

Toyo Tanso Co., Ltd.

Results for the First Half of the Fiscal Year Ending December 31, 2017

August 2017
Toyo Tanso Co., Ltd.

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Part 1. Summary of Consolidated Results

Part 1. 1. Key Points of the Results for the First Half of the Fiscal Year Ending December 31, 2017

Point 1

Although net sales were down slightly over the previous year, they exceeded forecasts due to a recovery in demand for electronics applications and a weak yen.

Point 2

Despite the posting of non-operating expenses due to special factors, both operating income and ordinary income increased sharply over forecasts and the previous year due to progress with business structure reforms, such as reductions in fixed costs.

Point 3

The Company posted 320 million yen in extraordinary income following the transfer of equity in a consolidated subsidiary and the dissolution of a joint venture contract and 90 million yen in extraordinary losses. Profit attributable to owners of parent exceeded both forecasts and the previous year.

Point 4

The Company has left its exchange rate forecasts unchanged and its full-year forecasts assume that competition will remain harsh. This fiscal year is the key period for our business structure reforms, and a range of measures are currently being pursued with a sense of urgency to achieve the 2018 targets.

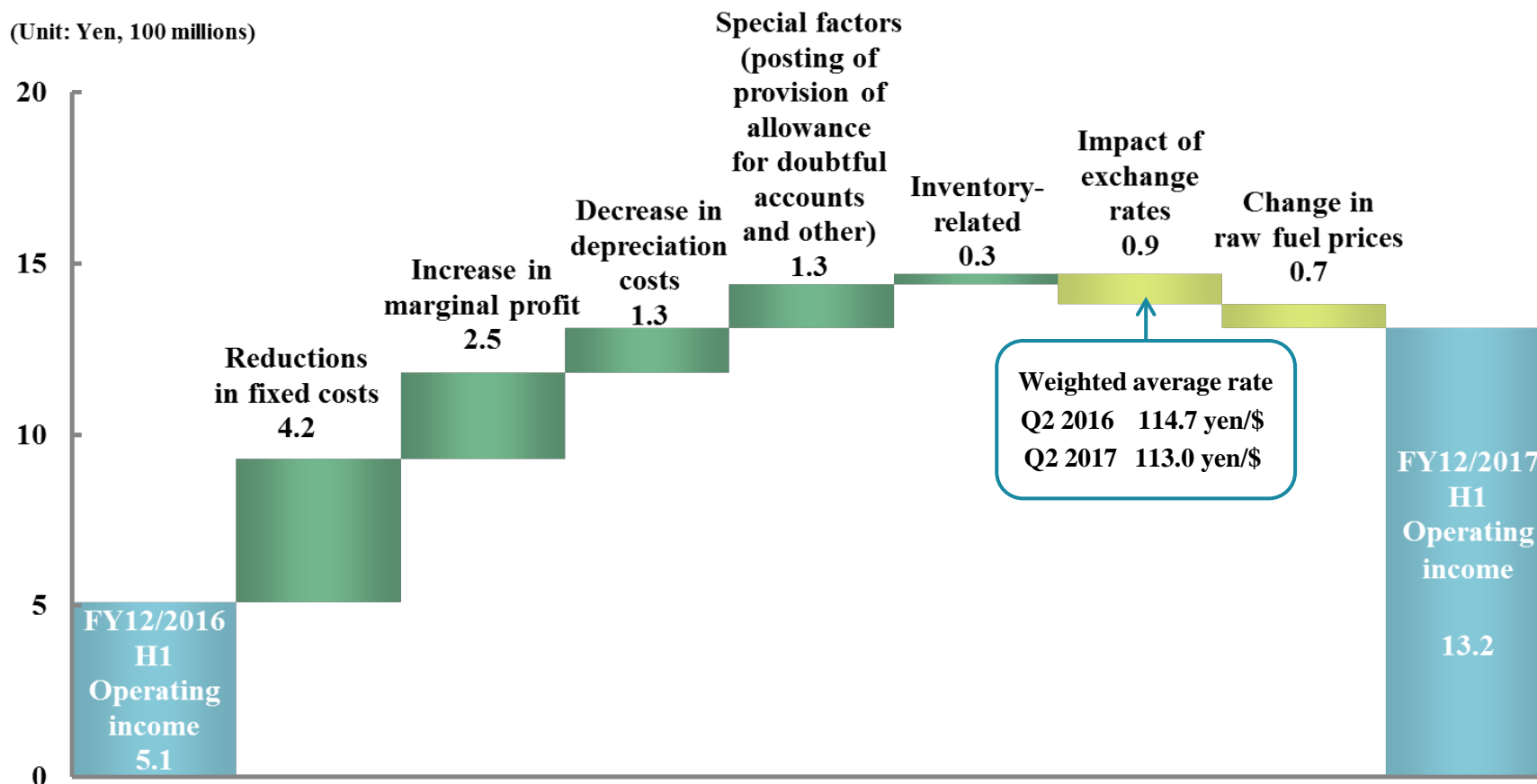
Part 1. 2. Results for the First Half of the Fiscal Year Ending December 31, 2017 and Forecasts for the Fiscal Year Ending December 31, 2017

(Unit: Yen, millions)	FYE Dec. 2016		FYE Dec. 2017			
	H1	Full year	H1	Year-on-year change	Full year (forecast)	Year-on-year change
Net sales	16,941	32,464	16,564	(376) / (2.2) %	32,500	35 / 0.1 %
Operating income	513	652	1,326	812 / 158.3 %	1,900	1,247 / 191.1 %
(Ratio of operating income to net sales)	3.0%	2.0%	8.0%		5.8%	
Ordinary income	257	759	1,130	872 / 338.3 %	1,700	940 / 123.9 %
(Ratio of ordinary income to net sales)	1.5%	2.3%	6.8%		5.2%	
Profit attributable to owners of parent	241	284	1,129	888 / 367.5 %	1,600	1,315 / 463.0 %
Profit attributable to owners of parent per share (basic) (yen)	11.65	13.71	54.47		77.12	
Exchange rate	111.9 yen/\$ 124.7 yen/€ 17.1 yen/CNY	108.9 yen/\$ 120.4 yen/€ 16.4 yen/CNY	112.4 yen/\$ 121.6 yen/€ 16.4 yen/CNY		(H2) 105 yen/\$ 115 yen/€ 15.0 yen/CNY	

Part 1. 3. Factors Affecting Changes in Operating Income

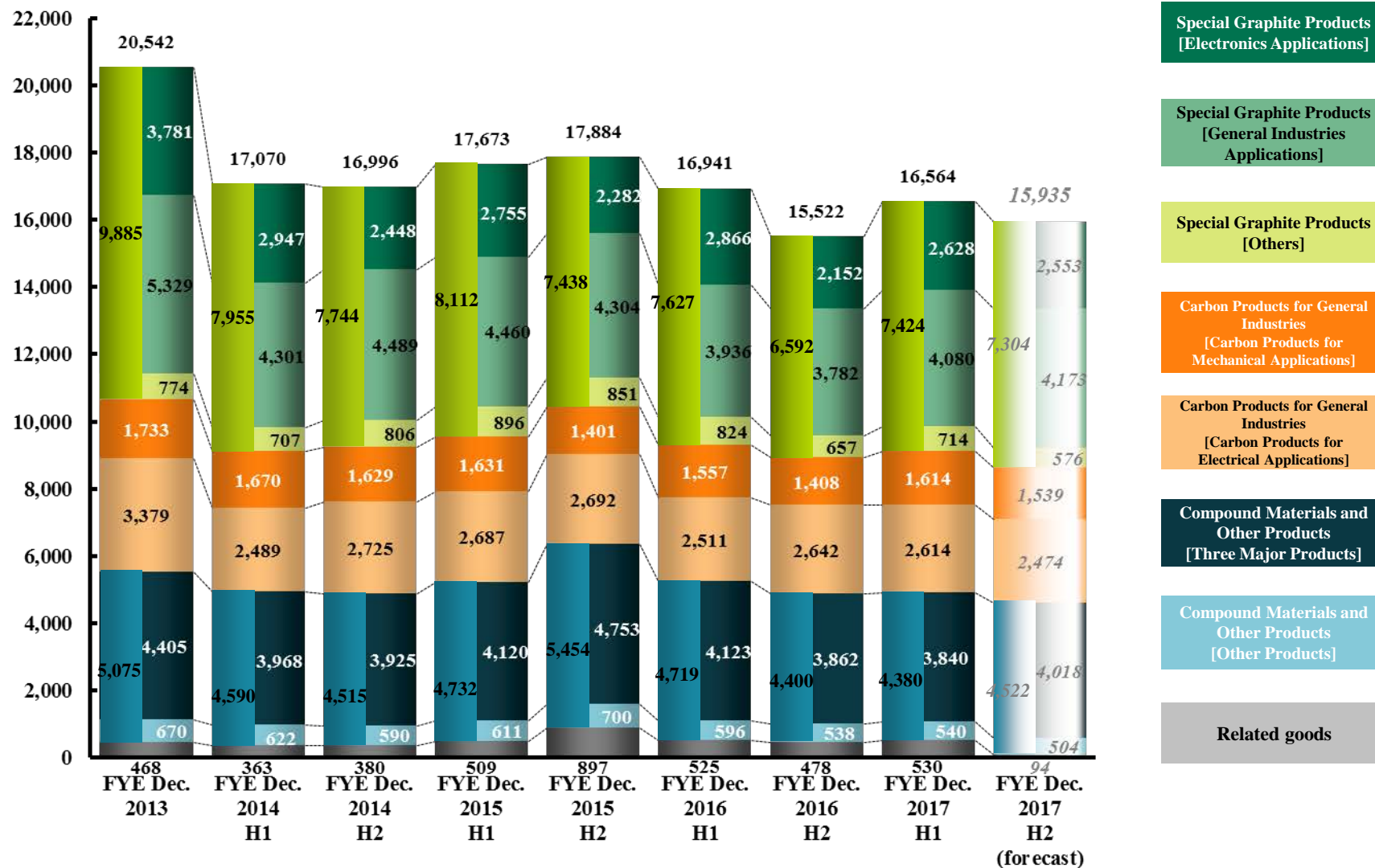
(First half of fiscal year ended December 2016 vs. first half of fiscal year ending December 2017)

- ✓ Measures to reduce fixed costs as part of structure reforms contributed significantly to higher income.
- ✓ Despite lower sales, the marginal profit ratio increased due to improved profitability attributable to a review of the order composition.



Part 1. 4. Net Sales by Product and Segment

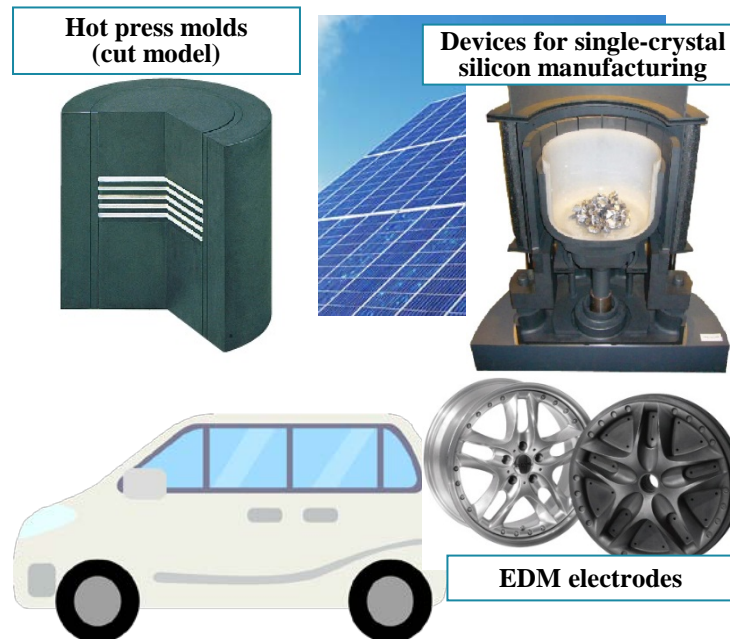
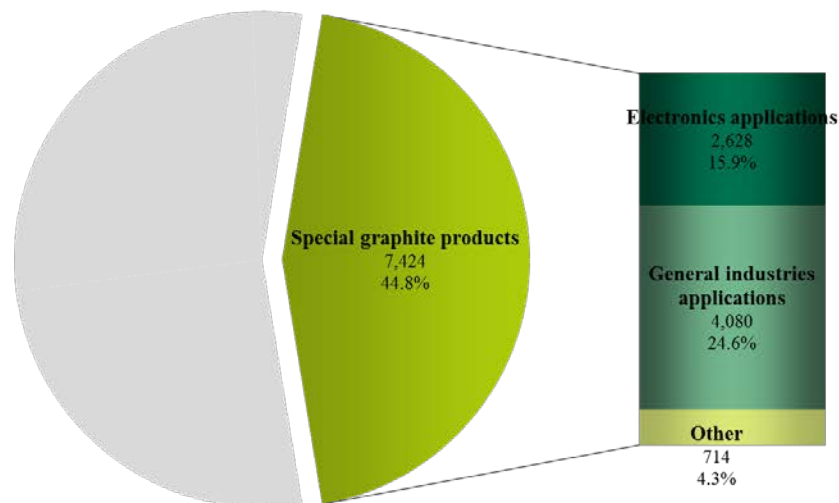
(Unit: Yen, millions)



Note: The final day of the fiscal period was changed from May 31 to December 31 as of the fiscal year ended December 31, 2013.

For this reason, the fiscal year ended December 31, 2013 was an irregular seven-month fiscal period (nine months for some subsidiaries).

<Special Graphite Products>



Key points

[Electronics applications]

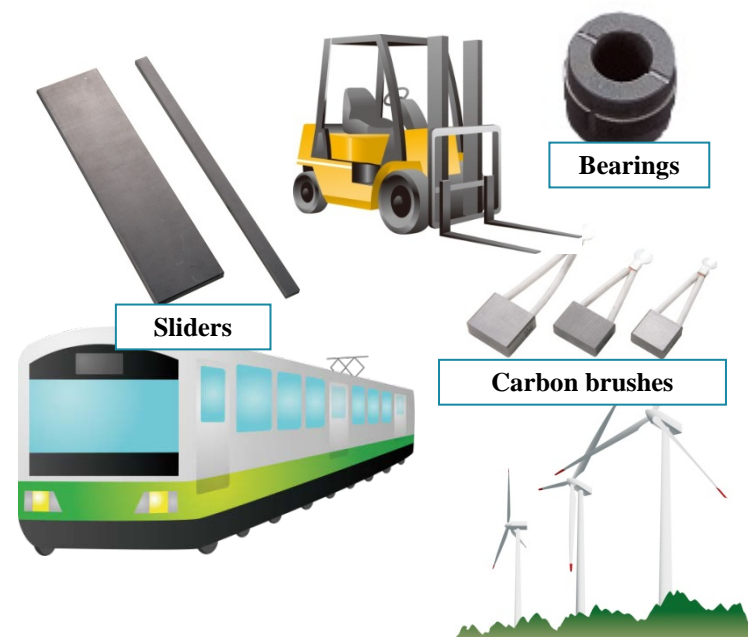
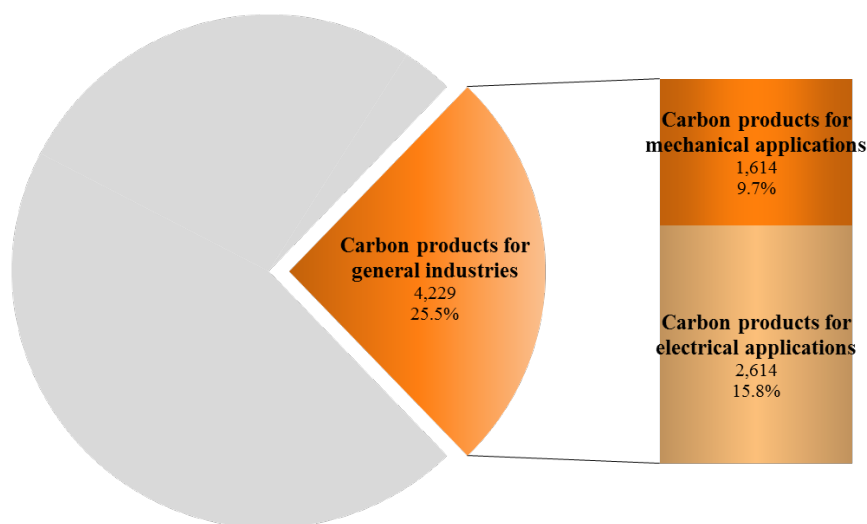
Applications for single-crystal silicon manufacturing: Crystal manufacturers continue to operate at full capacity due to strong semiconductor demand. With wafer prices on the rise, companies are unable to provide an adequate supply, and are considering gradually increasing production to meet demand.

Solar cell applications: Due to the sharp rise in demand for single-crystal wafers, which have a high conversion efficiency, crystal manufacturers in China in particular are planning large-scale capital investments. Moreover, the supply of large graphite materials is expected to remain tight in the near term as crystal-growing furnaces are become larger.

[General industries applications]

Applications for EDM electrodes are currently solid due to signs of a recovery in demand for automotive applications in Thailand. Utilization remains high for products for continuous casting, primarily among construction-related and semiconductor companies in Japan.

<Carbon Products for General Industries>



Key points

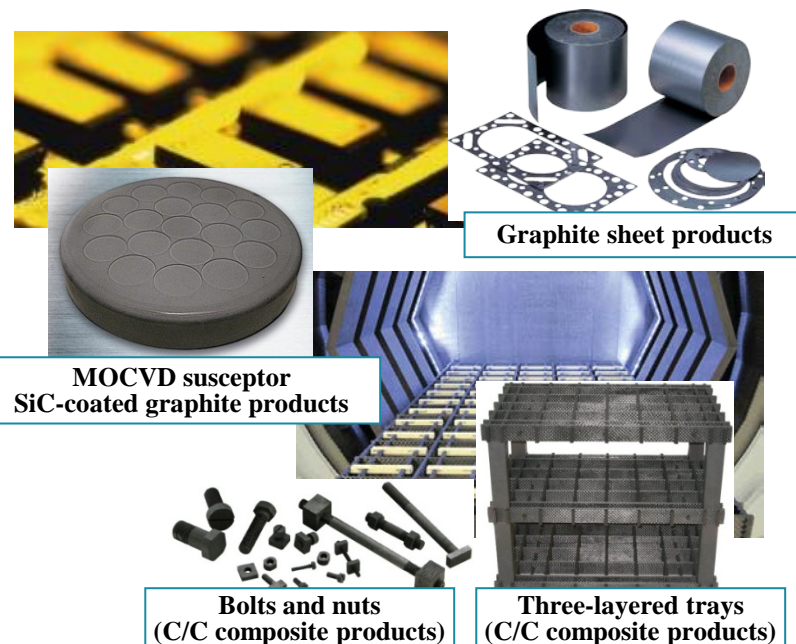
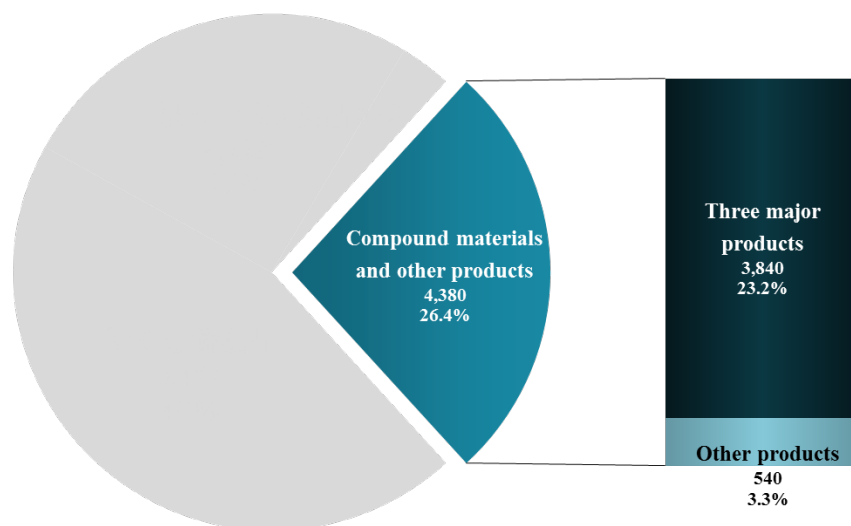
[Carbon products for mechanical applications]

The performance of core products in Japan such as bearings and sealing rings was strong overall. The Company has ramped up public relations activities to bring in new orders for pantograph sliders from private Japanese railways and overseas companies. Targets are steadily being achieved, as with the start of the supply of products for automotive parts.

[Carbon products for electrical applications]

Demand for small motor applications was solid, but competition remained harsh, and we expect this to continue going forward. The Company is accelerating the optimization of global manufacturing and sales chains and adapting to market prices by reducing manufacturing costs.

<Compound Materials and Other Products>



Key points

[Three major products]

SiC-coated graphite products: All companies continue to operate at full capacity, and applications for semiconductors are strong, with indications that companies are upgrading their facilities. LED applications are expected to perform well from H2 given the recovery in utilization in South Korea and a gradual increase in the utilization rate in Japan as well.

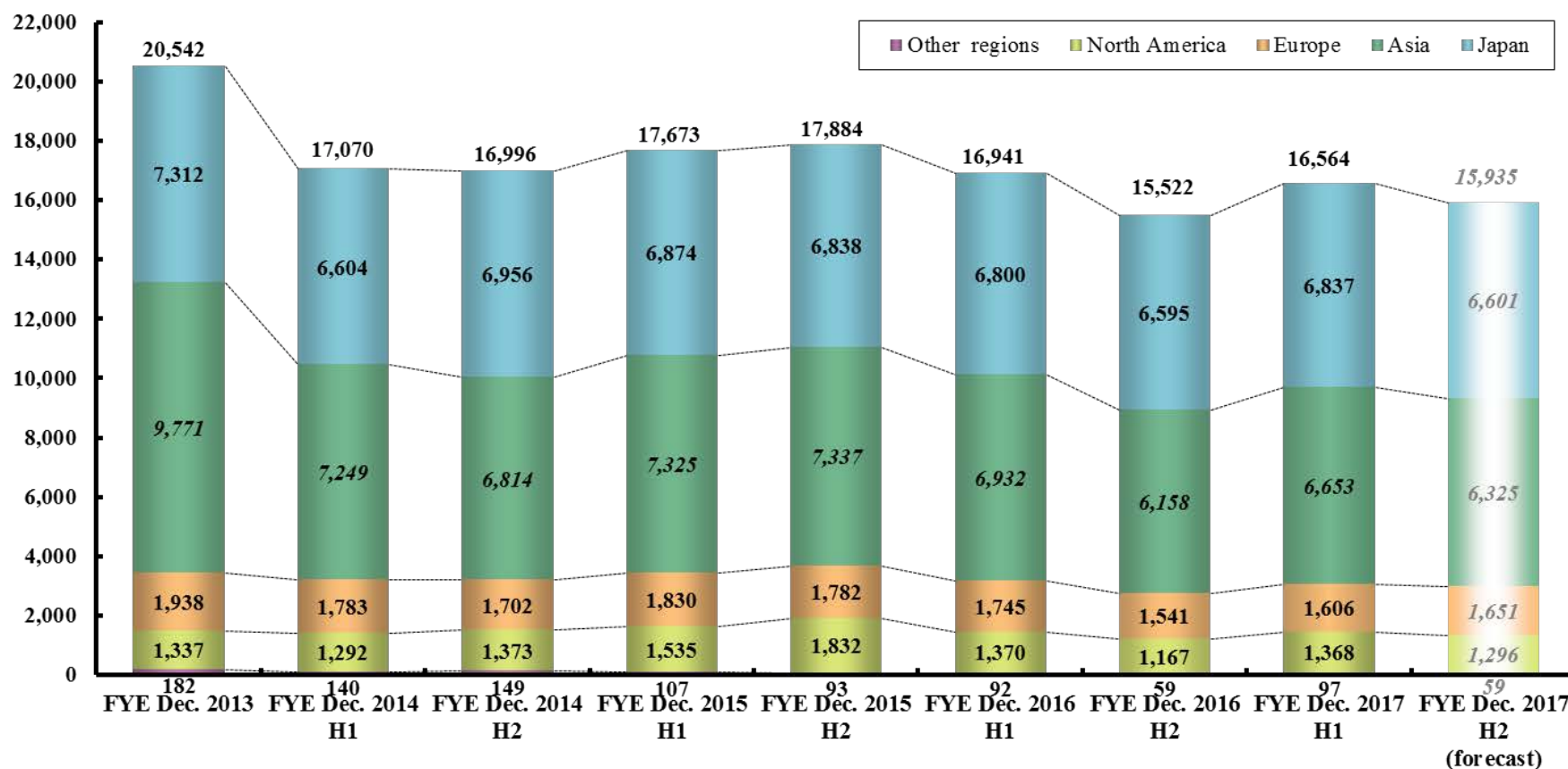
C/C composite products: Semiconductor applications remained solid performers. Solar cell applications faced difficult conditions due to a drop in the utilization rate of polycrystals. Industrial furnaces are expected to perform well from H2 due to gradual progress in shifting away from metals.

Graphite sheet products: Metallurgical, automotive, and electronics applications remained stable overall.

Part 1. 5. Sales by Region

- ✓ The Company is considering consolidating bases to optimize global manufacturing and sales.
- ✓ The US subsidiary is aiming to break even in this fiscal year by reinforcing its management structure.

(Unit: Yen, millions)



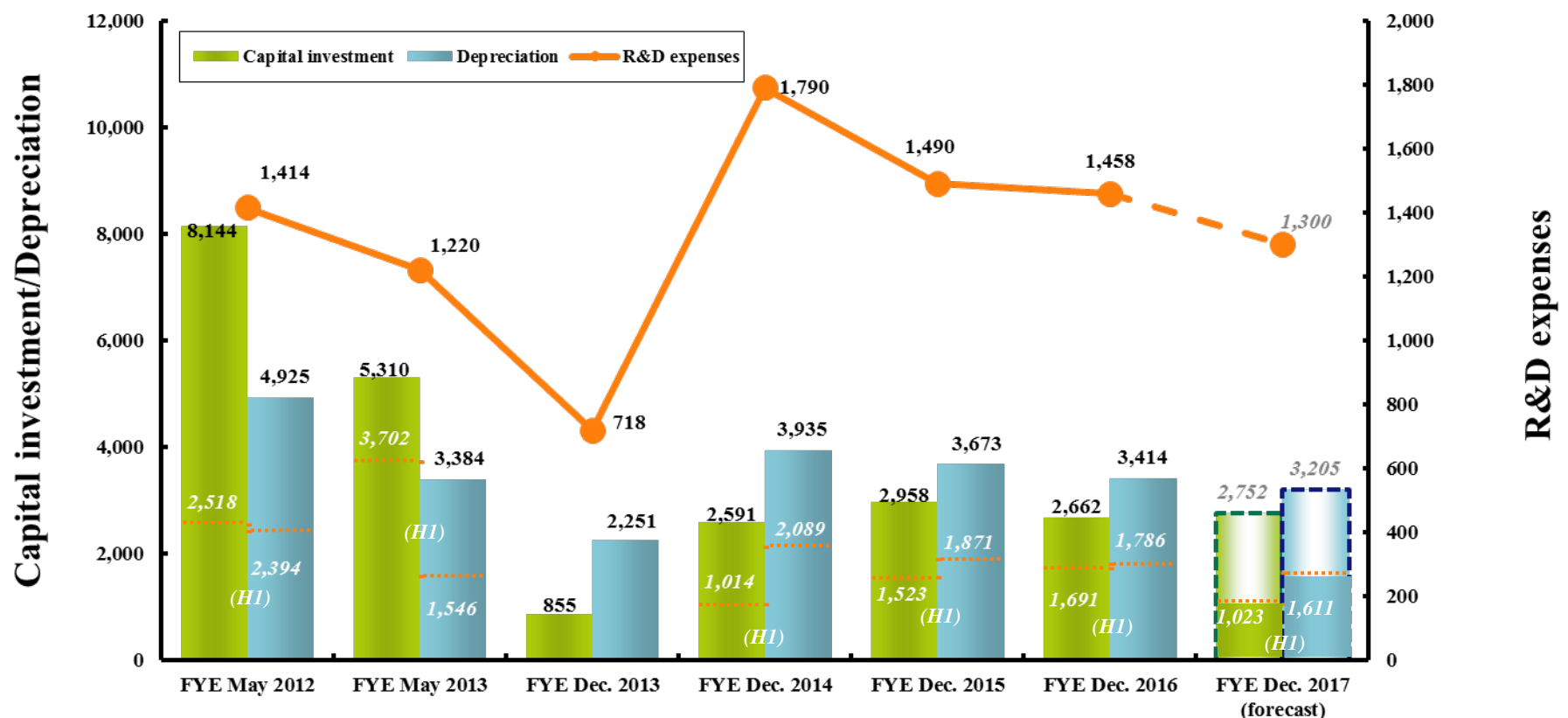
Note: The final day of the fiscal period was changed from May 31 to December 31 as of the fiscal year ended December 31, 2013.

For this reason, the fiscal year ended December 31, 2013 was an irregular seven-month fiscal period (nine months for some subsidiaries).

Part 1. 6. Capital Investment, Depreciation, and R&D Expenses

- ✓ Capital investment, depreciation, and R&D expenses are generally in line with plan.
- ✓ About half of capital investment in the first half was strategic investment aimed at expanding production capacity for carbon products for mechanical applications.

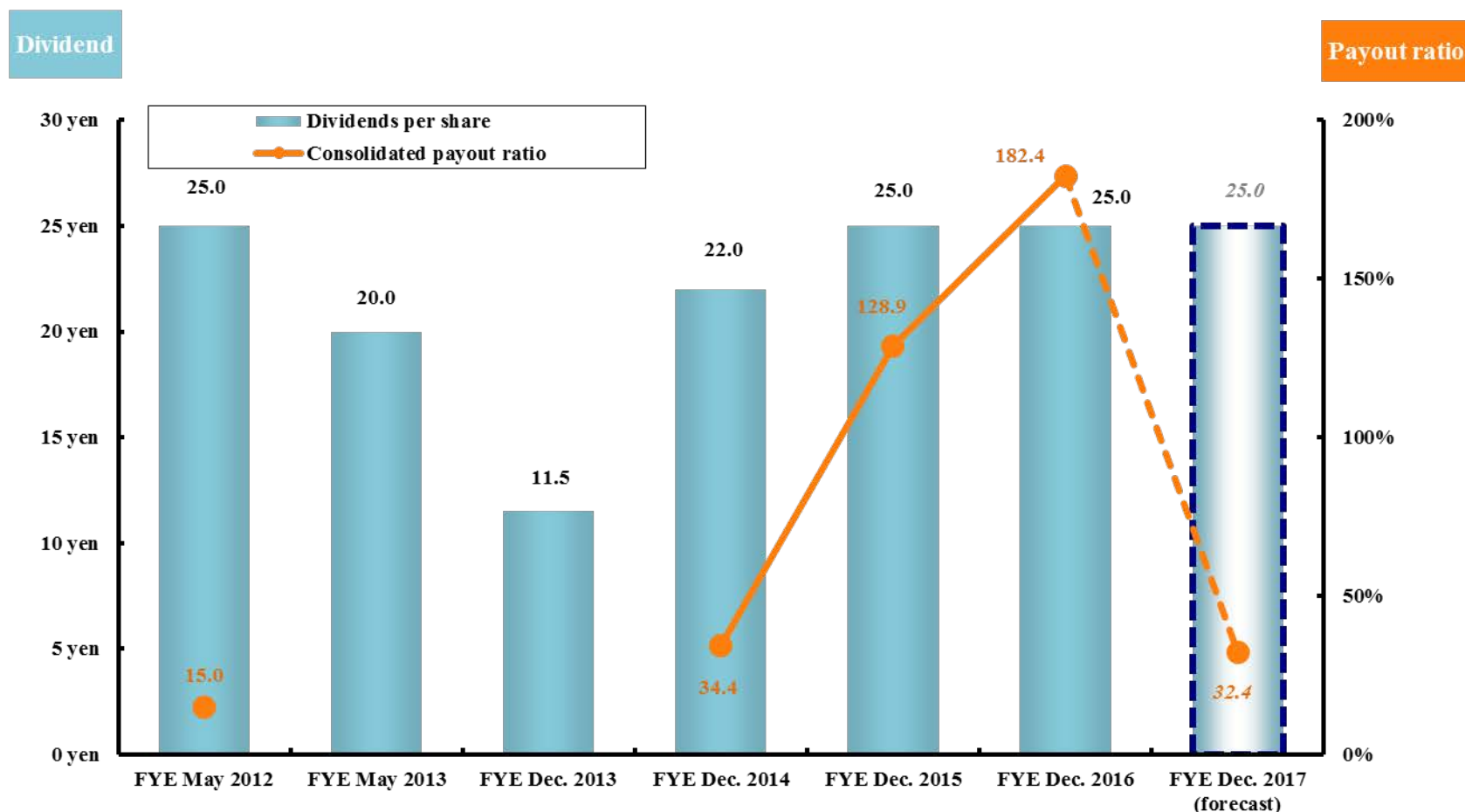
(Unit: Yen, millions)



Note: The final day of the fiscal period was changed from May 31 to December 31 as of the fiscal year ended December 31, 2013.

For this reason, the fiscal year ended December 31, 2013 was an irregular seven-month fiscal period (nine months for some subsidiaries).

✓ Stable return of profits to shareholders while taking into account the balance between capital efficiency and strategic investments



Note 1. The final day of the fiscal period was changed from May 31 to December 31 as of the fiscal year ended December 31, 2013.

For this reason, the fiscal year ended December 31, 2013 was an irregular seven-month fiscal period (nine months for some subsidiaries).

2. Since profit attributable to owners of parent was negative in the fiscal year ended May 31, 2013 and the fiscal year ended December 31, 2013, information on consolidated payout ratio is excluded here.

Part 1. 8. Consolidated Balance Sheet and Statement of Cash Flows for the First Half of the Fiscal Year Ending December 31, 2017

(Unit: Yen, millions)				(Unit: Yen, millions)		
Consolidated Balance Sheet	Jun. 30, 2016	Dec. 31, 2016	Jun. 30, 2017	Consolidated Statement of Cash Flows	FYE Dec. 2016 H1	FYE Dec. 2017 H1
Total assets	69,327	69,797	69,559	Cash and cash equivalents at end of period	7,116	4,915
Notes and accounts receivable - trade	11,636	12,083	12,302	Net increase (decrease) in cash and cash equivalents	(30)	(1,509)
Inventories	16,005	16,131	15,728	Cash and cash equivalents at beginning of period	7,147	6,424
Property, plant and equipment	25,769	25,421	24,703	Net cash provided by (used in) operating activities	2,272	3,236
Total liabilities and net assets	69,327	69,797	69,559	Net cash provided by (used in) investing activities	(715)	(3,797)
Interest-bearing liabilities	2,236	1,965	1,619	Net cash provided by (used in) financing activities	(832)	(925)
Capital stock	7,692	7,692	7,711			
Net assets	56,976	58,182	57,998			
Equity ratio	80.3%	81.4%	82.2%			

Shipments of graphite products for Chinese high-temperature reactor-pebble-bed modules are trending in line with plan

- Shipments of graphite products for high-temperature reactor-pebble-bed module (HTR-PM) project in Shandong Province, China (amounting to sales of more than 3 billion yen for the Company) are going smoothly. Installation of one of the two module sets has been completed, the second is currently being installed, and shipments should be completed within the year (about 70% of payments have already been received).
- The Company is using these results to its advantage and is currently approaching companies about the next project in China and projects in the US, Russia, Indonesia, and Poland.



Photograph provided by Chinergy Co., Ltd.

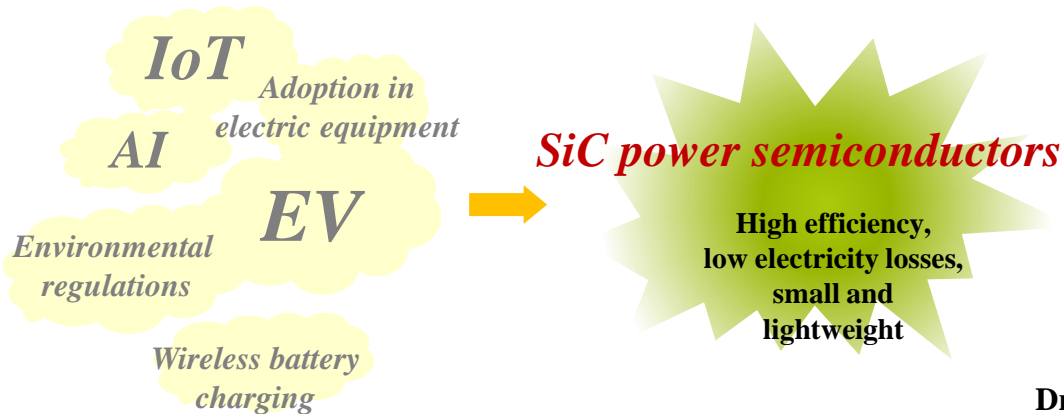
Chinese solar cell joint venture: Joint venture agreement dissolved and equity transferred amicably

- Equity was transferred (about 500 million yen) to the Chinese partner of Jiaxiang Toyo Tanso Co., Ltd. (in which the Company had 55% equity). Since operations began in 2006, China's solar cell market has gone through sudden rises and sharp expansions, and the Company, having seen significant results from its investments, believes that its role is over.
- Including this, annual production capacity of isotropic graphite materials has decreased by 3,000 tons (from 18,000 tons to 15,000 tons), and the Company is thus adapting to the market scale and reducing fixed costs.

Part 1. Progress with Green Innovation Business

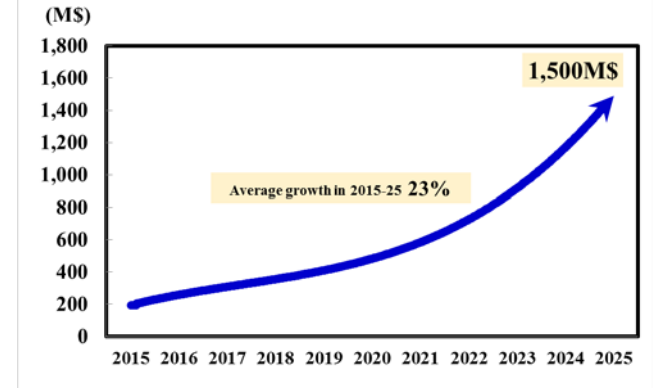
(1) Dawn of SiC power semiconductor and Toyo Tanso's new technology

SiC power semiconductor, trump card in energy conservation



Market forecasts for SiC power semiconductor market

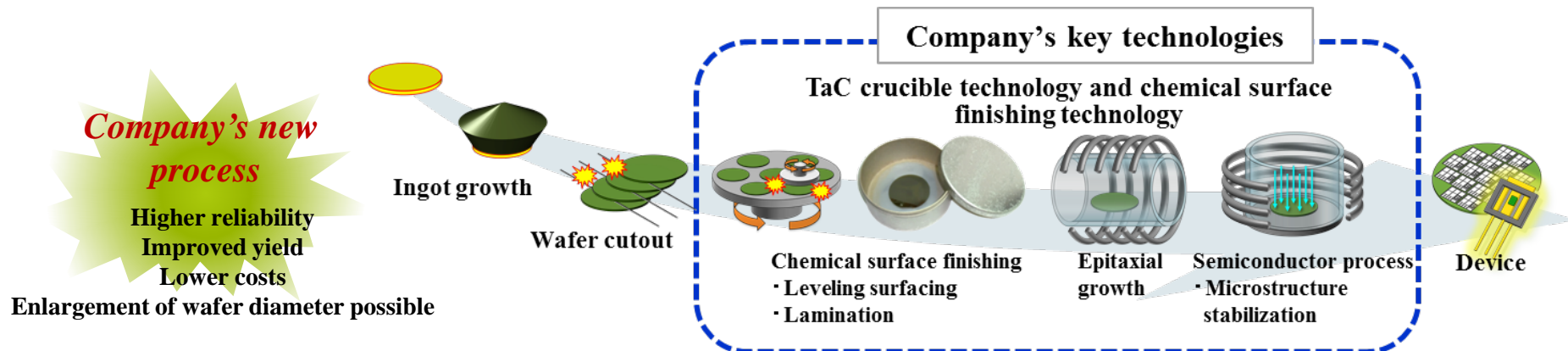
Prepared by Company based on statistical information and customer information



Dramatic growth in 2020-25 to a market seven to eight times as large as current levels

Boost for full-scale introduction of Company's proprietary technology in SiC power semiconductors

Current technical issues: Wafer's latent scratches, distortion, and yield rate

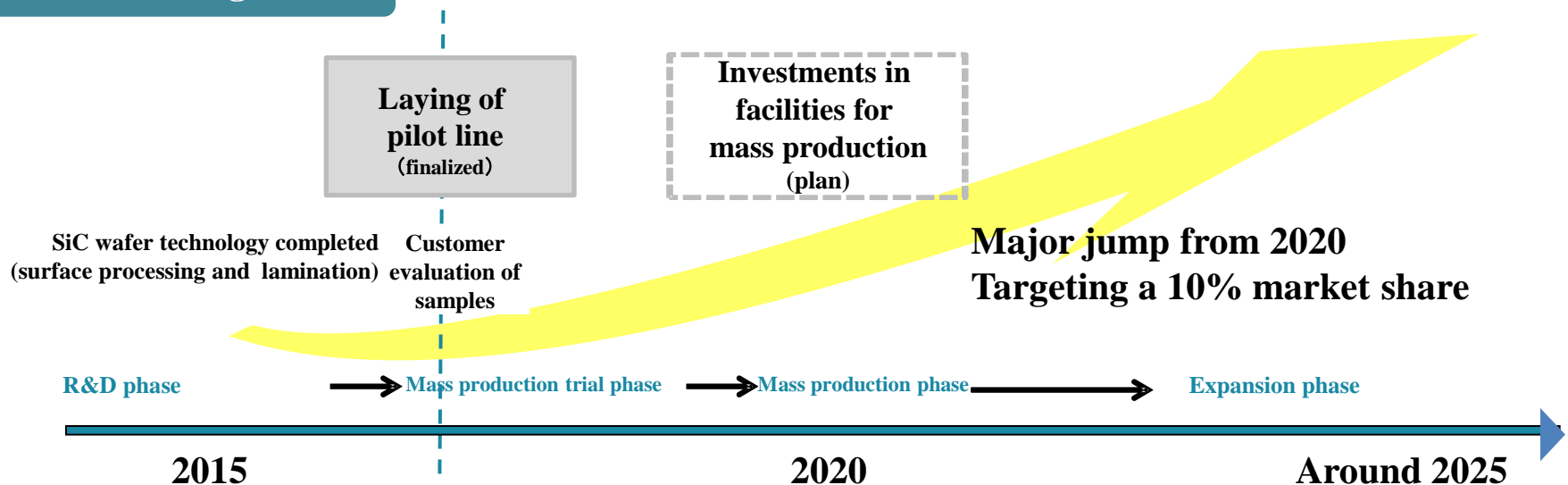


Strategy for expansion

- ◆ The key to business is commercializing new technology and making it the de facto standard through alliances.
- ◆ The Company is considering alliances with strategic partners to create a value chain centered on its new technology and processes.

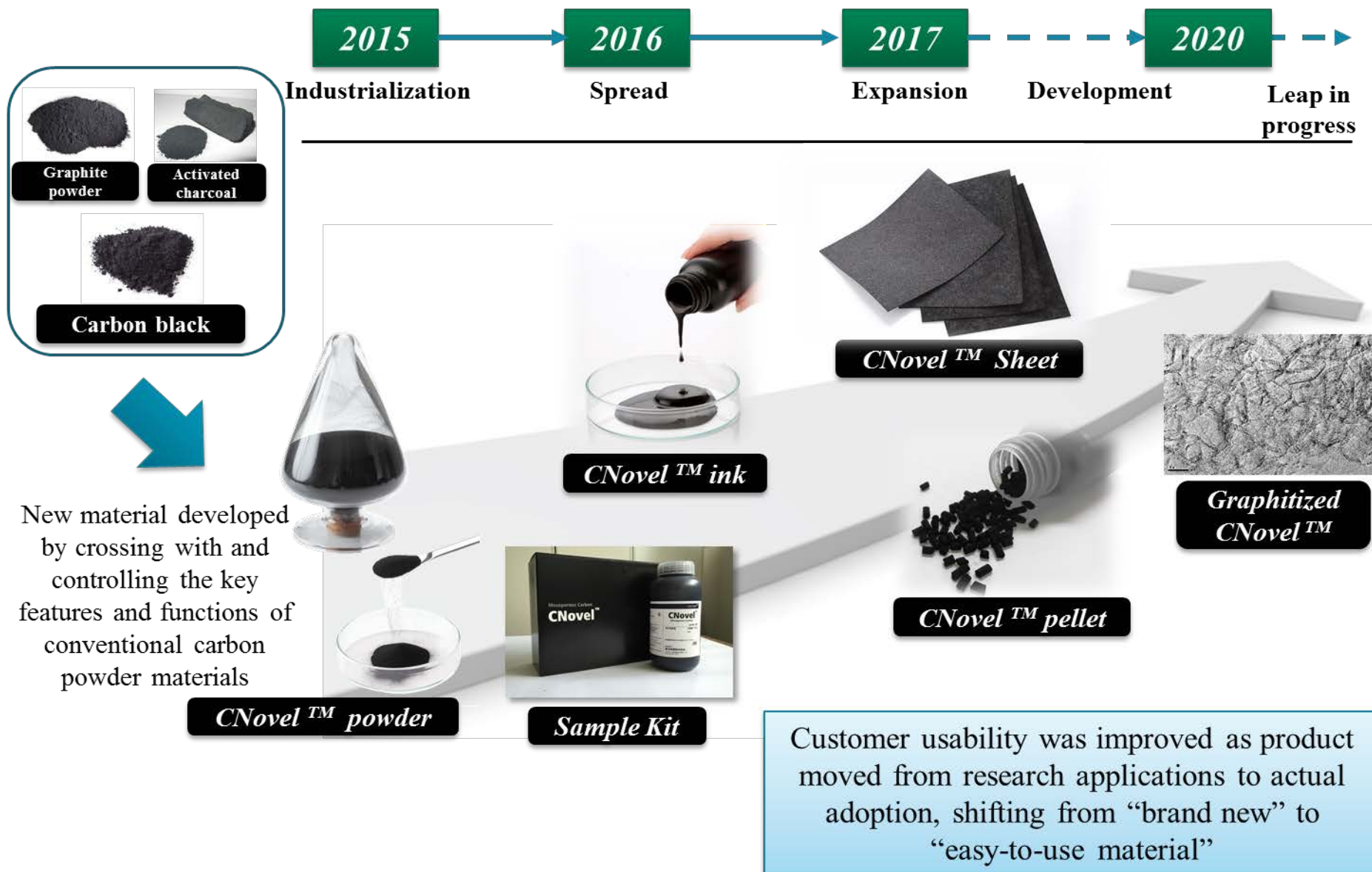


Outline for growth



Part 1. Progress with Porous Carbon (CNovel™) Business

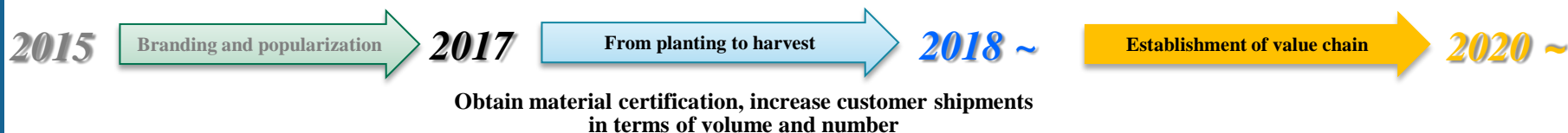
(1) Record of manufacturing development



Part 1. Progress with Porous Carbon (CNovel™) Business

(2) Business development and new domains

Company's **entry into new business domain** using proprietary materials with unique functions to create devices that can solve social issues.

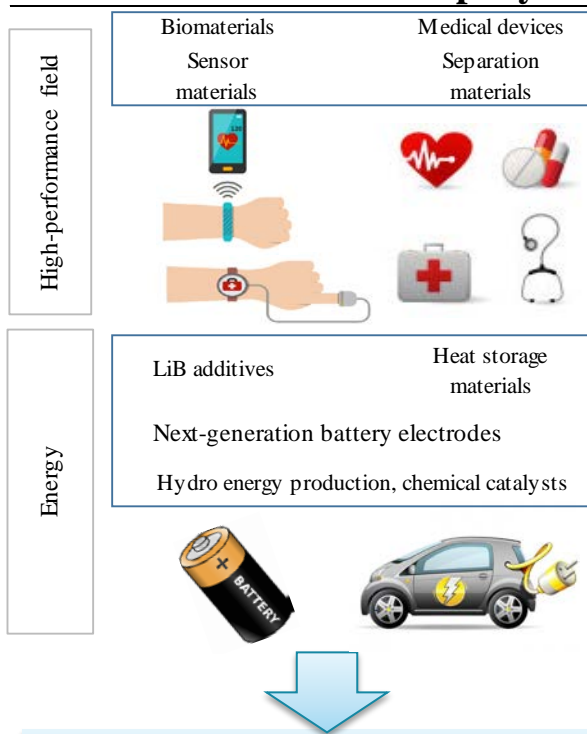


Proprietary materials



Ongoing developments to adapt backcasting for new types of device; steady progress from development to adoption in devices

Domains into which Company entered



IoT, automation, electrification, robotization

Social issues

Improving daily comfort, energy conservation

Life science

Reducing environmental impact

Mass value

Consumers

Part 2. Shift from Business Structure Reforms to Growth Strategy

~ Status of progress and review ~

Part 2. 1. Progress with Business Structure Reforms ~ Toward Completion (2018) ~

Thanks to the efforts of the entire company and a favorable market environment, achievement rate is 70-80%

~ Company will begin preparing for growth while continuing to reinforce its initiatives towards completion (2018) ~

Numerical targets

3pt improvement in marginal profit ratio
(compared to fiscal year ended December 2015)

- ★Current 2pt improvement, including shift to highly profitable products and restored sales prices

Fixed costs cut by 2.0 billion yen
(compared to fiscal year ended December 2015)

- ★Including consolidation of bases in Japan and overseas, levels are close to target

Operating income: 3.0 billion yen; Net income: 2.0 billion yen

- ★Steady progress in improving revenue (H1 results: 1.32 billion yen in operating income and 1.12 billion yen in net income)

Priority measures

(1) Focus resources on select businesses

- ★Accelerated shift to highly profitable products and products representing Company's strengths.
- ★Focus on restoring sales prices in light of profitability of individual products and overall optimization

(3) Optimize staffing

- ★We will continue to curb hiring and review personnel organization (staff reduced by 182 compared to 2015)

(2) Optimize organization

- ★Reorganization of sales, development, and management organizations with emphasis on flexibility and adaptability
- ★Completion of transfer of equity in Chinese joint venture
Consolidation of bases in Japan and overseas is currently under consideration

(4) Strengthen business management

- ★Ongoing efforts to strengthen internal management (establishment of governance committee, etc.)
- ★Support of overseas subsidiaries, such as US subsidiary (review of system and operations, including dispatch of staff)

Part 2. 2. From Business Structure Reforms to Growth Strategy ~ Role of new medium-term business plan ~

- ◆ The Company will begin to implement its offensive growth strategy, founded on its lean business foundation and corporate structure fostered through ongoing structure reforms.
- ◆ The new medium-term business plan is currently under review based on the two focal points of the rehabilitation of existing core businesses and the redefinition of business domains.
- ◆ The Company will aim for a new corporate vision with an outward-looking orientation, without being restricted by past experiences and frameworks but utilizing the Company's uniqueness.

Business structure reforms

(Reforms without exception and reinforcement of business foundation)

- Establishment of solid business foundation and corporate structure
- Awareness-raising (revenue and corporate value as the primary goal)
- Reorganization and optimization of organization and staff
- Establishing and strengthening business management and governance...

New medium-term business plan (Offensive management and growth strategies)

**Under consideration*

- Recovery of earning capacity in existing core businesses
- Full-scale development and launch of two businesses for new products
- Redefinition of business domains and entry into new fields
- Build on and augment growth through M&A and alliances
- Greater capital and asset efficiency, reinforcement of shareholder returns...

Sustainable growth and
maximization of corporate value
(Steady and bold implementation)

Start of
structure
reforms



2016

Start of
consideration of new
medium-term business plan



2018

Completion and start
of new medium-term
business plan



2020

Around 2022

Part 2. 3. Blueprint of New Medium-term Business Plan (Growth Strategy)

~ Under consideration ~

Existing core business

Focus on high value-added products
(coating, C/C, nuclear power, etc.)

Redevelopment of volume zone
(Reconsideration of optimal production sites and business format, etc.)

Entry into new applications
(transport machinery, energy devices, etc.)

- ◆ Continue to thoroughly focus on coating and C/C products that can highlight high added value and pursue increased revenue
- ◆ Boldly reconsider optimal production site and business format for volume zone products that serve as a support, and restore and stabilize earning capacity by thoroughly pursuing total competitiveness
- ◆ Make good use of M&A and enter new applications, using the entry into automotive applications (carbon for machinery) as a model

New business domains

New products and businesses that utilize existing business foundation and customer base

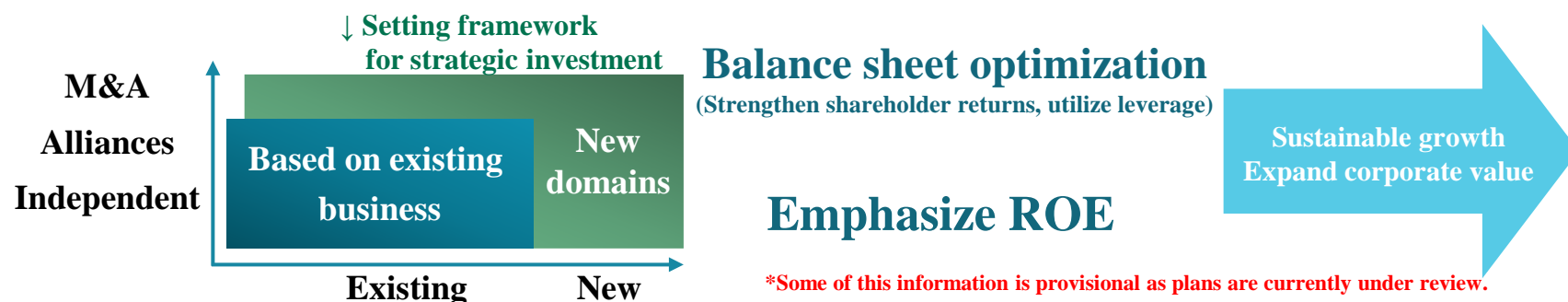
Compound materials and combination products
(carbon × different material)

Enter new areas using elemental technology^{*1}
(not only carbon)

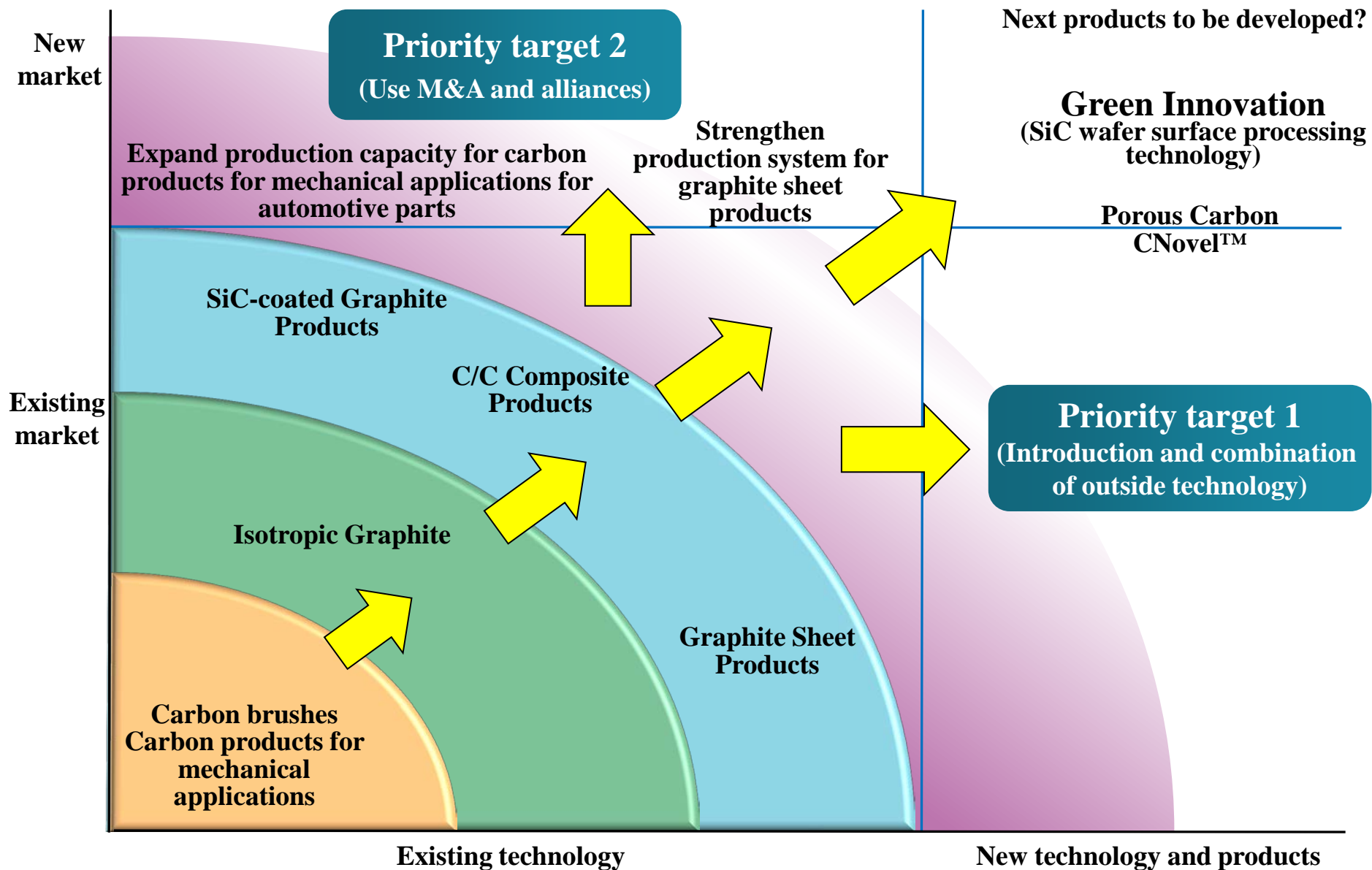
^{*1} For example, powder, heat control, and surface modification technology

- ◆ Launch and expand two new products on a full scale (porous carbon, SiC wafer surface processing)
- ◆ Make full use of open innovation, alliances, and M&A to search for and create next growth driver
- ◆ Target fields are fields that solve social issues and innovation fields such as energy solutions (energy creation, energy conservation, energy storage), thermal management, IoT, environment, and purification^{*2}

^{*2} For example, next-generation energy devices, thermal energy equipment, sensors, etc.



Part 2. 4. Orientation of Technology, Products, and Market ~ Technology utilization and market expansion ~



APPENDIX

Carbon industry

Carbon black

Graphite electrode

Company's business field: Focus on high-performance, high value-added

Special carbon

Special Graphite Products (Isotropic Graphite)

Heat-Technology Material Division

- Electronics Applications
- General Industries Applications
- Others

- Review industry's supply capacity
- Heightened price competition
- Deterioration in revenue structure
- Emergence of local manufacturers in China, primarily in solar cell markets

Carbon Products for General Industries

Tribology Division

- Carbon Products for Mechanical Applications
- Carbon Products for Electrical Applications

- Relatively stable revenue structure

Compound Materials and Other Products

Heat-Technology Material Division

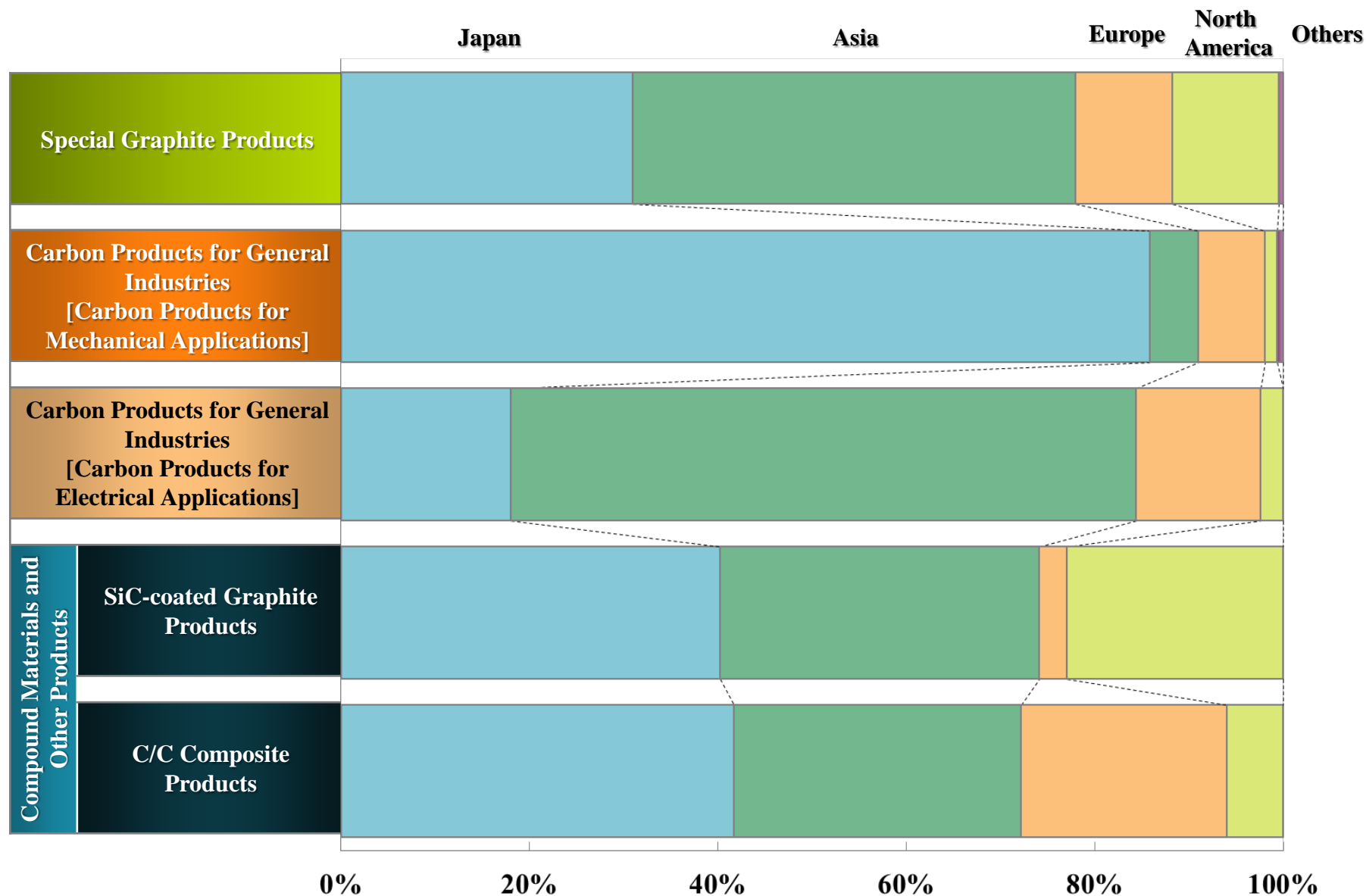
Performance Chemicals Division

- SiC-coated Graphite Products
- C/C Composite Products
- Graphite Sheet Products

- High value-added products
- Initiatives to create new materials through combinations with different materials

Business Environment 2. Business Expansion: Fields

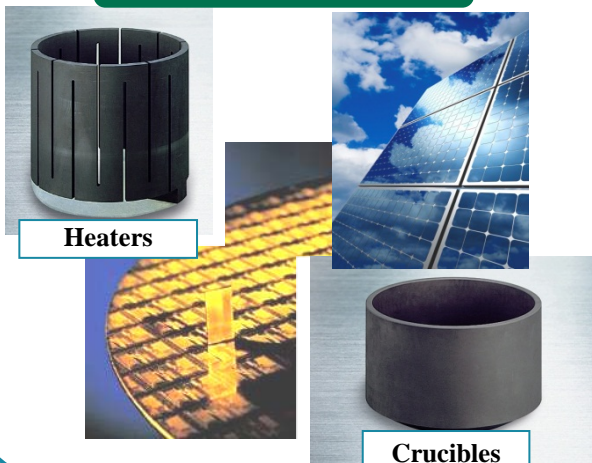
Focus areas			Electronics field			Machines for general industries field	Transportation equipment field	Electrical field	Advanced technology field
			Solar cells	Semiconductors	LEDs				
Special Graphite Products			◎	◎	○	◎ Price competition Demand for quick delivery			○
Carbon Products for General Industries [Carbon Products for Mechanical Applications]						◎	◎	○	
Carbon Products for General Industries [Carbon Products for Electrical Applications]						○	◎	◎	
Compound Materials and Other Products	[Three Major Products]	SiC-coated Graphite Products	○	◎	◎				
		C/C Composite Products	◎	◎		◎ Demand for replacement to other materials			○
		Graphite Sheet Products	○	◎		○	◎		
Newly Developed Products		Porous Carbon CNovel™							○
		Green Innovation		○ For next-generation semiconductors					
Business Environment, Company's Conditions			Price competition	Longer life	Pursuit of high quality		Reinforcement of global expansion		Reinforcement of global expansion



Diverse Products in Wide Range of Fields and Applications

Special Graphite Products

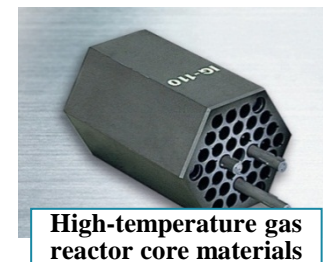
Electronics Applications



General Industries Applications

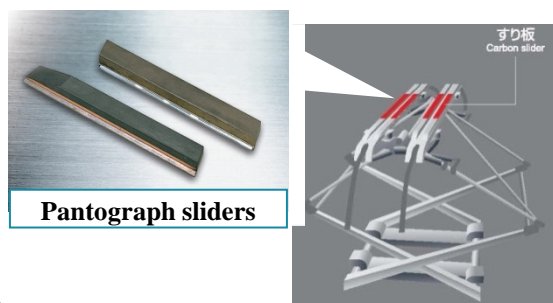


Other



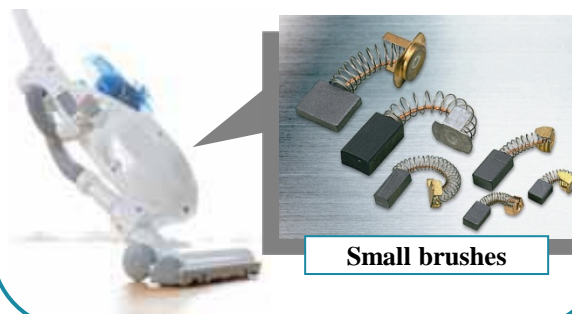
Carbon Products for General Industries (for Mechanical Applications)

- Pantograph sliders
- Automotive parts
- Bearings, shaft bearings, etc.

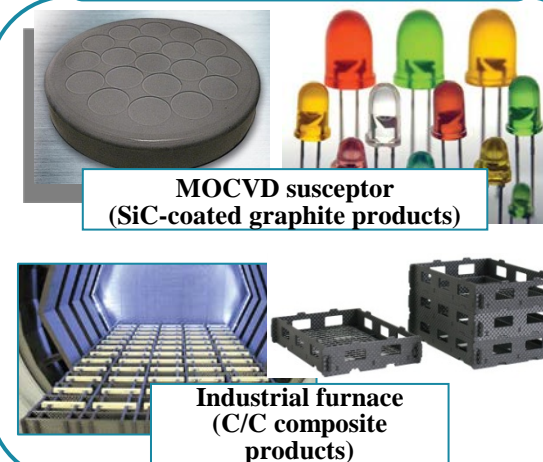


Carbon Products for General Industries (for Electrical Applications)

- Brushes for generators
- Brushes for vacuum cleaners
- Brushes for electric power tools



Compound Materials and Other Products





Note: This presentation contains “forward-looking statements” and forecasts of business results. These statements are not historical facts but instead represent the Company’s beliefs regarding future events, many of which, by their nature, are inherently uncertain and beyond the Company’s control. It is possible that the Company’s actual results may differ, possibly materially, from the anticipated results and financial condition indicated in these forward-looking statements.

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