

Business Results for the First Half of the Fiscal Year 2019 (Ending March 31,2020)

November 15, 2019

The Japan Steel Works,LTD.

Naotaka Miyauchi, Representative Director & President

Cautionary Note



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 May 17, 2019.

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Reference (35-38):

Change in Classification of Major Products
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Composition of Business Segments and Major Products



Business Seaments

Steel and Energy Products Business

Industrial Machinery Products Business

Other Businesses

Business **Divisions**

Steel BD

Machinery BD / Injection Molding Machinery BD / FPD System BD / Ordnance Business HQ

New Business Promotion HQ

Production

Muroran Plant



Hiroshima Plant



Yokohama Plant



Bases

[Steel castings and forgings]

OElectric and nuclear power

- Parts for reactors (shell, head etc.)
- · Parts for steam generators
- · Rotor shafts · Casings · Other parts for power generation





○Others

- · Pressure vessels for oil refineries · Die Steel
- · Steel rolls for steel manufacturing
- After-sales services
 Other types of steel forgings

[Clad Steel Products]

OClad steel plates and pipes





[Plastic Related Machinery]

- OPlastic production and processing machinery
- Pelletizers
- Film and sheet manufacturing equipment
- Twin-screw extruders (TEX TEK)
- · After-sales services



[Industrial Machinery]

OFPD system

- · Laser annealing (ELA) systems
- After-sales services



OMolding machines

- Plastic injection molding machines
- Blow molding machines
- Magnesium alloy injection molding machines
- After-sales services



○Others

- · Defense equipment
- Compressors
- Railway products
- Other industrial machinery

IT

 Metallic materials

New

Business

Aircraft

 Crystal Thin film Advanced materials

Hydrogen

Markets

Products

Electric Power and Steel

Oil and **Natural Gas** Natural **Energy**

Petro -chemicals **Industrial Machinery**

Automobiles

New Business

Defense



RESULTS FOR THE FIRST HALF OF THE FISCAL YEAR 2019 (ENDING MARCH 31, 2020)

PART I



Results of Orders Received, Net Sales and Income



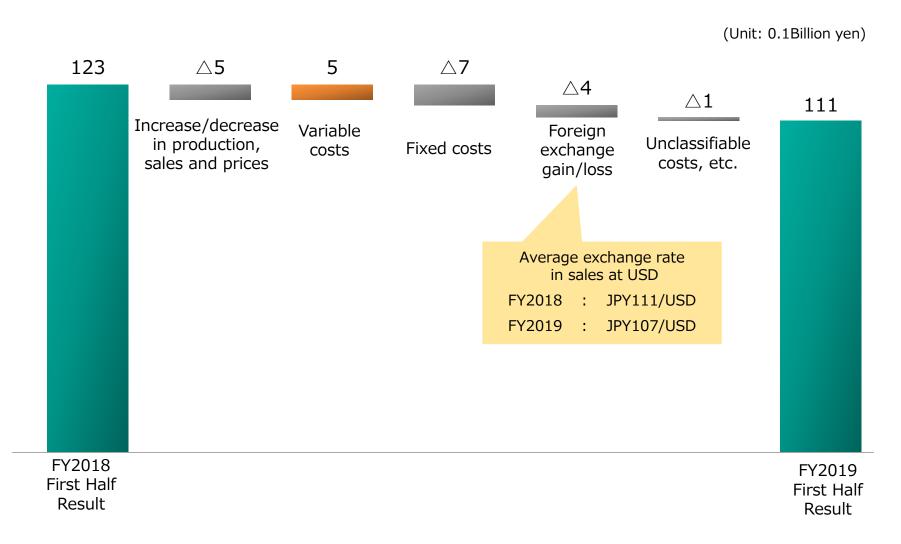
Orders received, operating income and orders received decreased year on year.

	FY2018	FY2	FY2019		Progress toward	
	First Half Result (A)	Full year Previous forecast (B)	First Half Result (C)	previous year (C) - (A)	the previous forecast (C) ÷ (B)	
Orders received	1,237	2,350	1,128	-109	48.0%	
Net sales	1,096	2,250	1,062	-34	47.2%	
Operating income	123	190	111	-12	58.4%	
(ratio)	11.2%	8.4%	10.5%	-0.8%	-	
Ordinary income	136	200	121	-15	60.5%	
Profit(Loss)	119	140	52	-67	37.1%	
Profit(Loss) Per share(yen)	162.52	190.50	70.82	109.17	37.2%	
Dividends per share(yen)	25.0	55.0	27.5	2.5	50.0%	

Results of Increase/Decrease in Operating Income



Operating income decreased due to decrease in production, sales and prices.



Results by Segments



Operating income decreased in both segments. Orders received increased in Steel and Energy Products Business.

Industrial Machinery Products Business

(Unit: 0.1 Billion yen)

Orders Received
Net Sales
Operating Income
(ratio)

FY2018	FY2	019	Compared to the	Progress toward
First Half	Full year	First Half	previous year	the previous forecast
Result (A)	Previous forecast (B)	Result (C)	(C) - (A)	(C) ÷ (B)
1,037	1,900	865	-172	45.5%
849	1,800	872	23	48.4%
115	200	107	-8	53.5%
13.5%	11.1%	12.3%	-1.3%	-

Steel and Energy Products

Business

Orders Received
Net Sales
Operating Income
(ratio)

FY2018	FY2	019	Compared to the	Progress toward the
First Half Result (D)	Full year Previous forecast (E)	First Half Result (F)	previous year (F) - (D)	previous forecast (F) ÷ (E)
165	400	242	77	60.5%
221	400	166	-55	41.5%
18	20	14	-4	70.0%
8.1%	5.0%	8.4%	0.3%	-

Results in Industrial Machinery Products Business



Orders received decreased significantly year-on-year due to downturn in the market condition of molding machines.

Net Sales and	Operating	Income
---------------	-----------	--------

	FY2018 First Half Result (A)	FY2 Full year Previous forecast (B)	019 First Half Result (C)	Compared to the previous year (C)-(A)	Progress toward the previous forecast (C)÷(B)
Plastic production and processing machinery	244	620	296	52	47.7%
Molding machines (consolidated)	345	650	345	0	53.1%
FPD equipment (consolidated)	85	150	48	-37	32.0%
Other products	119	240	99	-20	41.3%
Consolidated subsidiaries, etc.	56	140	84	28	60.0%
Total	849	1,800	872	23	48.4%
Operating income	115	200	107	-8	53.5%

Orders Received					
FY2018	FY2	019	Compared		
First Half Result (D)	Full year Previous forecast (E)	First Half Result (F)	to the previous year (F)-(D)	toward the previous forecast (F)÷(E)	
338	670	319	-19	47.6%	
403	650	291	-112	44.8%	
61	150	39	-22	26.0%	
201	280	121	-80	43.2%	
34	150	95	61	63.3%	
1,037	1,900	865	-172	45.5%	

Results in Steel and Energy Products Business



Sales decreased and orders received increased year-on-year.

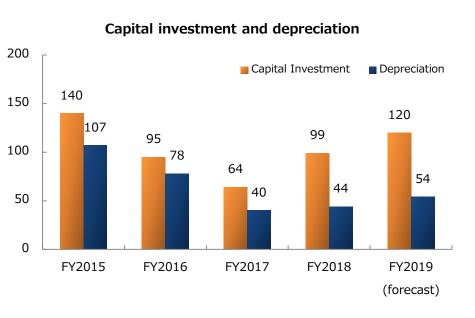
	Net Sales and Operating Income					
	receded and operating interine					
	FY2018	FY2	019	Compared	Progress	
	First Half Result (A)	Full year Previous Forecast (B)	First Half Result (C)	to the previous year (C)-(A)	toward the previous forecast (C)÷(B)	
Steel castings and forgings	104	170	108	4	63.5%	
Clad steel plates and pipes	90	160	29	-61	18.1%	
Consolidated subsidiaries, etc.	27	70	29	2	41.4%	
Total	221	400	166	-55	41.5%	
Operating income	18	20	14	-4	70.0%	

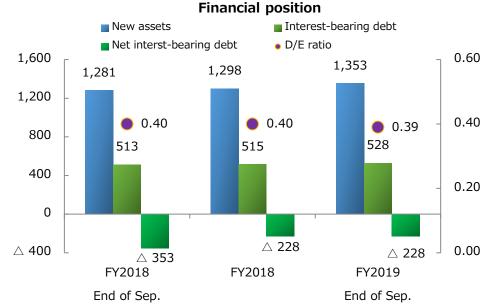
	Orde	rs Recei	ved				
	Orders Received						
FY2018	FY2	019	Compared	Progress			
First Half Result (D)	Full year Previous Forecast (E)	First Half Result (F)	to the previous year (F)-(D)	toward the previous forecast (F)÷(E)			
65	180	120	55	66.7%			
73	150	93	20	62.0%			
27	70	29	2	41.4%			
165	400	242	77	60.5%			

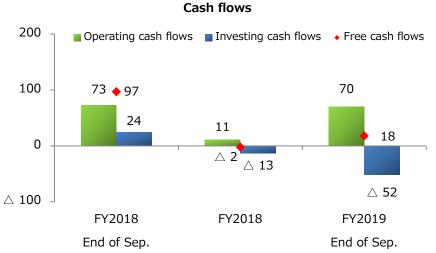
Capital Investment, Depreciation, Cash Flows, Financial Position

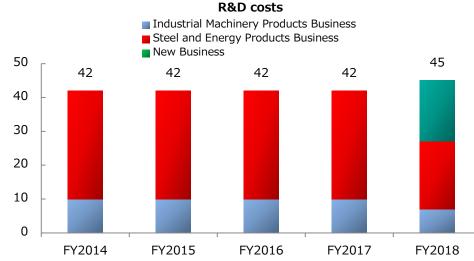


and R&D costs











FORECAST FOR THE FISCAL YEAR 2019 (ENDING MARCH 31, 2020)

PART II



Forecast of Orders Received, Net Sales and Income



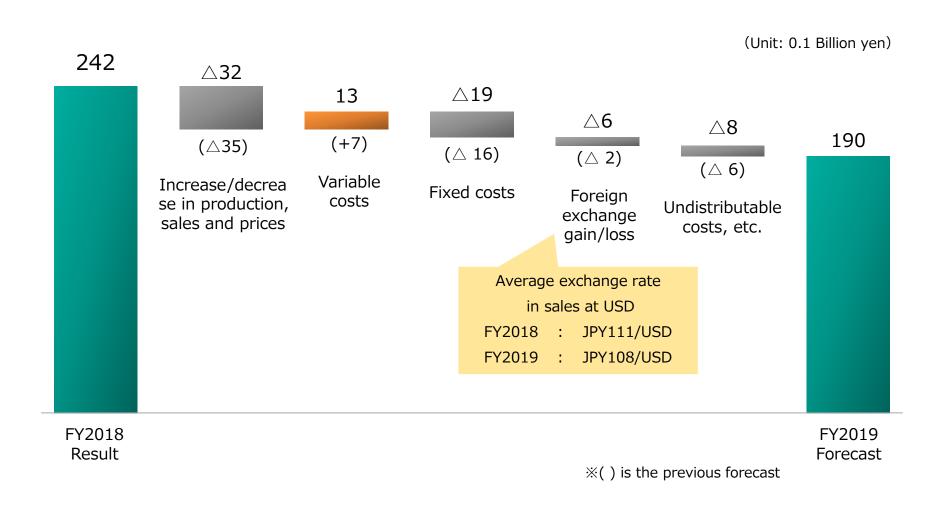
Both orders received and net sales are expected to increase year-on-year.

	FY2018		Compared to the		
	Result (A)	First Half Result	Second Half Forecast	Full Year Forecast(B)	previous year (B)-(A)
Orders Received	2,161	1,128	1,172	2,300	139
Net Sales	2,201	1,062	1,188	2,250	49
Operating income	242	111	79	190	-52
(ratio)	11.0%	10.5%	6.6%	8.4%	-2.6%
Ordinary income	279	121	79	200	-79
Profit(Loss)	199	52	58	110	-89
Profit(Loss) per share (yen)	271.69	70.82	79.00	149.65	(122.04)
Dividends per share(yen)	55.0	27.5	27.5	55.0	0.0

Forecast of Increase/Decrease in Operating Income



Operating income is expected to decrease due to decrease in production, sales, and prices, as well as increase in fixed costs.



Forecast by Segments



Net sales and orders received are expected to increase in both segments. In particular, orders for steel products will be strong.

(Unit: 0.1 Billion yen)

Industrial Machinery Products Business

Orders Received
Net Sales
Operating income
(Ratio)

FY2018 Result(A)	FY2019 Forecast(B)	Compared to the previous (B)-(A)		
1,757	1,800	43		
1,736	1,750	14		
235	200	-35		
13.5%	11.4%	-2.1%		

Steel and Energy Products Business

Orders received
Net Sales
Operating income
(Ratio)

FY2018 Result(C)	FY2019 Forecast(D)	Compared to the previous (D)-(C)
341	450	109
412	450	38
26	20	-6
6.3%	4.4%	-1.9%

Forecast in Industrial Machinery Products Business



Orders received in total is expected to increase, covering the decline in molding machines with other products.

(Unit: 0.1 Billion yen)

Net Sales and Operating Income

	FY2018 Result (A)	FY2019 Forecast (B)	Compared to the previous (B)-(A)
Plastic production and processing machinery	525	610	85
Molding machine (Consolidated)	727	660	-67
FPD Equipment (Consolidated)	164	110	-54
Other Products	204	220	16
Consolidated subsidiaries, etc.	116	150	34
Total	1,736	1,750	14
Operating Income	235	200	-35

		-
FY2018 Result (C)	FY2019 Forecast (D)	Compared to the previous (D)-(C)
593	650	57
706	630	-76
60	120	60
281	250	-31
117	150	33
1,757	1,800	43

Orders Received



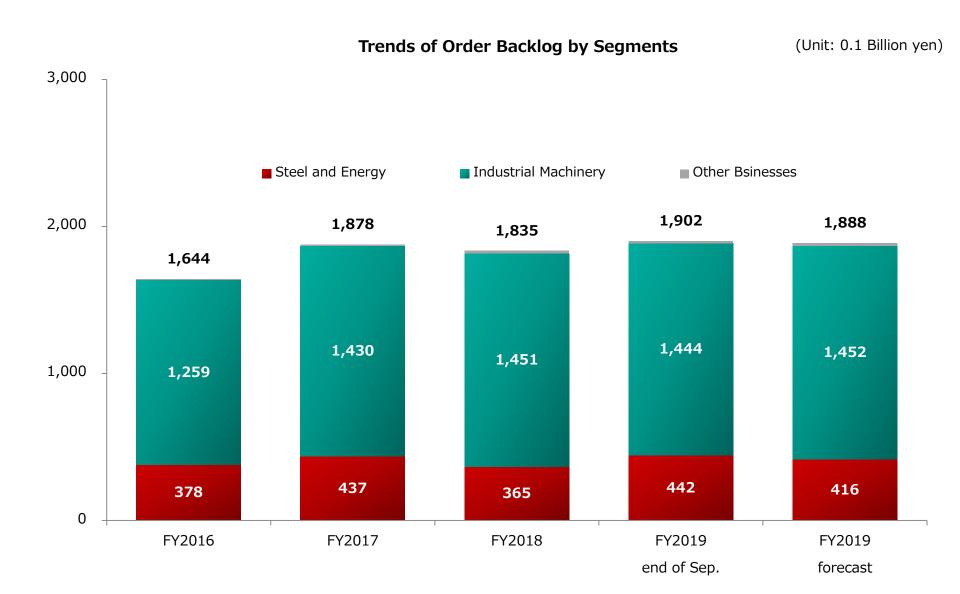
(Unit: 0.1 Billion yen)

Orders received are expected to increase significantly year-on-year.

	Net Sales	Net Sales and Operating Income				
	FY2018 Result (A)	FY2019 Forecast (B)	Compared to the previous (B)-(A)			
Steel castings and forgings	220	230	10			
Clad steel plates and pipes	130	160	30			
Consolidated subsidiaries, etc.	62	60	-2			
Total	412	450	38			
Operating income	26	20	-6			

	0111101	I			
0	ed				
FY2018 Result (C)	Result Forecast				
151	210		59		
126	180		54		
64	60		-4		
341	450		109		





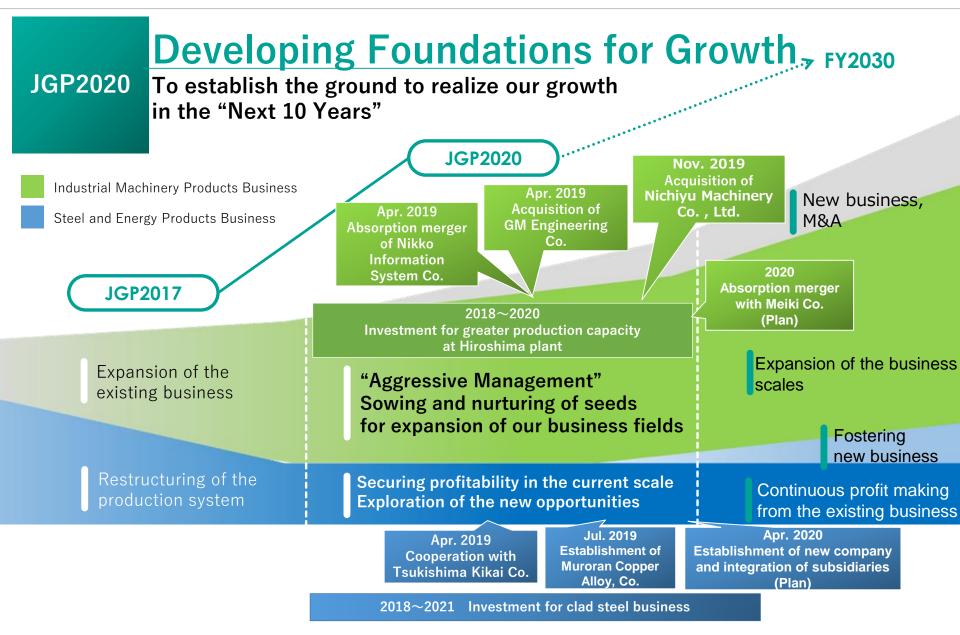


MEDIUM-TERM MANAGEMENT PLAN "JGP2020" AND BUSINESS OVERVIEW

PART III



Mid-Term Management Plan "JGP2020" and Corporate Vision for FY20395W





$JGP2020 \sim Developing foundation for 2030 \sim$

- "Growth" in Industrial 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)

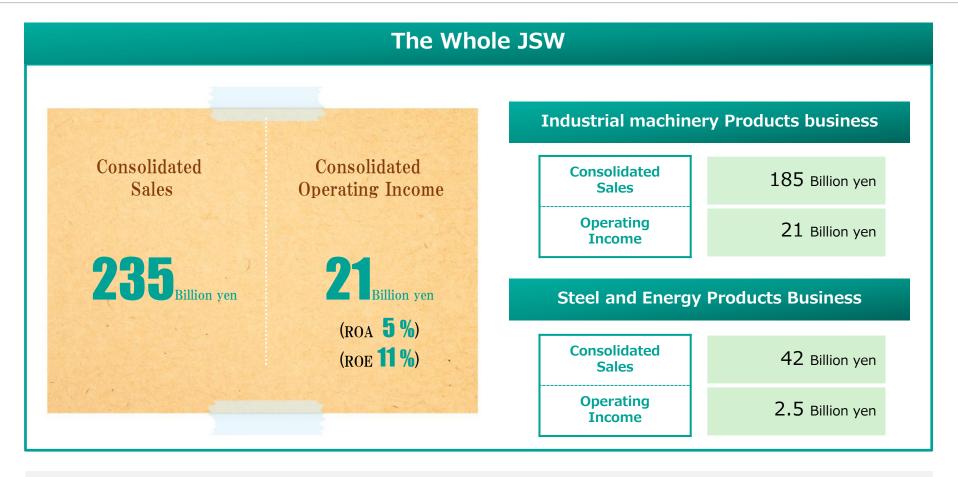
Enhancement of service force mainly in industrial machinery

- ⇒ Securing stable profitability, improvement of customer satisfaction Strengthening customer relationship through service business
 - ⇒ Development of foundations for the next business

III. Increase exploration and fostering 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) + a





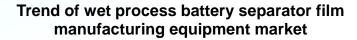
After 2021, following the basic strategy of JGP2020, we are going to formulate the next mid-term management plan and proceed with its measures.

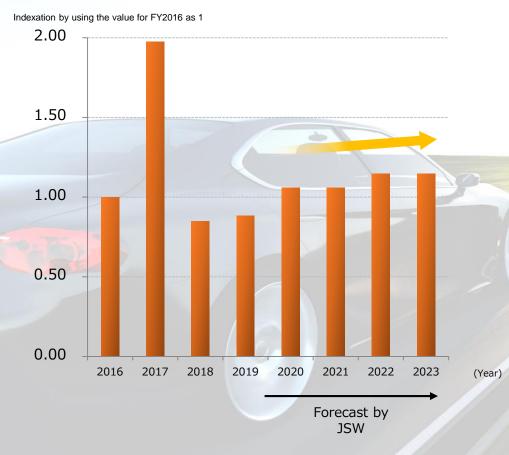
Conditions of Major Products in Industrial Machinery Business



Industrial machinery business	Previous Prospects (May.2019)	Current Prospects	Market Conditions
Film and sheet manufacturing equipment	Ö	浴	Market in Japan and Korea will be brisk. Market in China is bottoming out and increase in orders is expected.
Pelletizer		:X	Increase in orders is expected due to brisk market conditions mainly in China and other Asian countries.
Twin-screw extruders	>\\\\\\		Increase in orders for medium- and large- sized machines is expected for the high- performance resins used for 5G, EV.
FPD Equipment			While market for smartphones is recovering, the FPD equipment market is still severe. We await for recovery due to 5G and 8K TVs.
Molding machine			Downturn in Market conditions began in second half of FY2018. The situation is still uncertain.

JGP2020 Overview of Film and Sheet Manufacturing Equipment





Market Conditions for battery separator film equipment

1 Japan and South Korea

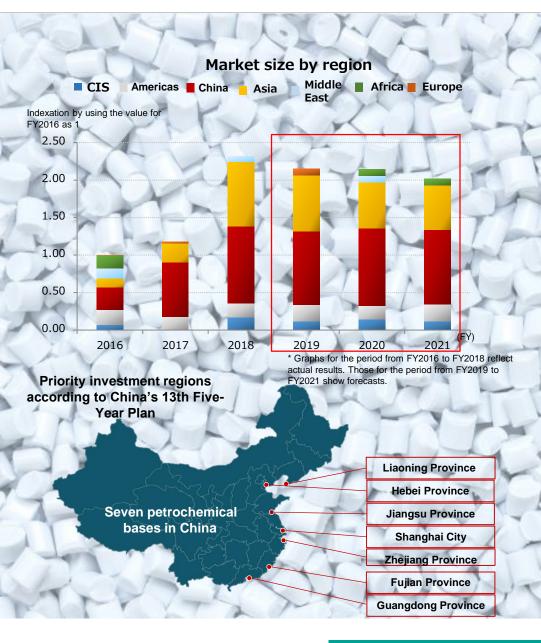
- Demand for films for in-vehicle applications (highend products) remains steady.
- We have solidified our position as the top-ranking manufacturer.

2 China

- The oversupply of equipment is being eliminated as a result of market rationalization through M&As.
- Orders for equipment
 Conditions remain flat in FY2019.
 Moderate increases are expected in FY2020 and beyond.

JGP2020 Overview of Pelletizer Business





Market conditions for pelletizers

The market size is expected to increase twofold from the level in FY2016.



China and Asian countries will continue to show strong performance.

- In terms of the supply-demand balance, equipment shortages (production) are extremely serious in China.
- The 13th Five-Year Plan has been driving growth in demand in China.
- Asian countries will continue to show strong performance going forward, because new and existing facilities have been constructed or expanded mainly for exporting equipment to China.

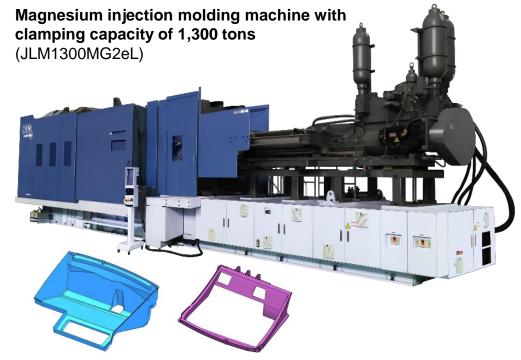
^{*} The 13th Five-Year Plan
The official policy of the Chinese government for the five-year period
from 2016 until 2020.



Respond to demand for large-sized equipment in consideration of increasing needs in the automotive industry.

Commenced the sale of a large-sized magnesium injection molding machine with clamping capacity of 1,300 tons in June 2019. The development of a larger-sized molding machine is underway.

Sales of magnesium injection molding machines Indexation by using the value for FY2016 as 1 Ratio of orders in units for machines with capacities greater than 500 tons 2.00 100% 92% 92% 87% 90% 1.50 81% 80% 1.00 70% 0.50 60% 0.00 50% (FY) 2019 2016 2017 2018 * Graphs for the period from FY2016 to FY2018 reflect actual results. Those for



Casings for large-sized head-up display units (Approx. 500 mm x 400 mm x 200 mm)

Contribute to enhancements in the environmental performance of automobiles through weight reductions and improvements in heat-releasing characteristics with respect to head-up display components, etc.

FY2019 show forecasts.

(i)-1 Optimization of Management Resources : Initiatives for "Rebirth" in Steel and Energy Business



Strengthening earning base through reorganization of business portfolio

Steel Castings and Forgings

Reorganize product portfolio and expand product line up.

Rebirth

For reorganization of the entire group in steel and energy products business, new company is to be established.

(Scheduled in April 2019)

Clad Steel Plates and Pipes

With investment for production efficiency, further strengthen our "strong products" that are expected to grow.

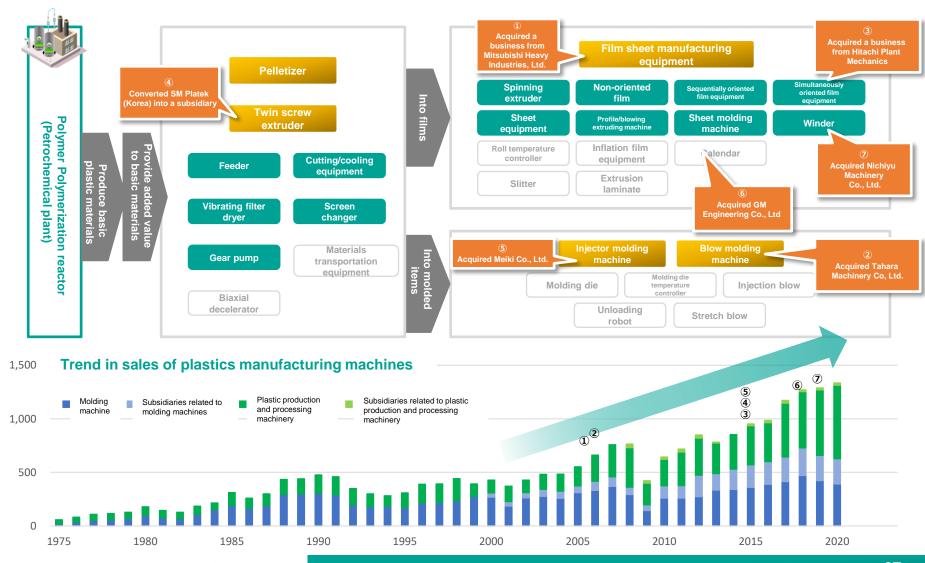
Engineering Services

Establish the third pillar in the field of plant, infrastructure, construction, maintenance, testing and inspection services

(i) - 2 Strengthening of Alliance – Plastic Processing Machines



Further expand the plastic processing machine complex.



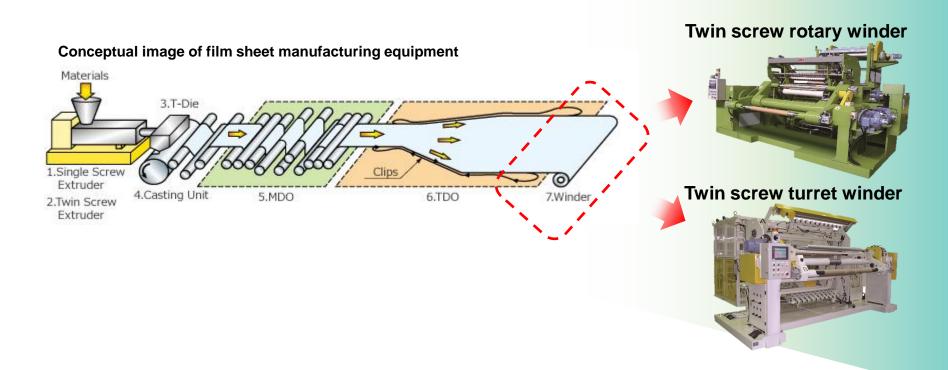
(i) - 3 Strengthening of Alliance –



M&A Related to Film Sheet Manufacturing Equipment Business

Acquired Nichiyu Machinery Co., Ltd., a manufacturer specializing in winders. Further strengthened the capability to offer the entire range of film sheet manufacturing equipment.

- Improved product appeal by comprehensively optimizing the development and control processes of equipment
- Expanded business opportunities through the manufacture and sale of standalone units of winding equipment



(ii) - 1 Strengthening of After-Sales Services – Aiming to Increase Sales Ratio



Increase the sales ratio of after-sales services in the industrial machinery business to at least 30%.

Ratio of after-sales services to industrial machinery sales Approx. 20% 30% or higher Actual result in Medium- to longterm target FY2018

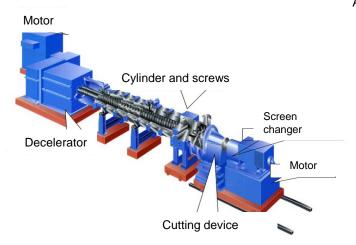
(ii) - 2 Strengthening of After-Sales Services – Priority Items

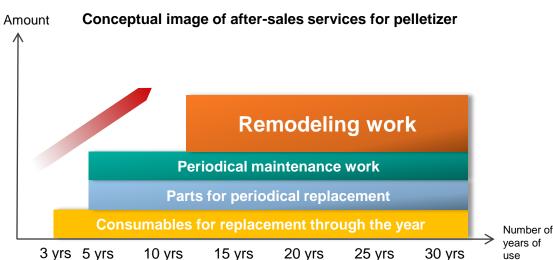


Outline of the after-sales service business

Description of services	Production strategy Inventory strategy	Geographical strategy	Solution
Sale of consumables and spare parts	•	•	
Periodic maintenance (Overhaul)	•		
Remodeling with the latest technology	•	•	•
Technical consultation	•	•	•
Comprehensive maintenance contract	•	•	

For pelletizers



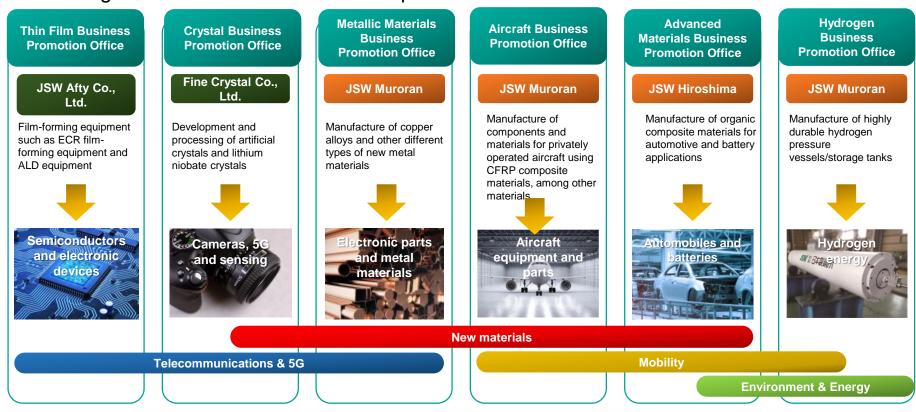


Strengthen

(iii) - 1 Exploration and Development of New Businesses



We have established promotion offices to tap into six areas and are in the process of facilitating the commercialization of their products.



Megatrends

Increase in population and change in structure Progress of urbanization

Progress of technologies

Climate change and resource shortages

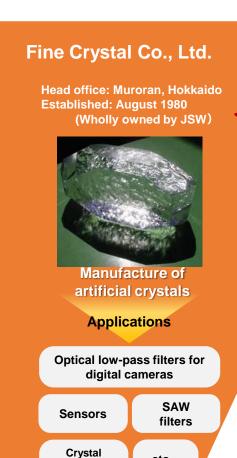
We will contribute to providing solutions to future social issues with an eye on the megatrends. We will contribute to the sustainable growth of society and achieve the sustainable enhancement of corporate value.

(iii) - 2 Exploration of New Businesses – Restructuring of Bases in the Crystal Business



Contribute to the development of telecommunications with a focus on the manufacture of two mainstay products: crystals and LN crystals.

Improve the three manufacturing bases in Muroran, Iwaki and China's Zhejiang Province to address new demand.



Alliance

Accelerate the development and commercialization of crystal products that support 5G by comprehensively leveraging the strengths of three companies

JMF(Zhejiang) Opto-Electronic Co., Ltd (Haining)

Head office: Haining, China Established: April 2019 (JSW: 48%, FCC: 1%) Chinese-Foreign Equity Joint Venture

Commence of full-scale crystal processing business is planned in January 2020.

Fine Crystal Iwaki Co., Ltd.

Head office: Iwaki Fukushima Established: August 2017 (Wholly owned by JSW)



Manufacture of lithium niobate (LN) crystals

Applications

Optical low-pass filter for digital cameras

Circuit boards for optical modulators

Sensors

Development crystal composite materials

etc...

etc...

oscillators





REFERENCES



Materials and Energy Business

Old disclosure category (-FY2018)	New disclosure category (FY2019 -)
Electric power and nuclear power	Steel castings and forgings
Clad steel plates and pipes	Clad steel plates and pipes
Other products	Steel castings and forgings
Consolidated subsidiaries, etc.	Consolidated subsidiaries, etc.

Trends of Net Sales, Operating Income and Profit



	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019 (Forecast)
Net Sales	1,887	1,946	2,233	2,124	2,129	2,201	2,250
Industrial machinery business	1,183	1,263	1,443	1,593	1,702	1,736	1,750
Plastic production and processing machinery	283	325	364	361	502	525	610
Molding machine (consolidated)	470	536	564	576	645	727	660
FPD equipment (consolidated)	1	-	1	1	_	164	110
Other products	318	250	326	468	370	204	220
Consolidated subsidiaries, etc.	112	152	189	188	185	116	150
Materials and Energy Business	676	662	748	512	408	412	450
Steel castings and forgings	_	-	-	-	_	-	230
Electric power and nuclear power	226	274	192	193	172	125	-
Pressure vessel for oil refineries	41	42	14	17	10	ı	-
Clad steel plates and pipes	267	162	393	135	70	130	160
Wind turbine	17	57	12	39	16	ı	_
Other products	72	70	69	53	55	95	-
Consolidated company	53	57	68	75	85	62	60
Other businesses	27	20	40	18	17	52	50
Operating income	88	75	144	123	213	242	190
Industrial Machinery Products Business	121	113	124	151	238	235	200
Steel and Energy Products Business	-36	-39	7	-28	-15	26	20
Other Businesses	11	9	20	9	8	3	-30
Profit	55	-53	-166	-49	107	199	110

Trends of Situation in Assets and Cash Flow



		(Offic. 0.1 Difficit yell)						
	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019 First Half	
Total assets	2,931	3,196	2,931	2,753	2,974	3,055	3,015	
Industrial Machinery Products Business	993	1,084	1,243	1,237	1,281	1,500	-	
Steel and Energy Products Business	1,115	1,114	602	375	403	393	-	
Other Businesses	129	130	120	118	117	146	-	
Net assets	1,392	1,382	1,113	1,075	1,186	1,298	1,353	
Net Assets per Share (yen) **Since FY2016, amount is after reserve split of stocks	372.83	368.81	299.41	1,446.44	1,592.47	1,746.91	1,817.04	
Equity Ratio (%)	47.09	42.72	37.53	38.61	39.36	42.04	44.30	
Return on Equity (%)	4.07	-3.88	-13.46	-4.59	9.59	16.27	-	
Operating Cash Flow	115	115	197	120	267	11	70	
Investing Cash Flow	-57	-26	-121	-135	-50	-13	-52	
Financial Cash Flow	-150	-29	47	-12	-24	-37	-17	
Cash and cash equivalents at End of the Period	422	491	614	586	778	738	749	

Corporate Code of Behavior of The Japan Steel Works, Ltd.



(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.