



2019 1H Financial Results and Tasks for the 2H



- 2019 2Q Financial Results Briefing Material -

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1. Business environment for the 2H of 2019

Global economy slows down, triggers serious production/inventory adjustment in customer industries

❑ Semiconductor/LCD industry

Hit bottom in 1H, crawling along, mosaic signs of recovery in 2H

- High-purity gases for electronics
Power failure in customer. Recovery expected in 4Q
- HD media
Hit bottom in 1Q, recovering gradually, full recovery is expected to start in 4Q
- SiC epitaxial-wafer for power devices
Grew 30% in 1H, strong market for use in devices other than photovoltaic cells
- Ceramics
Slow demand for smartphones delays recovery in demand for MLCCs until 2020

❑ Automobile

- Decreased production in China and Europe continues. Recovery is expected in 2020
- Progress in “CASE” and “electrification” of automobiles

















❑ FA/Industrial equipment

- Stagnant export to China & low shipment volumes continue. Recovery is expected in 2020

❑ Graphite electrodes

- In 2H, demand decreases due to use of stocks of GEs by electric steel manufacturers. Hits bottom in 2H. Recovery in 2020

Weather map by industry

	2H 2018	1H 2019	2H 2019	Trend in 2020
Electronic materials				
Automobile				
FA/Industrial equipment				
Graphite electrodes				

2. 1H 2019 financial results



Achieved all-time high income for the first half of a year

(Unit: Billions of yen)	1H 2018 results a	1H 2019 results b	Increase/ decrease b-a	1H 2019 forecast announced on Feb.14, 2019
Net sales	455.8	475.5	19.6	520.0
Operating income	77.9	85.5	7.6	91.0
Ordinary income	77.6	84.8	7.3	90.5
Net income attributable to owners of the parent	57.9	65.8	7.9	63.0
Midterm dividend per share	¥20	¥50*	¥30	¥50

*Will be paid from Sep. 9

◆ Extraordinary loss

- Posted impairment loss of ¥1.1 billion (including loss on removal of equipment concerning streamlining of domestic aluminum can production lines)

2. Forecast for 2019 full-year results



We revised forecast for 2019 full-year results

We confirmed the bottom line of our profitability under severe conditions

(Unit: Billions of yen)	2018 full-year results A	2019 full-year forecast B	Increase/ decrease b-a	2019 full-year forecast announced on Feb.14, 2019
Net sales	992.1	980.0	-12.1	1,100.0
Operating income	180.0	145.0	-35.0	190.0
Ordinary income	178.8	142.0	-36.8	185.0
Net income attributable to owners of the parent	111.5	90.0	-21.5	120.0
Annual dividends per share	¥120	¥130 (Forecast)	¥10	¥130

◆ Assumptions for the revision

- Sales prices of graphite electrodes in 2H: almost 5 times as high as those in 2017
- Sales volumes of graphite electrodes in 2019: about 15% less than earlier forecast
- Extraordinary loss: ¥20 billion (to promote business reform)

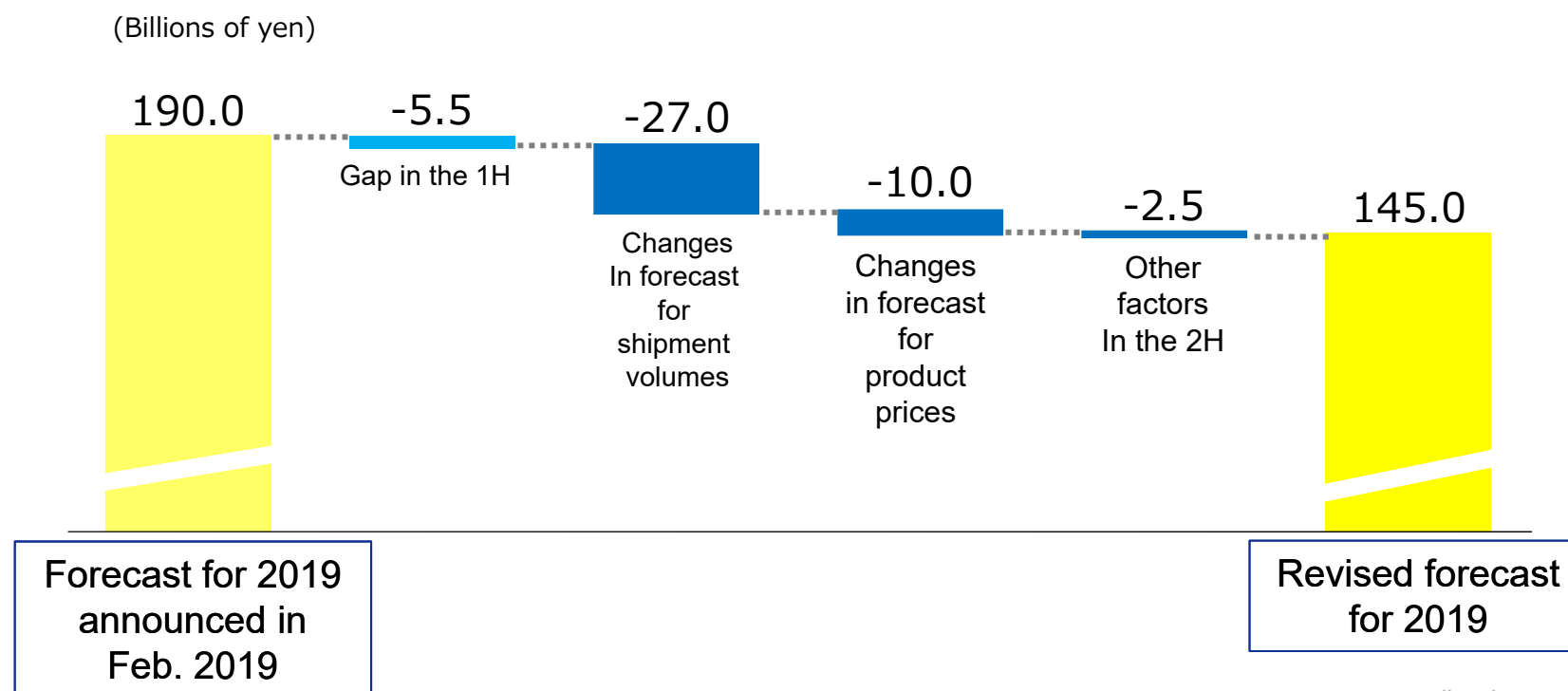
2. Factors affecting forecast for 2019 results



Factors that caused changes in forecast for 2019 financial results

Changes in shipment volumes: Reduction in production of graphite electrodes due to inventory adjustment in Europe and stagnating Chinese market

Changes in market prices : Falls in prices of graphite electrodes.
Reduced demand for petrochemicals in Asia



3. Topics and tasks for main businesses

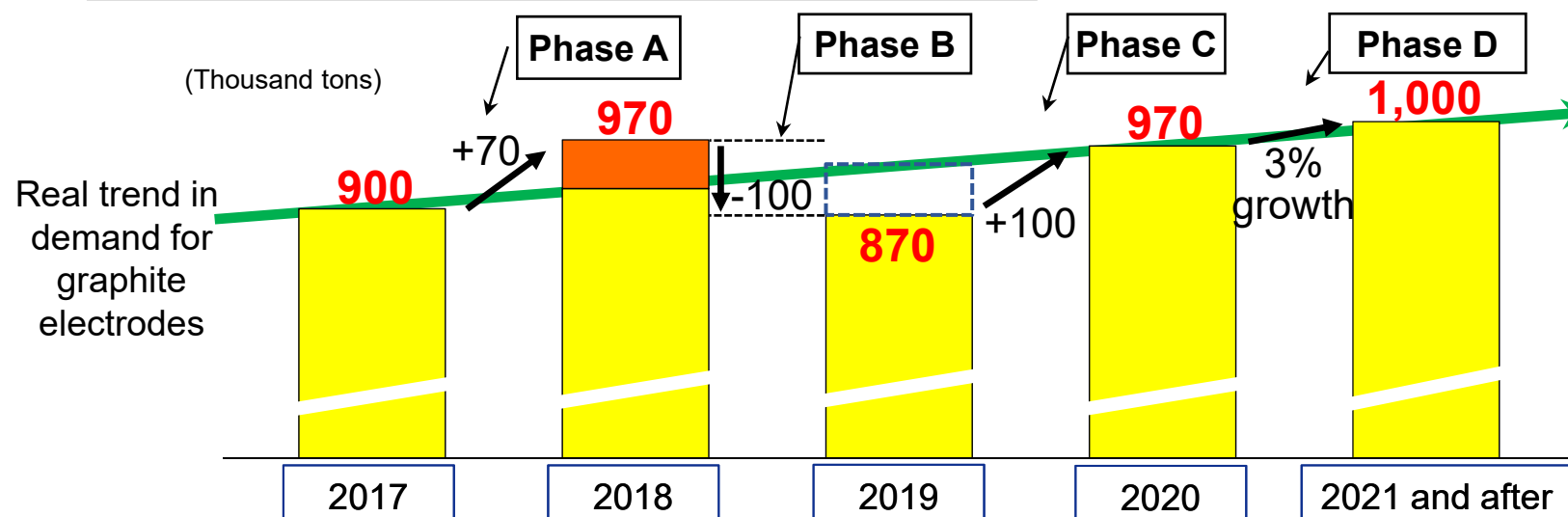
Graphite electrodes – 1



Graphite electrodes : 2019 is the bottom, adjustment ends in 2H, Market will normalize in 2020

- Reduced production of GEs by 15% from the amount forecasted at the beginning of 2019
- The latest real demand is 900,000t/y (excluding China). But GE customers increased stocks of GEs in 2018, causing apparent overshooting of demand. (Phase A)
- In 2019, economic slowdown in China and China-US trade friction reduced demand for steel and GE customers reduced stocks of GEs, causing apparent reduction in demand. (Phase B)
- Inventory adjustment ends in 2019, demand for GE will recover in 2020 (Phase C), supply-demand situation will be tight in and after 2021, (Phase D)

Apparent demand for UHP GEs (excluding China)

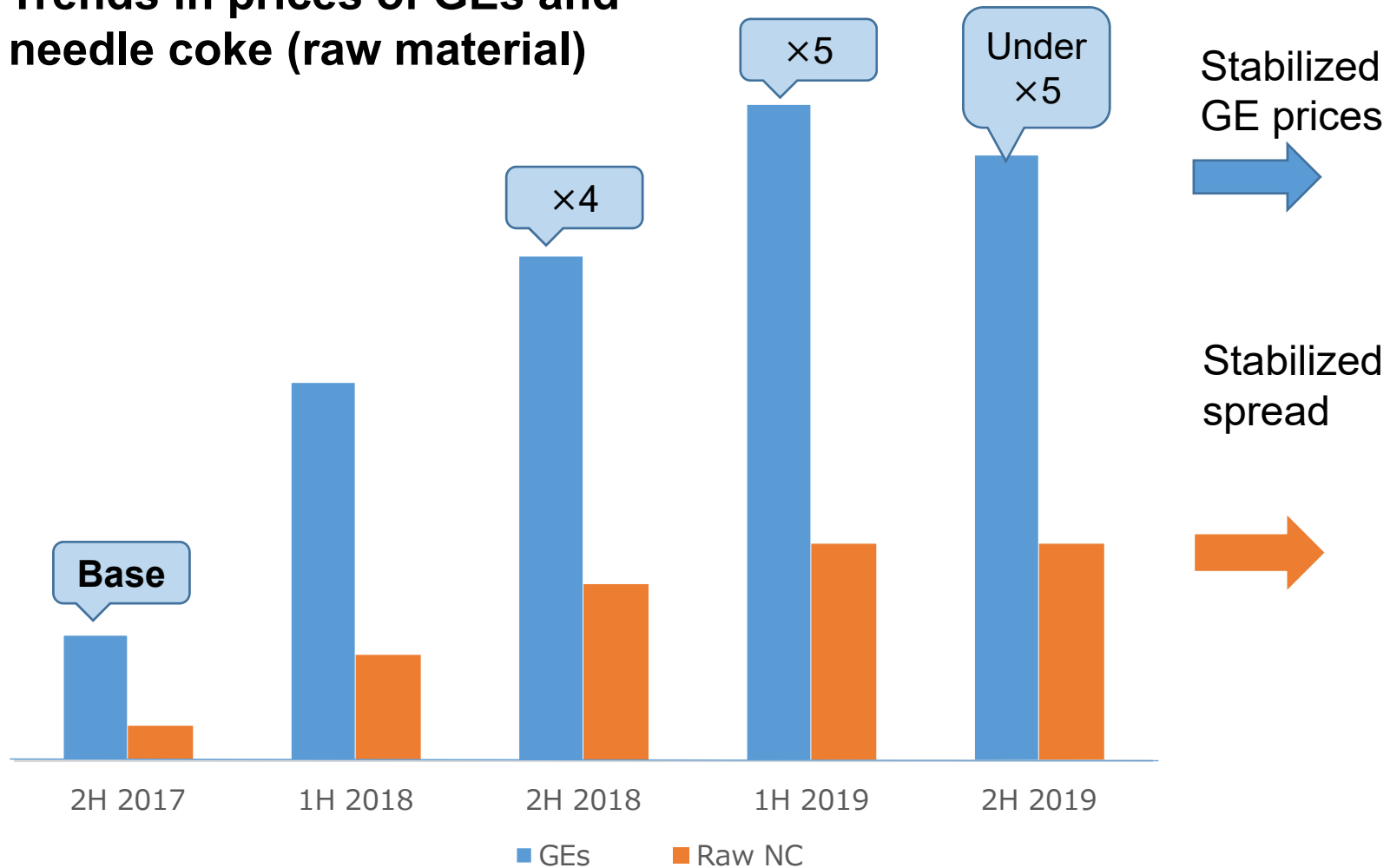


3. Topics and tasks for main businesses

Graphite electrodes – 2



Trends in prices of GEs and needle coke (raw material)



3. Topics and tasks for main businesses

Graphite electrodes – 3

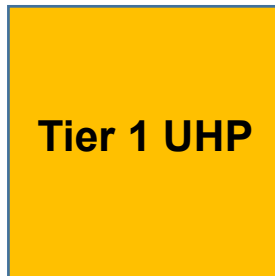


Classes of graphite electrodes

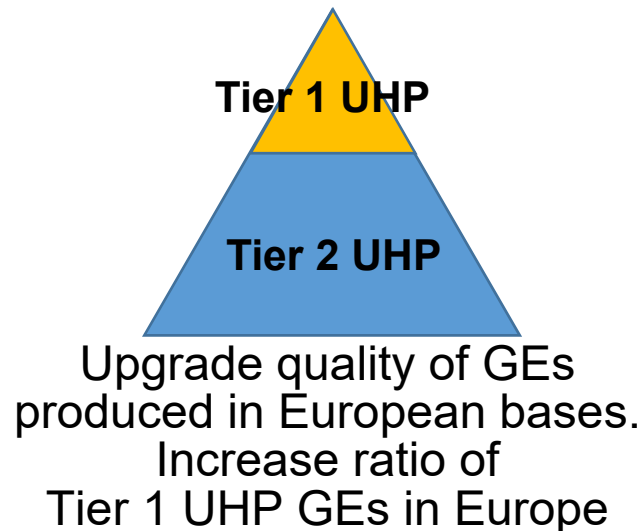
- UHP (GEs for electric furnaces) — Tier 1 (GEs customized for each customer)
- HP (GEs for hybrid electric furnaces) — Tier 2 (Uniform GEs without customization)

Characteristics of each market for graphite electrodes

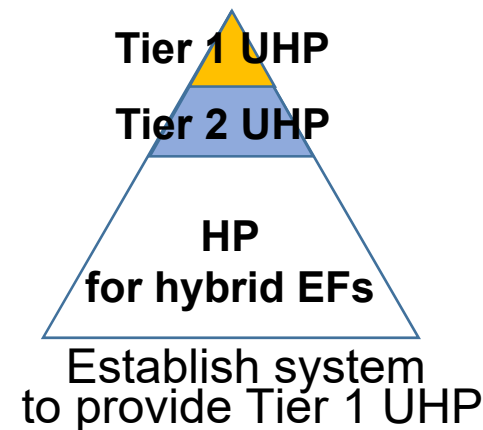
US, East Asia
(JP, Korea, Taiwan)



Europe



China



Stabilize earnings at higher level

3. Topics and tasks for main businesses

High purity gases for electronics



Situation in 1H 2019

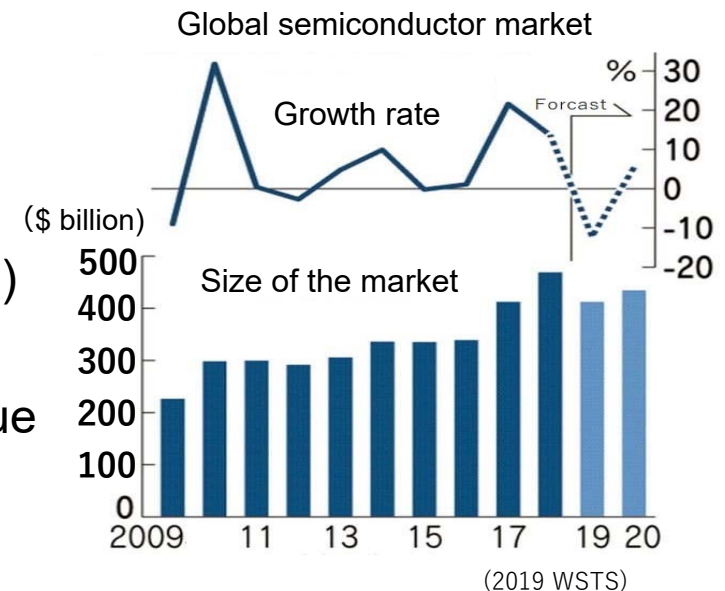
- Demand decreased due to global adjustment in production of semiconductors
- Shipment for logic chips, CIS and display production are strong
- Shipment for memory chips such as 3D-NAND and DRAM is weak due to stagnant memory chip market and production adjustment

Forecast for 2H 2019

- Demand for gases will recover in 4Q
- Progress in semiconductor production technologies (multilayer 3D-NAND, fine DRAM) pushes up demand for high purity gases
- Watch US-China trade friction and Huawei issue

Tasks and strategies for 2019

- Prepare for recovery of semiconductor market in 2020, and strengthen supply system for high-purity gases. (Increase production capacity, Expand plants in China, Establish JV, etc.)



3. Topics and tasks for main businesses

Hard disk media



Situation in 1H 2019

- Shipment volumes of HD media down due to decrease in demand for near-line (NL) storage caused by stagnant data center (DC) construction
- Developed next-generation MAMR/HAMR media

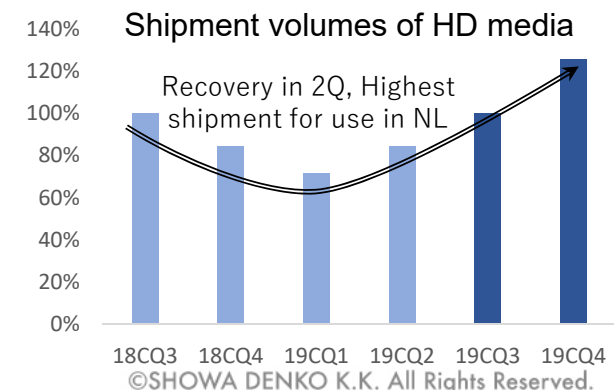
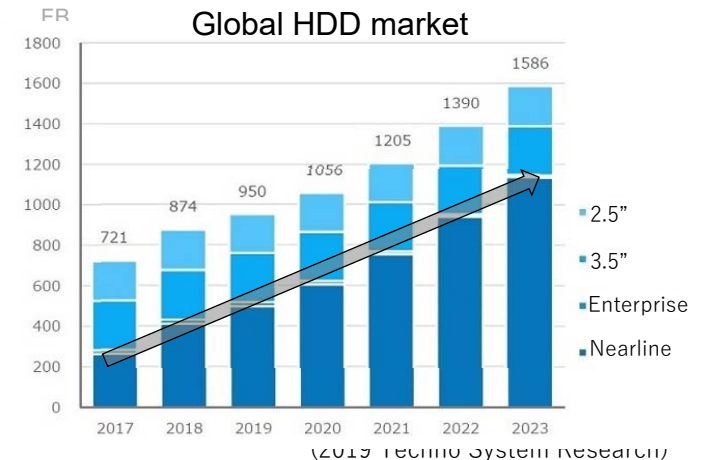
Forecast for 2H 2019

Recovery of our HD media business. Much increase in demand is expected in 2020.

- Recovery of investment in DCs will increase the demand for HD media in 2H, 2019
- HDD manufacturers will mainly use 14TB media in 3Q, 2019, but will shift to 16TB media in 4Q

Tasks and strategies for 2019

- Provide advanced HD media for NL storages
- Enhance cost competitiveness, performance and quality by maximizing ratio of in-house made aluminum substrate
- Start supply of next-generation MAMR media
- Start mass production for new customers



3. Topics and tasks for main businesses

SiC epitaxial wafers for power devices



Situation in 1H 2019

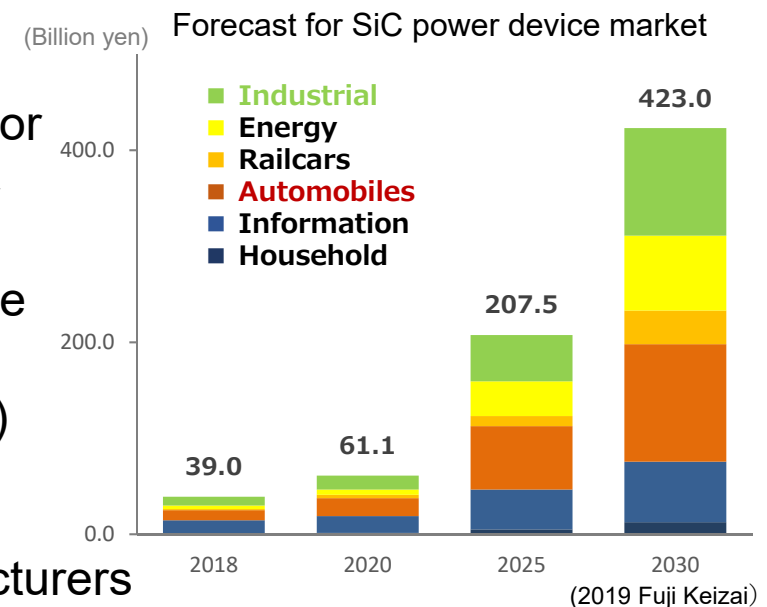
- Shift to wafers with large diameters has been accelerated
- Markets for use in railcars and EV chargers expanded. SDK's shipment volumes increased 30% from last year. But shipment volumes for use in solar power systems decreased due to reduced subsidies in China

Forecast for 2H 2019

- Complete installation of a new epitaxial reactor
- Market second generation of high-grade SiC epitaxial wafers
- Continue investment in equipment to produce decisively high-grade epitaxial wafers. Increase global market share (to about 30%)

Tasks and strategies for 2019

- Receive orders steadily from railcar manufacturers
- Strengthen global marketing (Serious marketing in Europe. Establish sales network for wafers to be used in 6-inch fabs in Asia)
- Support spread of SiC-based power devices through provision of “Best-in-Class” epitaxial wafers



3. Topics and tasks for main businesses

Ceramics



Situation in 1H 2019

- Finished restructuring (withdrawal from general-purpose alumina) and strengthened earning power
- Increased capacity to produce TiO_2 for MLCCs. Sales of TiO_2 were stagnant due to production adjustment in IT and semiconductor industries
- Filler for heat radiation was adopted as cooling material for on-board LIBs

Titanium oxide for MLCCs



Forecast for 2H 2019

- Demand for MLCCs will increase due to electrification of cars and progress in home appliances' IoT
- Consider expansion of capacity to produce titanium oxide for MLCCs. Demand for MLCCs for use in smartphones will recover in 4Q or later
- Sales of filler for heat radiation of LIBs will increase due to higher sales of EVs
- Sales of fine-grain abrasives will increase due to increased use in polishing of glass for high-definition display panels

Tasks and strategies for 2019

- Consider expansion of capacity to produce filler for heat radiation, following further electrification of cars
- Increase TiO_2 production capacity for MLCCs to be used in 5G smartphones
- Strengthen marketing function and ability to suggest solutions
- Promote development of new abrasives

3. Topics and tasks for main businesses

Aluminum



Situation in 1H 2019

- Aluminum cans: Took measures to improve domestic profitability
Decided to establish third factory in Vietnam (Ba Ria-Vung Tau)
- Rolled products: Domestic production of capacitors declined due to production adjustment of FA equipment.
Increased production capacity of Nantong factory in China by improving process. (800t/month⇒1,000t/month)
- Aluminum specialty components: Sales volumes down due to stagnant production of cars in China & Europe and that of semiconductor chips and FA equipment



Forecast for 2H 2019

- Aluminum cans: Streamline production capacity to improve domestic profitability
Construction of third factory in Vietnam (to be completed by July 2020)
- Rolled products: Recovery in sales for FA equipment will be in 4Q or later
- Aluminum specialty components: Stagnant car production. Start to produce radiator for on-board inverters for EVs

Tasks and strategies for 2019

- Aluminum cans: Promote measures to improve domestic profitability, and strengthen business extension to overseas
Streamline production capacity: Oyama & Hikone
Introduce formula to link sales prices with metal price→will be achieved in 2020
- Rolled products: Gain top share in high-capacity type. Integrated production in China
- Aluminum specialty components: Strengthen suggestion about lightweight components for automobiles (suspensions, etc.)

3. Topics and tasks for main businesses

Petrochemicals



Situation in 1H 2019

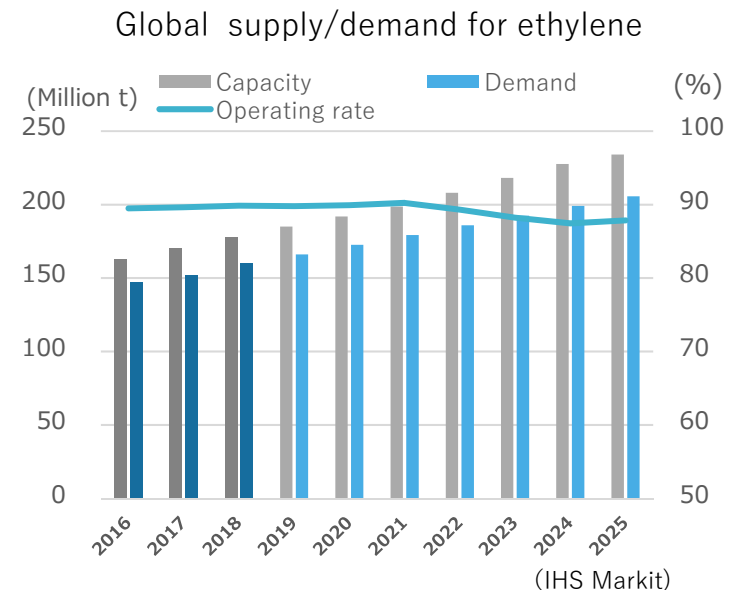
- Though Chinese economy is stagnant, total demand in Asia remains steady
Domestic demand remains strong, and high operating rate continues
- SDK's cracker continues full-capacity operation due to strong demand for derivatives
- Improved performance of catalysts enabled us to achieve continuous operation of vinyl acetate and ethyl acetate plants for two years

Forecast for 2H 2019

- Though prices of ethylene and propylene will be weakening, demand in China will remain steady
- Demand for butadiene will be stagnant due to weakening sales of cars in China
- High operating rate will continue in 2H 2019

Tasks and strategies for 2019

- Increase profit through procurement of materials with low prices
- Improve competitiveness of ethylene plant. Continue full-capacity operation and complete-sales
- Expand lineup of derivatives

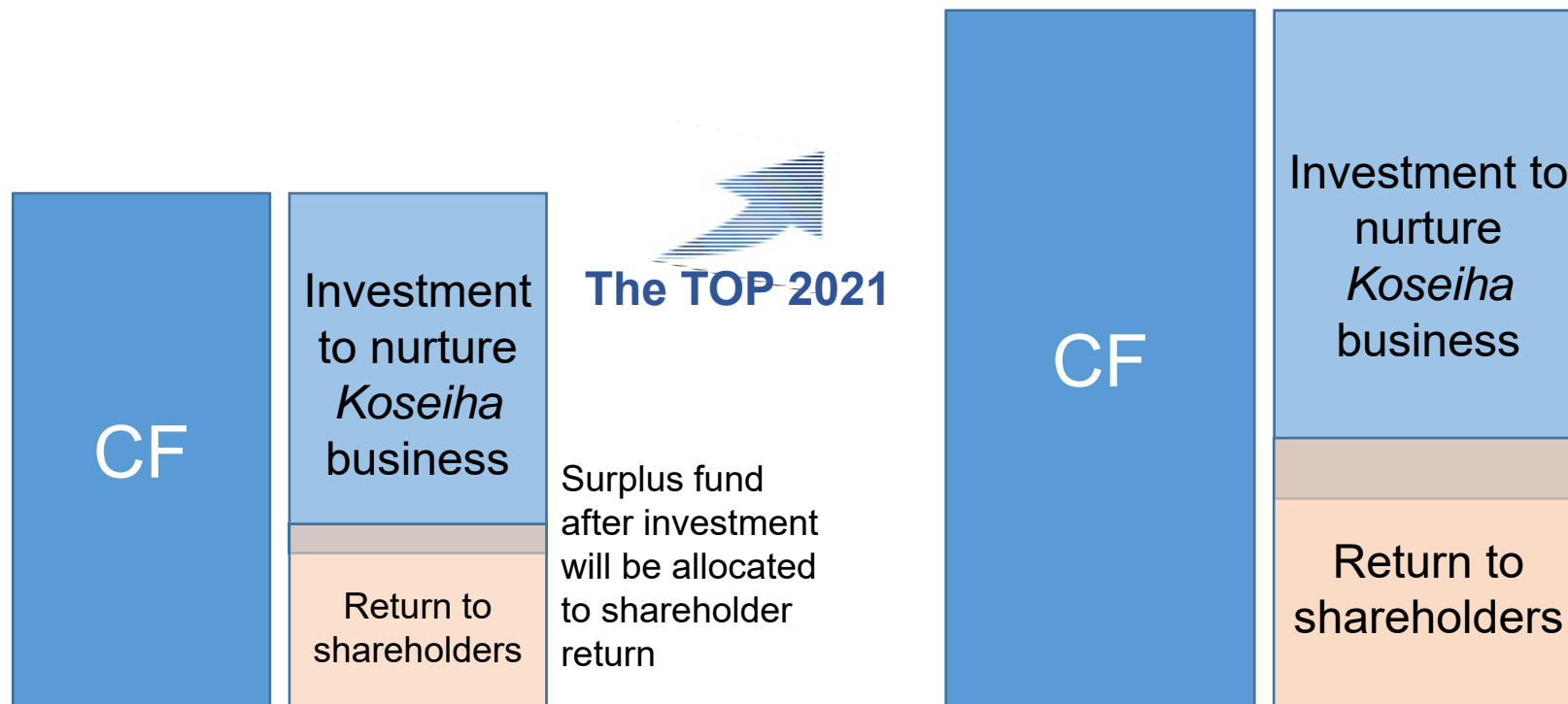


4. Uses for funds and enriching return to shareholders

Uses for cash flows in “The TOP 2021”



- Enrich return to shareholders
- Realize growth: Positively invest earned cash in order to enhance corporate value



4. Uses for funds and enriching return to shareholders

Enriching return to shareholders



◆ Policy on return to shareholders

We aim to achieve total return ratio of 30% in 2021

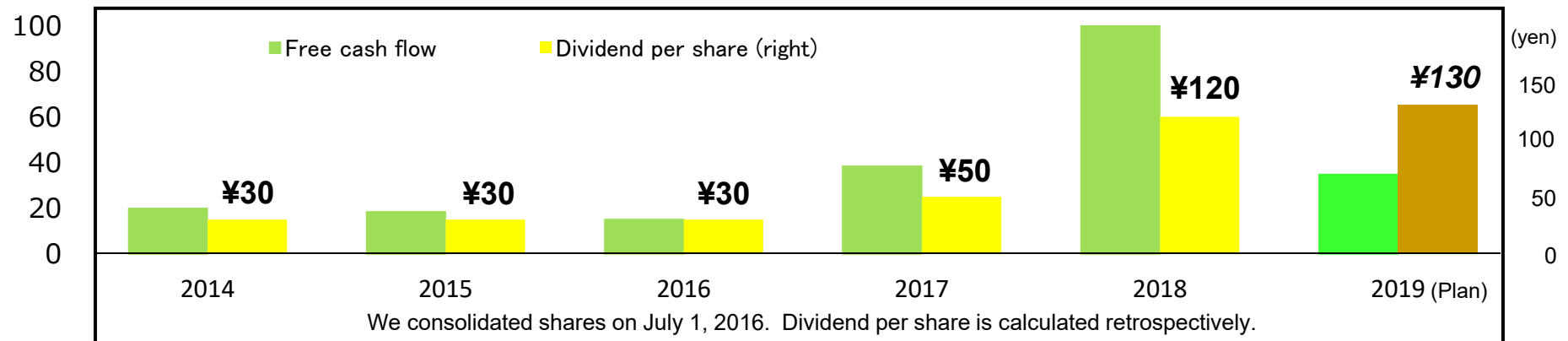
- Dividend: Maintain/improve the level of return during the period of “The TOP 2021”
- Repurchasing of own stock: Consider timely repurchasing taking trends in profit and cash flows into account
- Promote retirement of treasury stock
- Surplus fund after investment and M&A will be allocated to shareholder return

◆ Forecast for 2019

- Dividend per share ¥130: 1H ¥50, 2H ¥80
- Achieve total return ratio surpassing that of 2018

【Dividend per share and free cash flow】

(Billions of yen)



4. Uses for funds and enriching return to shareholders

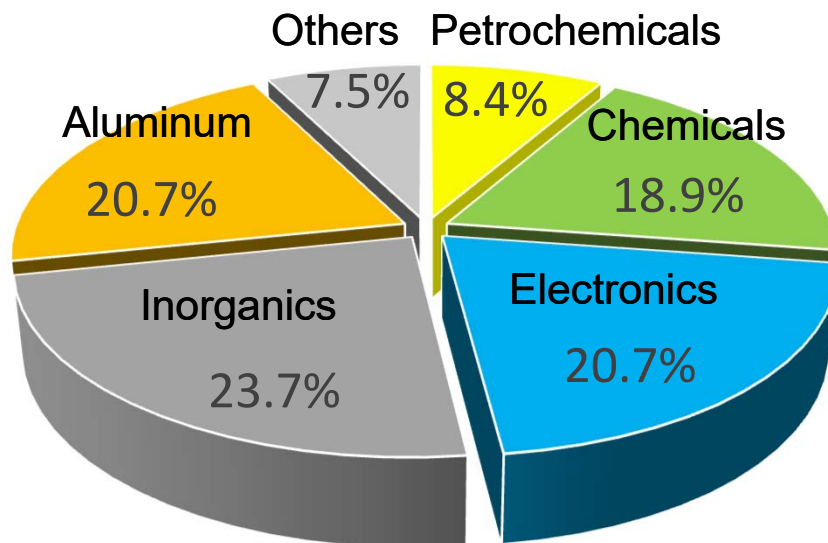
Investment for growth (Capital investment, M&A)



◆ Investment policy

Along business road map of The TOP 2021, we will invest to realize target growth
Investment criteria (strategic investment): DCF method (utilizing hurdle rate taking WACC into consideration)

Investment by segment (fixed assets)



◆ Actual investment in 1H 2019

1) Major investments

- Improve European bases for GEs
- Third base for aluminum cans in Vietnam
- Introduction of SAP S/4HANA as new ERP system

2) M&A

- ILAG Group (non-stick coatings)

◆ Plan for 2H 2019

- Increase capacity to produce LIB materials for on-board use in European cars
- Increase capacity to produce high-purity gases for electronics
- Increase capacity to produce SiC epitaxial wafers

5. R&D toward next generation

Promote R&D to create new businesses/products targeting on next-generation technologies



Target markets



CASE



Next-generation 5G communication



SiC epi-wafer for power devices
Development of HGE-2G



We are providing Toyota Motors with
BMC for HVs for Chinese market



Established a technology to joint
aluminum and resins directly,
which realizes hybrid parts

Our business & technologies

Businesses/
technologies
+
Product design
+
Basic research

Organics



Aluminum



Inorganics

Technologies to design products

Computational science & Physical property analysis

6. Contribution to SDGs - 1



We at the Showa Denko Group will aim to make ourselves a social contribution company that satisfies all stakeholders by contributing to solving issues concerning SDGs through its business activities, and ensuring all employees' conduct conforming to "Our Code of Conduct."

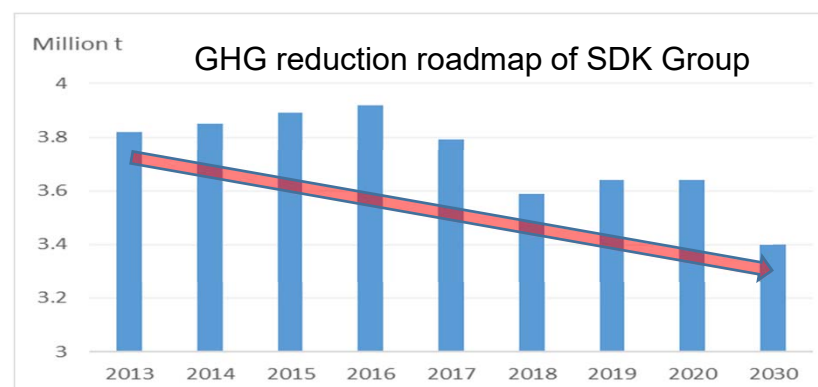
◆ We revised our CSR policy

We categorized 14 material issues under three "core tasks"

Core tasks	Materiality
Contribution to achievement of SDGs through business activities	Provision of products, technologies and services
	Participation in community activities
	Access to essential services
	Consumer safety and health protection
Tackling environmental issues	Prevention of pollution
	Sustainable use of resources
	Countermeasures against climate change
Establishment of sustainable methods for human resource development and improvement in working environment	Human resource development/training
	Improvement in working conditions/environment
	Equipment safety
	Occupational health and safety
	Thorough corporate ethics
	Protection of intellectual property
	Decision-making process/structure

◆ We set medium-term target to reduce our GHG emission

- Reduce GHG emission 11% from that in 2013 (base year)
- Adopted GHG Protocol (global standard) as method to calculate emission amount
- Utilize internal carbon pricing as criteria for decision on investment



◆ We take part in TCFD consortium

We will disclose the effect of climate change on our business in a positive manner, following guidelines which is to be offered by TCFD in the near future.

6. Contribution to SDGs - 2



◆ Chemical recycling of plastics Chemical recycling of used plastics



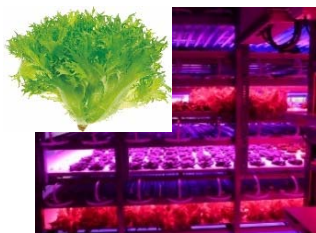
We extract hydrogen and CO₂ from used plastics, and make them into ammonia and dry ice. We also provide hydrogen station with hydrogen extracted from used plastics.

◆ Graphite electrodes Electrodes to melt steel scraps in electric furnaces



Graphite electrodes melt steel scraps in electric furnaces in order to recycle them. Electric-furnace method emits less CO₂ and consumes less energy than blast furnace-method, thereby contributing to energy & resource conservation and GHG reduction.

◆ Plant factory Contributes to safety and security of foods



We realize best environment to achieve rapid growth of vegetables with SHIGYO™ Method (our proprietary lighting method to accelerate plant growth and maximize productivity), our aluminum racks and panels for plant-growth units.

Note

Performance forecast and other statements pertaining to the future as contained in this presentation are based on the information available as of today and assumptions as of today regarding risk factors that could affect our future performance. Actual results may differ materially from the forecast due to a variety of risk factors, including, but not limited to, the economic conditions, costs of naphtha and other raw materials, demand for our products such as graphite electrodes and other commodities, market conditions, and foreign exchange rates. We undertake no obligation to update the forward-looking statements unless required by law.