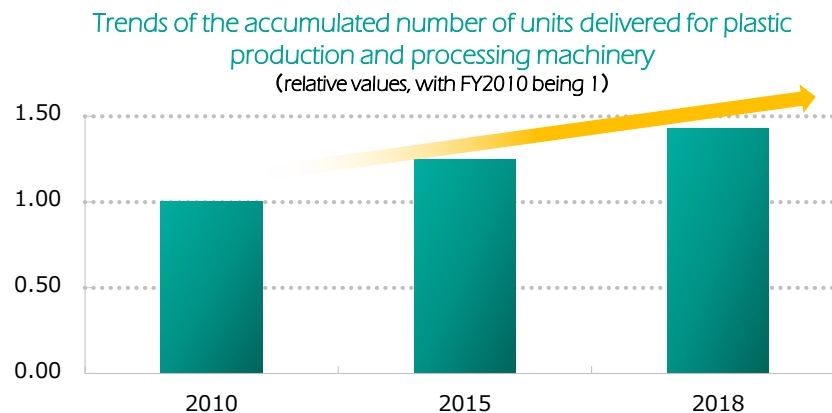


Sales are steadily increasing. We continue the improvement of our services for the realization of JGP2020.

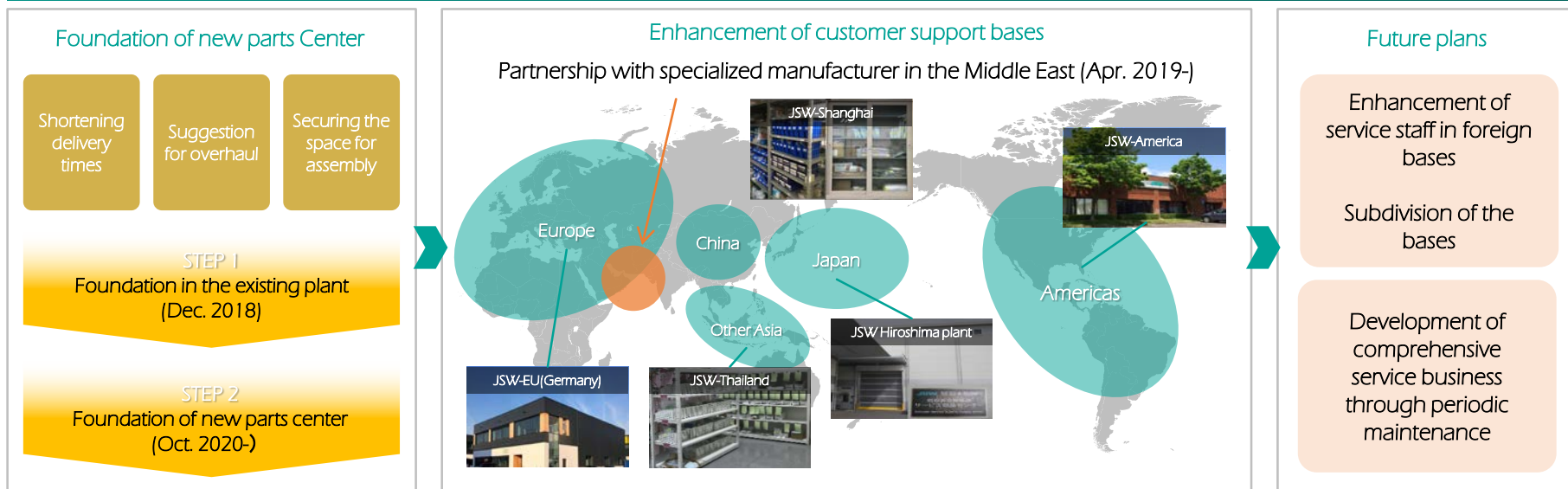
## Machinery

The number of products delivered is steadily increasing. We further improve our ability to fulfill the needs for services, mainly through enhancement of customer support bases.

Types of Services	Production and Inventory Strategy	Geographical Strategy	Solution
Sales of consumables and spare parts	●	●	
Periodic maintenance (Overhaul)	●		
Remodeling with the latest technology	●	●	●
Technical consultation	●	●	●
Comprehensive Maintenance Contract	●	●	

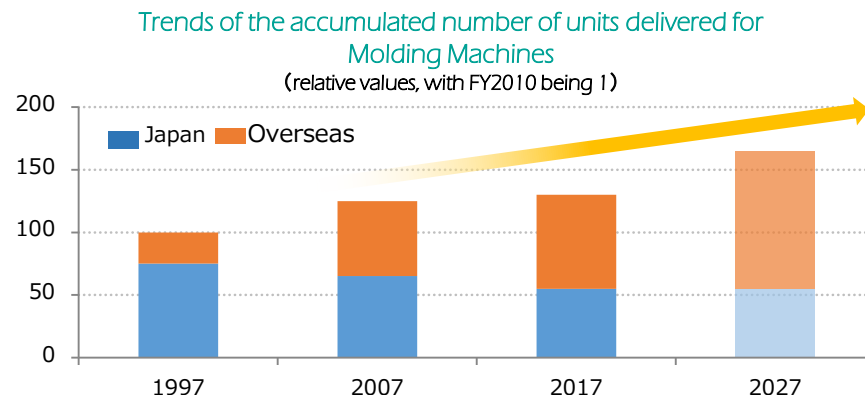


### Our Actions



The number of products delivered is increasing steadily. We further improve our ability to fulfill service needs mainly through enhancement of customer support bases.

Service Content	Production and Inventory Strategy	Geographical Strategy	Solution
Sales of consumables and spare parts	●	●	
preventive maintenance and shortening of downtime	●	●	●
Retrofit			●



### Our Actions

#### Foundation of service and parts center for molding machines

- Completed in Dec. 2018 and started operation in Jan. 2019 on the premises of Hiroshima plant.
- Assembly area for ball screw unit, whose needs are expected to increase, will be expanded in order to establish the supply system to the world.



#### Enhancement of customer support bases in foreign countries

- Reinforcement in the area where services are outsourced to local agencies.
- Service and parts center in the Europe has founded and started operation in Apr. 2019.



#### Supply of remote maintenance with ICT

- Trial starts for specific domestic customers this summer.
- Trials in South East Asia is also planned in the second half of FY2019.

#### Future plans

Development and practical application of predictive and preventive maintenance

## Businesses

Exploration of new businesses from the view point of mega trends.

- ⇒ Metallic Materials Business Promotion Office has newly founded, in addition to the 4 existing fields (aircrafts, hydrogen, crystals and thin films)

### New Business Promotion Headquarters

Aircrafts



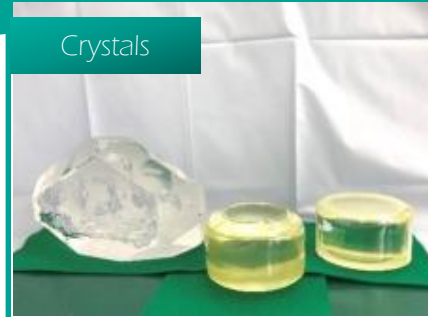
Capital investment and acquisition of certification for production of aircraft components has finalized under the guidance of our partner company. Now metal bonded products and composites products are in production at Muroran plant. Development of mass production system of composite products for a commercial airliner is in preparation.

Hydrogen



We are expanding the sales for pressure vessels based on our hydrogen resistance materials technology and hydrogen station business centered with compressors. MH tanks, which are based on hydrogen absorbing alloy technology, will be applied to energy storage and supply system field and fuel cell application field.

Crystals



Acceleration in development for infrastructure and devices for "5G" is expanding the use of crystalline materials in the fields of optical communication, wireless communication, and sensing. Following this trend, we are working on the development of composite boards for SAW, composite substrates for optical communication and GaN crystal substrates.

Thin films



ECR film forming equipment realizes manufacturing of high performance films, such as semiconductor laser coating and Protective layer of electronic devices. In addition to the effort for increase of the sales for ECR equipment, we are expanding the variety of products, such as ALD equipment and EB vapor deposition equipment.



### III. Acceleration of Exploration and Development of New Businesses : Joint Venture with JX Nippon Mining & Metals

## Acceleration of rebuilding of steel and energy products business

### The Japan Steel Works

Melting and casting technologies for steel materials

Manufacturing copper alloys with high quality through the fusion of the technologies of both companies

### JX Nippon Mining & Metals

Melting, casting and precision rolling technologies for copper alloys

Through cooperation with JX Nippon Mining & Metals, which is the top company in the high-performance metal materials field, we are expanding our business into this field in addition to existing steel products.

Overview of the new company		Date of foundation	Aug. 2019 (Plan)
Name	Undecided	Portion of ownership	JSW: 51%, JX: 49%
Location	Muroran, Hokkaido	Conclusion of contract regarding foundation	Jul. 2019
Description of business	Melting and casting of copper alloys	Foundation of JV	Aug. 2019
Capital stock	100 million yen (Plan)	Start of operation	Before Oct. 2021

### III. Acceleration in Exploration and Development of New Businesses : Hydrogen Business

Development of steel pressure vessel for hydrogen station station has completed and commercial production has started.

Three features for “HyST300 model R,”  
the steel pressure vessel for hydrogen station.

1

Durability at the highest level of the world

More than 3 times the durability of conventional products

2

Significant reduction in weight and cost

Approximately 40% reduction in weight,  
25% reduction in cost

3

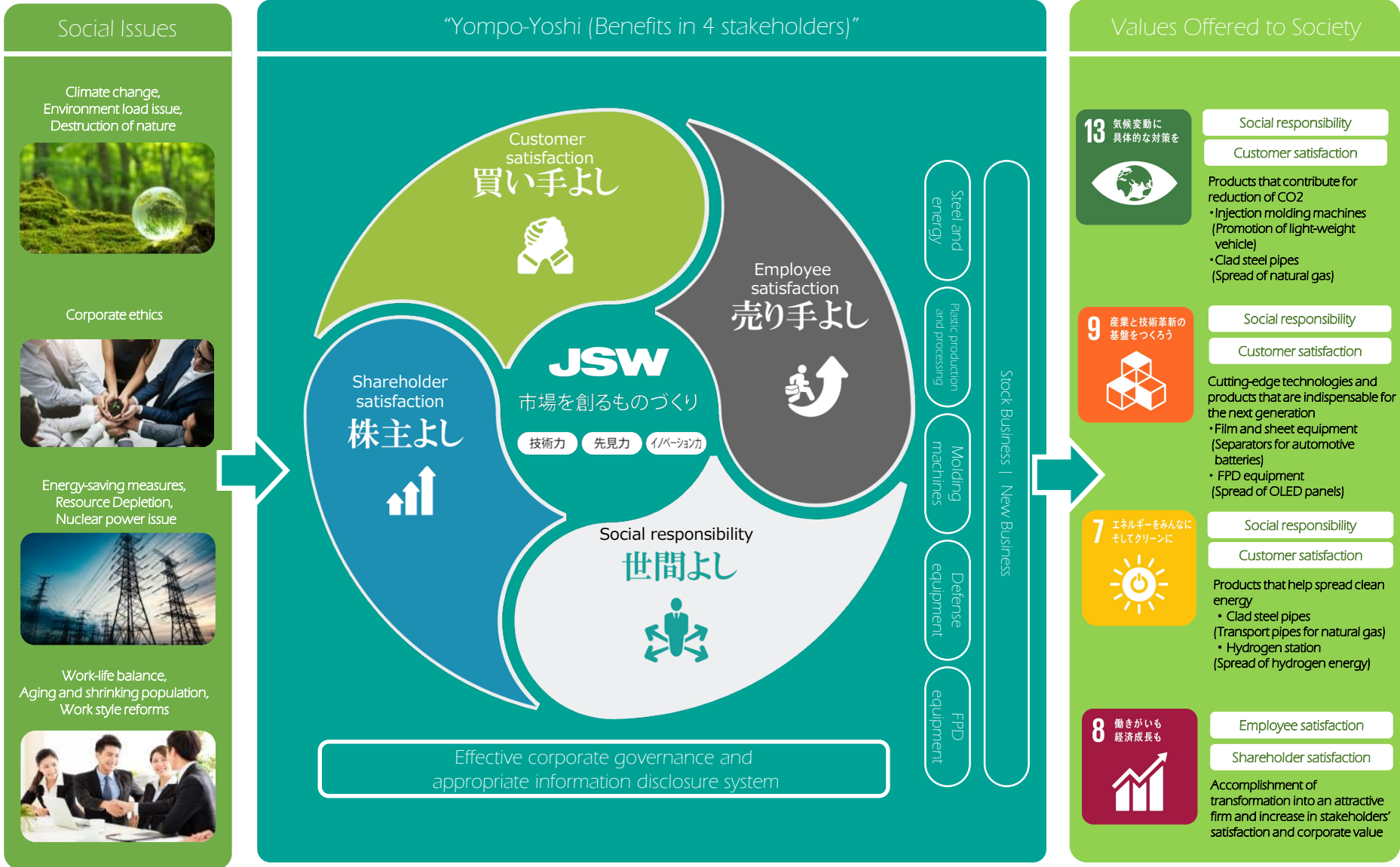
Safety and reliability equal to or greater than conventional products

We continue our effort to achieve top share in the market of pressure vessels for hydrogen stations, where a great growth is expected based on the hydrogen strategies in Japan and other foreign countries.





## “Yompo-Yoshi (Benefits in all 4 stakeholders)”





答えはいつも先にある。  
後ろを振り返るよりも、  
一步でも前に突き進む。

ものづくりの未来を変える。

**JSW**  
THE JAPAN STEEL WORKS, LTD.  
日本製鋼所



速  
速いだけの速や早いこと、  
瞬時に反応する速さや集中力、  
本質的な速さが重要だ。  
ものづくりの未来を変える。

**JSW**  
THE JAPAN STEEL WORKS, LTD.  
日本製鋼所



柔  
ゴウウと揺る揺るの力は、  
決して力ではない。  
柔らかい身体は人の得意技。  
ものづくりの未来を変える。

**JSW**  
THE JAPAN STEEL WORKS, LTD.  
日本製鋼所



超  
高みを飛び越えるほど  
高に上る高さをみたくする。  
超越するエネルギーを熱く燃やしていく。  
ものづくりの未来を変える。

**JSW**  
THE JAPAN STEEL WORKS, LTD.  
日本製鋼所



攻  
けを続けるだけでは、  
新しい事は出来ない。  
攻め続けることが、やがて時代を動かす。  
ものづくりの未来を変える。

**JSW**  
THE JAPAN STEEL WORKS, LTD.  
日本製鋼所

A close-up, grayscale photograph of a hand with fingers extended, about to press a circular button. The button is set into a dark, textured surface, possibly leather. The button has the words 'FUTURE' and 'START' printed on it, separated by a horizontal line. The lighting is dramatic, highlighting the texture of the hand and the button's surface.

FUTURE  
START

**JSW** 日本製鋼所





# Reference



# Trend of Net Sales, Operating Income and Profit

(Unit : Billions of yen)

	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
Net Sales	220.6	188.7	194.6	223.3	212.4	212.9	220.1
Industrial Machinery Products Business	130.1	118.3	126.3	144.3	159.3	170.2	173.6
Plastic production and processing machinery	37.0	28.3	32.5	36.4	36.1	50.2	52.5
Molding machines (consolidated)	40.9	47.0	53.6	56.4	57.6	64.5	72.7
FPD equipment (consolidated)	-	-	-	-	-	-	16.4
Other products	37.7	31.8	25.0	32.6	46.8	37.0	20.4
Consolidated subsidiaries, etc.	14.5	11.2	15.2	18.9	18.8	18.5	11.6
Steel and Energy Products Business	88.2	67.6	66.2	74.8	51.2	40.8	41.2
Electric and nuclear power	37.4	22.6	27.4	19.2	19.3	17.2	12.5
Pressure vessels for oil refineries	4.3	4.1	4.2	1.4	1.7	1.0	-
Clad steel plates and pipes	29.3	26.7	16.2	39.3	13.5	7.0	13.0
Wind turbines	1.1	1.7	5.7	1.2	3.9	1.6	-
Other products	12.3	7.2	7.0	6.9	5.3	5.5	9.5
Consolidated subsidiaries, etc.	3.8	5.3	5.7	6.8	7.5	8.5	6.2
Other Businesses	2.2	2.7	2.0	4.0	1.8	1.7	0.5
Operating Income	16.6	8.8	7.5	14.4	12.3	21.3	24.2
Industrial Machinery Products Business	16.7	12.1	11.3	12.4	15.1	23.8	23.5
Steel and Energy Products Business	▲0.5	▲3.6	▲3.9	0.7	▲2.8	▲1.5	2.6
Other Businesses	0.8	1.1	0.9	2.0	0.9	0.8	0.3
Profit	8.2	5.5	▲5.3	▲16.6	▲4.9	10.7	19.9

※From FY2018, based on modified disclosure classifications. Pressure vessels for oil refineries and wind turbines are included in "Other businesses."

(Unit : Billions of yen)

	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
Total assets	303.9	293.1	319.6	293.1	275.3	297.4	305.5
Industrial Machinery Products Business	96.8	99.3	108.4	124.3	1,237	128.1	150.0
Steel and Energy Products Business	120.2	111.5	111.4	60.2	375	40.3	39.3
Other Businesses	13.3	12.9	13.0	12.0	11.8	11.7	14.6
Net assets	134.3	139.2	138.2	111.3	107.5	118.6	129.8
Net Assets per Share (JPY) ※Since FY2016, amount is after reserve split of stocks	359.29	372.83	368.81	299.41	1,446.44	1,592.47	1,746.91
Equity ratio (%)	43.83	47.09	42.72	37.53	38.6	39.3	42.0
Return on Equity (%)	6.35	4.07	▲3.88	▲13.46	▲4.6	9.6	14.6
Operating Cash Flow	23.7	11.5	11.5	19.7	12.0	26.7	11.0
Investing Cash Flow	▲5.8	▲5.7	▲2.6	▲12.1	▲13.5	▲5.0	▲1.3
Financial Cash Flow	▲15.2	▲15.0	▲2.9	4.7	▲1.2	▲2.4	▲1.3
Cash and Cash Equivalents at End of Period	50.9	42.2	49.1	61.4	58.6	77.8	73.8



(revised on April 1, 2018)

At The Japan Steel Works, Ltd., we will comply with all laws and international rules, both to the letter and in spirit, and fulfill our social responsibilities with a strong sense of ethics in Japan and overseas as a company that aims to realize a sustainable society based on the following ten principles.

1. To promote sustainable economic growth and the resolution of social issues, we will develop useful products, technologies and services that give consideration to safety through innovation and provide them to society.
2. We will conduct appropriate transactions and responsible procurement based on fair and free competition. We will also maintain sound relationships with political and government bodies.
3. To enhance our corporate value, we will make appropriate corporate information available to the public willingly and fairly and have constructive dialogues with a wide range of stakeholders.
4. We will respect the human rights of all people.
5. We will earn the trust and satisfaction of society and customers by responding promptly to inquiries from customers after reflecting the market and customer needs in our products, technologies and services.
6. We will provide a sound working environment by developing workstyles that respect the diversity, personality and individuality of employees.
7. We will take actions proactively, recognizing that addressing environmental issues is an important duty for us as a company.
8. We will participate in the community and contribute to its development as a corporate citizen.
9. We will conduct thorough and systematic crisis management against antisocial forces, terrorism, cyberattacks and natural disasters, etc. that will pose a threat to civil society and corporate activities.
10. Recognizing the realization of the spirit of this code of behavior as its own role, our management will make it fully known to the employees of the Company and its affiliates after establishing effective governance and encourage the chains to perform acts based on the spirit of this code of behavior.  
If any situation that will lose the trust of society occurs in conflict with the spirit of this code of behavior, our management will take the initiative in solving the problem, investigating the cause and preventing recurrence to fulfill our responsibility.