SHOWA DENKO K.K.

4/25/2017

2016 Consolidated Financial Results (Summary)

Ⅰ. Results for 2016

1. Summary

(Unit: billions of yen, except for stockholders' equity/share, net income/share and cash dividends/share)

Items	2015 Jan.1 - Dec.31	2016 Jan.1 - Dec.31	Increase
Net Sales	775.7	671.2	-104.6
Operating Income	33.5	42.1	8.5
Profit attributable to owners of parent	0.9	12.3	11.4
Profit attributable to owners of parent per share	¥6.45	¥86.27	¥79.82
Stockholders' equity per share	¥2,076.05	¥2,080.85	¥4.80
Cash dividends per share ＊	¥3.00	-	-

SDK consolidated every ten shares of its common stock into one share on July 1, 2016. The above-mentioned “Profit(s) attributable to owners of parent per share” and “Stockholders' equity per share” for 2015 and 2016 are calculated on the basis of the number of outstanding shares after this consolidation. The above-mentioned “Cash dividends per share” for 2015 is calculated on the basis of the number of outstanding shares before this consolidation, while that for 2016 is calculated on the basis of the number of outstanding shares after this consolidation.
*SDK plans to resolve payment of a dividend of ¥30 per share based on the record date of May 11, 2017 at the extraordinary general meeting of shareholders to be held in June 2017.

2. Net sales and Operating Income by Segment (Year to year comparison)

(Unit: billions of yen)

Segment		2015 Jan.1 - Dec.31	2016 Jan.1 - Dec.31	Increase
Net Sales	Petrochemicals	231.3	185.8	-45.5
	Chemicals	142.3	134.5	-7.8
	Electronics	131.5	103.3	-28.2
	Inorganics	63.5	50.9	-12.6
	Aluminum	100.8	98.6	-2.2
	Others	147.2	142.4	-4.9
	Adjustments	-40.8	-44.3	-3.5
	Total	775.7	671.2	-104.6
Operating Income	Petrochemicals	10.5	20.7	10.1
	Chemicals	10.7	13.8	3.1
	Electronics	17.5	13.9	-3.6
	Inorganics	-1.2	-5.8	-4.5
	Aluminum	2.6	4.4	1.9
	Others	1.3	1.8	0.4
	Adjustments	-7.9	-6.8	1.1
	Total	33.5	42.1	8.5

3. Net sales and Operating Income by Segment (Quarterly transition)

(Unit: billions of yen)

Segment		2016 CQ1 Jan.1 - Mar.31	2016 CQ2 Apr.1 - Jun.30	2016 CQ3 Jul.1 - Sept.30	2016 CQ4 Oct.1 - Dec.31
Net Sales	Petrochemicals	42.9	43.1	44.1	55.6
	Chemicals	32.1	32.8	33.9	35.7
	Electronics	22.3	24.6	27.2	29.2
	Inorganics	12.4	12.5	12.6	13.4
	Aluminum	22.0	25.8	24.7	26.1
	Others	34.8	35.2	33.1	39.3
	Adjustments	-10.5	-11.4	-9.9	-12.6
	Total	156.0	162.7	165.7	186.8
Operating Income	Petrochemicals	1.5	5.9	6.0	7.3
	Chemicals	2.5	2.9	4.3	4.1
	Electronics	1.7	2.4	4.2	5.6
	Inorganics	-2.0	-2.4	-0.7	-0.7
	Aluminum	0.2	1.2	1.3	1.6
	Others	0.5	0.5	0.4	0.3
	Adjustments	-1.7	-1.8	-1.7	-1.6
	Total	2.9	8.7	13.9	16.6

SHOWA DENKO K.K.

4/25/2017

Ⅱ. Forecast for 2017

1. Summary

(Unit: billions of yen, except for net income/share and cash dividends/share)

Items	2016	2017 Forecast	Increase
Net Sales	671.2	745.0	73.8
Operating Income	42.1	54.5	12.4
Profit attributable to owners of parent	12.3	25.0	12.7
Profit attributable to owners of parent per share	¥86.27	¥175.42	¥89.15
Cash dividends per share ＊	-	¥30.00	-

*SDK plans to pay a dividend of ¥30 per share based on the record date of May 11, 2017.

2. Net sales and Operating Income by Segment

(Unit: billions of yen)

Segment		2016	2017 Forecast	Increase
Net Sales	Petrochemicals	185.8	235.0	49.2
	Chemicals	134.5	145.0	10.5
	Electronics	103.3	123.0	19.7
	Inorganics	50.9	57.0	6.1
	Aluminum	98.6	106.0	7.4
	Others	142.4	134.0	-8.4
	Adjustments	-44.3	-55.0	-10.7
	Total	671.2	745.0	73.8
Operating Income	Petrochemicals	20.7	23.5	2.8
	Chemicals	13.8	15.0	1.2
	Electronics	13.9	18.5	4.6
	Inorganics	-5.8	-1.0	4.8
	Aluminum	4.4	6.0	1.6
	Others	1.8	0.5	-1.3
	Adjustments	-6.8	-8.0	-1.2
	Total	42.1	54.5	12.4

(Note) Amount of "Adjustment" includes company-wide costs which are not allocated to each segment.

Ⅲ. Cash Flow

(Unit: billions of yen)

Cash flows from:	2015	2016	Increase	2017 Forecast	Increase
Operating Activities	61.2	68.9	7.8	84.0	15.1
Investing Activities	-42.5	-53.8	-11.3	-54.0	-0.2
Free Cash Flow	18.7	15.2	-3.5	30.0	14.8
Financing Activities	-21.3	-13.2	8.1	-12.5	0.7
Newly Consolidated	-1.1	-0.5	0.5	0.4	0.9
Net increase in Cash	-3.7	1.5	5.2	17.9	16.4

Ⅳ. Reference

(Unit: billions of yen, expect for total number of employees, exchange rate and domestic naphtha price)

Items	2015	2016	Increase	2017 Forecast	Increase
Capital expenditures	44.1	39.3	-4.8	51.9	12.6
Depreciation and amortization	42.1	38.8	-3.4	38.7	-0.1
R & D expenditures	20.3	17.3	-3.0	18.5	1.2
Gap between interest expense and interest/dividend income	-2.2	-1.6	0.6	-1.8	-0.2
Total number of employees	10,561	10,146	-415	10,327	181
Exchange rate (yen/US$)	121.1	108.8	-12.2	1st half 111.8 2nd half 105.0	Yen appriciated by 0.4
Domestic naphtha price (yen/kl)	46,000	32,800	-13,200	1st half 40,300 2nd half 36,900	5,800
Interest-bearing debt	368.8	359.9	-8.9	352.0	-7.9
Total assets	940.5	932.7	-7.8		

Notes : The above forecast is 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, market conditions, and foreign exchange rates. We undertake no obligation to update the forward-looking statements unless required by law.The above forecast does not include the effect of planned integration of graphite electrode businesses of SDK and SGL GE, which we announced in October 2016, because the date of business integration has not been specified yet as of today.

SHOWA DENKO K.K.

Consolidated Financial Statements

For the year ended December 31, 2016

Ⅰ. Consolidated Financial Results

Apr 25th, 2017

(1) Results of operations:

(¥ in millions, US$ in thousands, except for profit attributable to owners of parent per share)

	Results for the year ended December 31			
	2015	2016	Increase (Decrease)	2016
	¥	¥	%	$
Net sales	775,732	671,159	(13.5)	5,761,512
Operating income	33,508	42,053	25.5	361,005
Ordinary income	32,050	38,690	20.7	332,132
Profit attributable to owners of parent	921	12,305	1,236.1	105,629
Profit attributable to owners of parent per share: Basic	6.45	86.27	—	0.74
Profit attributable to owners of parent per share: Diluted	—	—	—	—
	%	%		
Net income on equity	0.3	4.1		
Ordinary income on total assets	3.3	4.1		
Operating income to net sales	4.3	6.3		

SDK consolidated every ten shares of its common stock into one share on July 1, 2016. The above-mentioned “Profit(s) attributable to owners of parent per share: Basic/Diluted” are calculated on the assumption that the share consolidation had been carried out at the beginning of 2015

Notes

Important changes in accounting policies : applicable

Comprehensive income:

Results for the year ended December 31,2016 (¥6,160) million

Results for the year ended December 31,2015 (¥10,945) million

(2) Financial position: (¥ in millions, US$ in thousands, except for net income per share)

	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2016
	¥	¥	$
Total assets	940,494	932,698	8,006,676
Total equity	308,142	311,231	2,671,739
Total equity per share	2,076.05	2,080.85	17.86
	%	%	%
Stockholders' equity ratio	31.5	31.8	31.8

(3) Cash flows: (¥ in millions, US$ in thousands)

	Results for the year ended December 31		
	2015	2016	2016
	¥	¥	$
Cash flows from operating activities	61,170	68,949	591,888
Cash flows from investing activities	(42,497)	(53,754)	(461,447)
Cash flows from financing activities	(21,336)	(13,220)	(113,486)
Cash and cash equivalents at end of the year	54,597	56,186	482,325

(4) Dividends:

	2015	2016	2017 forecast
Q1 dividends per share (¥)	—	—	—
Q2 dividends per share (¥)	0.0	0.0	0.0
Q3 dividends per share (¥)	—	—	—
End of Term dividends per share (¥)	3.0	0.0	30.0
Annual dividends per share (¥)	3.0	0.0	30.0
Total dividends (¥ in millions)	4,285	0	—
	%	%	%
Payout ratio (consolidated)	468.8	0.0	—
Net assets dividend yield (consolidated)	1.4	0.0	—

SDK consolidated every ten shares of its common stock into one share on July 1, 2016. The above forecast is calculated on the basis of the number of outstanding shares after this consolidation. Therefore, the nominal dividends per share after the consolidation are ten times larger than those before the consolidation. However, this does not mean there is real change in the forecast for dividends per share.

As announced on April 25, 2017, the Company is planning to resolve payment of dividends of ¥30 per share based on the record date of May 11, 2017 at the extraordinary general meeting of shareholders to be held on June 27, 2017.

Ⅱ. Forecast of performance for the year ending December 31, 2017

(¥ in millions, US$ in thousands, except for net income per share)

	1st half		fiscal year	
	¥	$	¥	$
Net sales	373,000	3,201,992	745,000	6,395,399
Operating income	29,000	248,948	54,500	467,851
Ordinary income	24,500	210,318	47,500	407,760
Net income	16,000	137,351	25,000	214,611
Net income per share	112.27	0.96	175.42	1.51

※The above forecast is based on the information available at this point of time. Actual results may differ materially due to a variety of reasons, including such economic factors as fluctuations in foreign currency exchange rates as well as market supply and demand conditions.

Notes

The U.S. dollar is valued at ¥116.49 throughout this statement for convenience only.

[Business Results and Financial Conditions]

1. Analysis of business results

(1) Summary

In 2016, the Japanese economy continued to recover gradually. As for the dollar-yen exchange rates, the appreciation of the yen progressed quite a while. However, relatively weak yen against the dollar returned after the presidential election of the U.S. Export and production by corporations showed signs of recovery. Corporate earnings maintained a high level, though the speed of improvement was not fast. There was an improvement in the employment situation, and consumer spending showed a sign of recovery. As for overseas economies, the U.S. economy continued to recover. As for the European economy, despite some risk factors including terrorist incidents and the United Kingdom's decision to secede from the European Union, there was gradual economic recovery in Germany and the United Kingdom. Though the economies of China and ASEAN countries showed signs of recovery, those of South Korea and Indonesia showed signs of slowdown during the second half of the year. There was business slowdown in resource producing countries and emerging countries including Russia and Brazil.

In the petrochemical industry, crude oil prices, which would affect the demand for and prices of products in the market, remained low. Operating rates at domestic petrochemical plants maintained high levels due to strong demand for petrochemical products in Asia. In the electronic parts/materials industry, production of PCs remained sluggish during the first half of the year. However, that sluggishness eased in the second half of the year. Production of semiconductors increased especially in the second half of the year due to increasing demand for memory chips for smartphones and other electronic devices.

Under these circumstances, the Showa Denko Group started its new medium-term consolidated business plan "Project 2020+" in January 2016. Under this new business plan, in order to achieve continuous growth of the Showa Denko Group, we will expand and strengthen our "individualized businesses," reform our business structure, and strengthen our revenue base, thereby enhancing our corporate value.

The Group recorded consolidated net sales of ¥671,159 million in 2016, down 13.5% from the previous year. Sales decreased in all segments including the Petrochemicals segment where sales decreased due to a fall in prices of products resulting from a decline in raw naphtha price. Operating income of the Group increased 25.5%, to ¥42,053 million. The Electronics segment recorded lower income due to lower shipment volumes of HD media. The Inorganics segment also recorded lower income. However, the Petrochemicals segment recorded considerably higher income due to strong demand in Asia. The Chemicals, Aluminum, and Others segments also recorded higher income. The Group recorded ordinary income of ¥38,690 million, up 20.7%, due partly to the incurrence of foreign exchange losses caused by the yen's appreciation. The Group posted profit attributable to owners of parent of ¥12,305 million in 2016, up 1,236.1% from the previous year due to a significant decrease in extraordinary loss and income taxes.

(Unit: millions of yen)

	2015 Jan.-Dec.	2016 Jan.-Dec.	Increase/decrease
Sales	775,732	671,159	-104,573
Operating income	33,508	42,053	8,545
Ordinary income	32,050	38,690	6,640
Profit attributable to owners of parent	921	12,305	11,384

(2) A breakdown of net sales and operating income by segment (January 1 - December 31, 2016)

[Petrochemicals segment]
In the Petrochemicals segment, sales decreased 19.7%, to ¥185,783 million. Production of ethylene and propylene slightly decreased from the previous year due to coinciding periodic shutdown maintenance of plants to produce derivatives in Oita Complex. Sales of olefins decreased due to a decline in prices of products caused by a drop in raw naphtha price, despite strong demand for olefins in the Asian market. Sales of organic chemicals also decreased due to a fall in sales prices of vinyl acetate and ethyl acetate resulting from a decline in prices of raw materials. Operating income of the segment significantly increased to ¥20,690 million, up 96.2% due to a decline in prices of raw materials and continued high operating rates in olefins and organic chemicals businesses in response to strong demand in the Asian market.

(Unit: millions of yen)

	2015 Jan.-Dec.	2016 Jan.-Dec.	Increase/decrease
Sales	231,288	185,783	-45,505
Operating income	10,543	20,690	10,147

[Chemicals segment]
In the Chemicals segment, sales decreased 5.5%, to ¥134,529 million. Production of liquefied ammonia and high-purity gases for electronics increased from the previous year. Sales of electronic chemicals slightly increased due to continued high-level shipment volumes despite the impact of a strong yen. Sales of industrial gases slightly increased. On the other hand, sales of basic chemicals decreased due partly to a decline in sales prices of some products including acrylonitrile following a fall in raw material prices, despite continuously high shipment volumes of products. Sales of functional chemicals decreased due to the transfer of our phenolic resin business to another company which took place in the second half of the previous year. Operating income from basic chemicals business increased due to reduction in costs of materials resulting partly from an increase in the ratio of recycled plastics among raw materials to produce ammonia. Operating income from industrial gases and functional chemicals businesses also increased, while that from electronic chemicals business decreased due to a strong yen. Overall, operating income of the segment rose 29.1%, to ¥13,824 million.

(Unit: millions of yen)

	2015 Jan.-Dec.	2016 Jan.-Dec.	Increase/decrease
Sales	142,292	134,529	-7,763
Operating income	10,707	13,824	3,118

[Electronics segment]
In the Electronics segment, sales decreased 21.4%, to ¥103,339 million. Production of HD media in 2016 decreased from the previous year due to a decrease in shipment volumes of media for use in PCs, which could not be compensated by the increase in shipment volumes of media for use in servers. However, shipment volumes of HD media for use in PCs in the second half of the year recovered from the level of the first half of the year, and that in the fourth quarter of 2016 was higher than that in the same period of the previous year. Under this market environment, sales of HD media decreased due to the decrease in shipment volumes mentioned above and the impact of a strong yen. Sales of rare earth magnetic alloys and compound semiconductors also decreased. Operating

income of the segment decreased 20.4%, to ¥13,907 million due to the decrease in shipment volumes of HD media especially in the first half of the year, which could not be compensated by the increase in shipment volumes in the second half of the year. Nevertheless, operating income from HD media business in the second half of 2016 increased from that in the same period of the previous year due to the realization of effects of our efforts during the first half of 2016 to streamline production capacity and reinforce cost competitiveness of HD media business.

(Unit: millions of yen)

	2015 Jan.-Dec.	2016 Jan.-Dec.	Increase/decrease
Sales	131,492	103,339	-28,153
Operating income	17,472	13,907	-3,565

[Inorganics segment]
In the Inorganics segment, sales decreased 19.9%, to ¥50,870 million. Production volume of graphite electrodes slightly increased from the previous year. However, sales of graphite electrodes decreased due to a decline in market prices resulting from the adjustment of production in the steel industry of Asia and the U.S. under the influence of overproduction in China. Sales of ceramics decreased due to a decline in shipment volumes. The segment recorded an operating loss of ¥5,758 million, a deterioration of ¥4,510 million. However, aiming to revitalize profitability of its graphite electrode business, the Showa Denko Group took measures to improve cost competitiveness of this business at its production bases in Japan and the U.S.

(Unit: millions of yen)

	2015 Jan.-Dec.	2016 Jan.-Dec.	Increase/decrease
Sales	63,476	50,870	-12,607
Operating income	-1,249	-5,758	-4,510

[Aluminum segment]
In the Aluminum segment, sales decreased 2.2%, to ¥98,575 million. Production of high-purity foil for aluminum electrolytic capacitors increased from the previous year due to an increase in production of air conditioners and electronic parts for automobiles. Sales of rolled products increased due partly to the increase in shipment volumes of high-purity foil for aluminum electrolytic capacitors in China recorded by Showa Denko Aluminum (Nantong) Co., Ltd., in addition to the abovementioned sales increase in the domestic market. Sales of aluminum specialty components decreased due to a fall in aluminum metal prices and lower shipment volumes for some automotive applications. Sales of aluminum cans increased due to higher shipment volumes recorded by Hanacans Joint Stock Company of Vietnam. Operating income of the segment increased 72.3%, to ¥4,416 million due to an increase in shipment volumes of rolled products and higher shipment volumes of aluminum cans recorded by Hanacans.

(Unit: millions of yen)

	2015 Jan.-Dec.	2016 Jan.-Dec.	Increase/decrease
Sales	100,756	98,575	-2,181
Operating income	2,563	4,416	1,854

[Others segment]
In the Others segment, sales decreased 3.3%, to ¥142,364 million. Sales of lithium ion

battery (LIB) materials slightly increased due to an increase in shipment volumes for automotive applications, in addition to higher shipment volumes for use in smartphones. However, Shoko Co., Ltd.'s sales decreased. Operating income of the segment increased 33.6%, to ¥1,775 million due partly to higher shipment volumes of LIB materials.

(Unit: millions of yen)

	2015 Jan.-Dec.	2016 Jan.-Dec.	Increase/decrease
Sales	147,233	142,364	-4,870
Operating income	1,329	1,775	446

(3) Major steps taken or decided in 2016

[General]

- Consolidation of shares and change in the number of shares per share unit

SDK resolved at its 107th ordinary general meeting of shareholders held on March 30, 2016 that it would consolidate its shares and change number of shares per trading unit (share unit). On July 1, 2016, based on this resolution, SDK changed number of shares per share unit from 1,000 shares to 100 shares. Along with the change in the share unit, SDK also consolidated its shares (ten shares into one share).

- Introduction of performance-linked stock compensation scheme

SDK resolved at its 107th ordinary general meeting of shareholders held on March 30, 2016 that it would revise its compensation scheme for Directors and Corporate Officers, and introduce a performance-linked stock compensation scheme utilizing a trust service ("the Scheme"). The Scheme became effective in May 2016. The purpose of the introduction of the Scheme is to further clarify the linkage between compensation for non-Outside Directors and Corporate Officers and the share value of SDK, thereby enhancing their awareness of the need to contribute to the efforts to achieve improved business performance and greater enterprise value in the medium to long term.

- Acquisition of highest-level environmental rating from Development Bank of Japan

In March 2016, SDK received a loan from Development Bank of Japan (DBJ) under the scheme of DBJ Environmentally Rated Loan Program, after acquiring the highest-level rating from DBJ for its environmental management. This Program is a loan program utilizing a rating system developed by DBJ that evaluates enterprises on the level of their environmental management and then sets preferential loan conditions when an enterprise is rated high. This time, SDK has acquired the highest-level environmental rating from DBJ because of its identification of important issues related to its own medium to long term management themes, continuous activities to improve its CSR-conscious procurement, its introduction of an integrated comprehensive chemicals management system, and promotion of Diversity Management, which is a management policy to enhance the value of diversity among its employees.

[Petrochemicals segment]

- Acquisition of additional shares in polypropylene JV SunAllomer

In September 2016, SDK and JX Nippon Oil & Energy Corporation (JX) jointly purchased LyondellBasell Group's 50% stake in SunAllomer Ltd., which had been a joint venture company among the three parties for production and sale of polypropylene. The polypropylene business constitutes a key element in SDK's olefin chain. Taking this opportunity of acquiring additional shares, SDK will further strengthen cooperation with SunAllomer, thereby enhancing the competitive power of its polypropylene business.

[Chemicals segment]

- Decision to establish a Monofluoromethane gas JV in South Korea

In December 2016, SDK and SK Materials Co., Ltd., which is headquartered in Yeongjyu-si, South Korea, has concluded an agreement to establish a joint corporation which is to produce and sell High-purity Monofluoromethane gas (CH_3F) to be used in the manufacturing process of semiconductor chips. The two parties plan to establish the new company in February 2017, and finish construction of the new plant in August 2017. CH_3F is a specialty gas used in the manufacturing process of semiconductor chips for micromachining nitride film by etching. Since CH_3F's etching selectivity is higher than those of other industrial gases, the demand for CH_3F is increasing especially in the field of micromachining of multi-layer structure of 3D NAND flash. SDK will continue expanding its business to produce and sell high-purity gases for production of semiconductor memory chips.

- Increasing capacity to produce high-purity boron trichloride

In March 2016, SDK increased the capacity of the facilities in its Kawasaki Plant to produce high-purity boron trichloride (BCl_3), which is a kind of high-purity gas for electronics, to 1.5 times of the previous level and started operation of the expanded facilities. High-purity BCl_3 is a specialty gas mainly used for fine-etching of aluminum circuits in the manufacturing process of LCD panels and silicon semiconductors. In recent years, electronic material manufacturers have been making capital investment in the fields of organic light emitting diode (OLED) display panels and low temperature poly-silicon (LTPS) LCD panels, both of which are equipped with aluminum circuits. Therefore, the demand for high-purity BCl_3 gas is expected to be stable in the future.

- Installation of a plant to produce a new grade of super-high-purity solvent, "*Solfine*™"

In December 2016, SDK developed new-grade products with enhanced high-purity to be added to the lineup of its high-purity solvents, "*Solfine*™" series, and decided to install a new production plant to produce the new-grade products at its Tokuyama Plant. The new plant will start its commercial operation in June 2017. SDK will offer the new-grade super-high-purity solvents mainly as solvents for photoresist for the manufacture of semiconductor integrated circuits.

- Starting commercial operation of a new bulk molding compound plant in China

SDK finished the work to construct a new plant of Showa Denko New Material (Zhuhai) Co., Ltd. to produce thermosetting bulk molding compound* (BMC), which is located in Guangdong Province, China, and started commercial production of BMC there in January 2017. Before this construction, SDK Group's BMC business had production bases at three locations: in Japan, Shanghai, and Thailand, and the production base in Shanghai has been operating at full capacity. By producing BMC at two production bases in China, located in Shanghai and Zhuhai, SDK Group will strengthen and expand its BMC supply system in the Chinese market.

*BMC (Bulk Molding Compound): BMC is a thermosetting bulk molding compound made from unsaturated polyester resin as main component, kneaded together with glass fiber and other additives. BMC is put to various uses including headlamp reflectors and engine covers for car applications, and sealant for home appliances and precision parts.

- Developing normal-temperature-curing non-styrene vinylester resin aqueous emulsion

SDK developed vinylester resin aqueous emulsion that does not use styrene as reactive monomer, and cures after drying of water at normal temperature. SDK started shipment of its samples in October 2016. Making the most of SDK's original resin-design and emulsification technologies, this new resin has high corrosion resistance and curability at normal temperature equivalent to conventional vinylester resins. Moreover, when applied to a repair work of underground cesspits, this new resin does not require measures to prevent fire and poisoning and is good for the safety of workers because it does not contain styrene. Making the most of this new product, SDK proposes a method of lining with superior work environment, less odor, and easy handling of resins.

- Ammonia production process utilizing used plastic containers received Silver Prize in the Eco-Mark Awards 2015

In January 2016, SDK's ammonia production process that recycles plastic containers received a "Silver Prize in the Eco-Mark Awards 2015" hosted by Japan Environment Association (JEA). The award-winning ammonia production process utilizes hydrogen gas extracted from gasified used plastics through chemical recycling method as a part of raw materials, and synthesizes ammonia. SDK will continue developing environment friendly products and production processes, thereby contributing to the sustainability of society.

[Electronics segment]

- Streamlining of HD media production capacity

In its HD media business, SDK Group completed integration of processes to develop and produce substrates and media for HDDs, as a part of its effort to promote "Best in Class Strategy." In the second quarter of 2016, the Group also streamlined its capacity to produce HD media in order to make it in line with the movement in the HDD manufacturing industry to reduce its production capacity. Specifically, the Group concentrated production of HD media into production lines of high productivity, reduced its monthly production capacity from 30 million plateaus to 20 million plateaus, and significantly strengthened the Group's cost competitiveness. Through promotion of development and mass production of leading-edge HD media, SDK Group will secure its technical advantages in the HD media market, and make the foundation of its HD media business more solid.

[Inorganics segment]

- Agreement on acquisition of SGL GE, a graphite electrode manufacturer

In October 2016, SDK agreed with SGL Carbon SE, a global carbon and graphite product manufacturer headquartered in Germany, that SDK will acquire the whole shares of SGL GE Holding GmbH (SGL GE), which engages in the graphite electrode business, from SGL Carbon GmbH, a wholly owned subsidiary of SGL Carbon SE, and make SGL GE a subsidiary of SDK. Graphite electrodes are used in the processes to manufacture electric furnace steel, and is expected to maintain a certain market size. SDK has been supplying graphite electrodes primarily from production bases in two regions, Asia and the U.S. With the acquisition of SGL GE, SDK can cover all areas around the world, including Europe, and gain the position of the global leading supplier of graphite electrodes. Based on the new platform, SDK will revitalize its graphite electrode business as the Company's major profit source and pursue further expansion of it. SDK's acquisition of the shares of SGL GE is subject to the approval of the relevant authorities under the applicable competition laws of the relevant countries including the U.S. and Germany, and other preconditions.

[Aluminum segment]

- Expanding aluminum can business at home and abroad

Showa Aluminum Can Corporation (SAC), a subsidiary of SDK, has been operating aluminum can manufacturing business in the domestic market, where stable demand is expected, and in the Vietnamese market, which has been growing about 10% a year. In the Vietnamese market, through operation of its wholly-owned subsidiary "Hanacans Joint Stock Company," SAC has been expanding sales of cans for beer, the demand for which has been rapidly increasing. Aiming to further accelerate its aluminum can business in Vietnam, in December 2016, SAC made Hanacans to install a new production line to produce sleek cans for beverages, which have smaller diameters and taller heights than those of regular cans. For the domestic market, SAC has developed an ink-jet printing technology for beverage cans suitable for production of cans with multiple designs in smaller lots, and installed a new production line equipped with this new printing method in December 2016. SDK Group will further expand its aluminum can business by rapidly introducing new products that meet to the needs of the market.

- Integrating two aluminum automotive parts production bases in Southeast Asia

In November 2016, SDK decided to integrate the aluminum forging plant of SHOTIC Singapore Pte. Ltd. (STS), located in Singapore, into the aluminum casting plant of SHOTIC Malaysia Sdn. Bhd. (STM), located in Johor, Malaysia, aiming to strengthen competitiveness of its *SHOTIC*™ business. Thus STM will start to produce forged aluminum products in the first half of 2017, thereby establishing an integrated system to produce both casted and forged products of aluminum. Through our *SHOTIC*™ business, SDK Group offers *SHOTIC*™ continuously-cast aluminum rods manufactured with the Group's proprietary continuous-casting technology which gives *SHOTIC*™ products the properties of high-temperature strength, wear and corrosion resistance. SDK Group also offers forged aluminum products made from *SHOTIC*™ continuously-cast aluminum rods. The Group promotes these continuously-cast aluminum rods and forged aluminum products under the unified trade name of *SHOTIC*™, and offers various products including parts for compressors for cars, pistons for engines, and parts for suspensions.

[Others segment]

- Expanding production capacities for lithium ion battery (LIB) materials

SDK offers various LIB materials including *SCMG*™ carbon-based anode material, *VGCF*™ carbon nanofiber, which is used as an additive for cathodes and anodes to improve electrical conductivity, and *SPALF*™ aluminum laminated film for packaging. SDK's LIB materials are acclaimed highly by LIB manufacturers because our products add their LIBs such values as "high capacity, low resistance, and long life." Orders for *SCMG*™ have been increasing because it has advantages of low resistance and long life, and demonstrates high performance when used in LIBs for EVs. SDK has completed expansion of production capacity for *SCMG*™ at Omachi Plant by 50%, to 1,500t per year. SDK also started to outsource a part of its *SCMG*™ production to a manufacturer in China in June 2016. On the other hand, in August 2016, SDK decided to expand the capacity of facilities in Kawasaki Plant to produce *VGCF*™ conductivity enhancer from 200t/y to 300t/y by the end of 2017. *VGCF*™ is used as electrically-conductive additive for cathodes and anodes of LIBs, and retards deterioration of LIBs. SDK will continue offering high quality LIB materials in a timely manner, focusing on the market for LIB materials for automotive use, which is surely expected to expand.

*In January 2017, SDK reorganized its Advanced Battery Materials Department, which was the section responsible for its LIB materials business, and created "Advanced Battery Materials Division." At the same time, SDK changed the segment to which that business belongs to from "the Others segment" to "the Electronics segment."

- Expansion of capacity for producing high-grade SiC epitaxial wafers

SDK expanded its capacity for producing high-quality-grade silicon carbide (SiC) epitaxial wafers for power devices, which had already been marketed under the trade name of

"High-Grade Epi" (HGE), and started mass production of HGE wafers in June 2016. The expanded production facility has a capacity to produce 3,000 wafers per month*1. In HGE developed by SDK, the number of surface defects and basal plane dislocation*2, which is the typical crystal defect, is controlled to be 0.1/cm^2 or less. Since the launch in October 2015, HGE has been successfully getting good reputation among device manufacturers at home and abroad. Moreover, the establishment of technology to lower the number of defects enabled us to mass-produce thick-film epitaxial wafers*3 and p-type epitaxial wafers*4, both for potential use in bipolar power devices. We expect that thick-film HGE we market will significantly contribute to the development of SiC-IGBT*5 which can be used as ultra-high-voltage devices for power generation/transmission systems. The size of the market for SiC epitaxial wafers for power devices is expected to reach ¥100 billion in 2025 as the early use of SiC power devices in vehicles is under consideration. SDK will continue meeting the need of the market for high-quality SiC epitaxial wafers, aiming to contribute to the improvement in energy efficiency of power devices.

*1 This number is based on a conversion into SiC epitaxial wafers for power devices having withstanding voltage of 1200 V.
*2 Dislocation that occurs on a basal plane of a single crystal SiC.
*3 These thick-film epitaxial wafers have thickness of about 100μm or more. (1μm=1/1000mm)
*4 A type of electrical conduction in semiconductors
In p-type semiconductors, positively charged holes are the majority carriers of electric energy.
*5 IGBT: insulated gate bipolar transistor
SiC-IGBT has both high-speed-switching capabilities equal to MOSFET and controls on high voltage and high current equal to bipolar transistor.

(4) Projections for 2017

a) Overall performance forecast

In 2017, the Japanese economy is expected to continue gradual recovery. While export and production activities of Japan are expected to improve, consumer spending will show steady change due to improvement in employment environment and personal income environment. As for overseas economies, the U.S. economy will continue to recover steadily due to continuously good corporate profits and firm consumer spending, though rises in interest rates are expected. As for the European economy, economies of Germany and the United Kingdom are expected to show mild recovery. However, the European economy will have a risk of business slowdown due to unforeseeable political factors including elections in France and Germany. The Chinese economy shows a sign of recovery. The ASEAN economies are expected to show mild recovery.

There will be such downward risk factors for the global economy as the possible wide fluctuations in exchange rates and market prices of natural resources, the unforeseeable effect of new U.S. administration's policies on international trade, the progress in the process of the United Kingdom's secession from the European Union, and the possible downturn trend in economies of resource producing countries and emerging countries. Thus the business environment will remain severe.

Under these circumstances, and with our ongoing medium-term consolidated business plan "Project 2020+," the Showa Denko Group will continue focusing on expansion of "individualized businesses" which are expected to maintain high-level profitability and stability, and find the way of these businesses into the global market. We will also reform our business model and improve earning power of existing businesses. In this way, we will strengthen our revenue base, control fluctuation in profit, and enhance our corporate value.

The Group's performance forecast for 2017 is as follows.

(Unit: millions of yen)

	Results for the term ended Dec. 31, 2016	Forecast for the term ending Dec.31, 2017	Increase/ decrease	Rate of change (%)
Net sales	671,159	745,000	73,841	11.0%
Operating income	42,053	54,500	12,447	29.6%
Ordinary income	38,690	47,500	8,810	22.8%
Profit attributable to owners of parent	12,305	25,000	12,695	103.2%

The above forecast is based on the assumption that the exchange rate and the naphtha price will be ¥111.8/$ and ¥40,300/KL for the first half of 2017, and ¥105.0/$ and ¥36,900/KL for the second half of 2017, respectively.

b) Net sales and operating income by business segment

[Net sales]

(Unit: millions of yen)

	Results for the term ended Dec. 31, 2016	Forecast for the term ending Dec. 31, 2017	Increase/ decrease
Petrochemicals	185,783	235,000	49,217
Chemicals	134,529	145,000	10,471
Electronics	103,339	123,000	19,661
Inorganics	50,870	57,000	6,130
Aluminum	98,575	106,000	7,425
Others	142,364	134,000	-8,364
Adjustments	-44,301	-55,000	-10,699
Total	671,159	745,000	73,841

[Operating income]

(Unit: millions of yen)

	Results for the term ended Dec. 31, 2016	Forecast for the term ending Dec. 31, 2017	Increase/ decrease
Petrochemicals	20,690	23,500	2,810
Chemicals	13,824	15,000	1,176
Electronics	13,907	18,500	4,593
Inorganics	-5,758	-1,000	4,758
Aluminum	4,416	6,000	1,584
Others	1,775	500	-1,275
Adjustments	-6,802	-8,000	-1,198
Total	42,053	54,500	12,447

The above forecast is based on the information available as of April 25, 2017 and our assumptions as of the same date about risk factors that could affect our future performance. Actual results may differ materially due to a variety of reasons. In addition, the above forecast does not include the effect of planned integration of graphite electrode businesses of SDK and SGL GE, which we announced in October 2016, because the date of business integration has not been specified yet as of April 25, 2017.

2. Financial conditions for the January 1 – December 31, 2016 period

a) Assets, liabilities and net assets

Total assets at the end of the year amounted to ¥932,698 million, a decrease of ¥7,797 million from the level at December 31, 2015. Despite the increase in accounts receivable-trade, total assets were down due partly to the decrease in inventory resulting from falls in material and fuel prices. Interest-bearing debt decreased ¥8,906 million, to ¥359,929 million. Total liabilities decreased ¥10,885 million, to ¥621,467 million, due partly to the decrease in interest-bearing debt and accounts payable-trade. Net assets at the end of the year amounted to ¥311,231 million, up ¥3,089 million, due partly to the posting of profit attributable to owners of parent.

b) Cash flows in 2016

Net cash provided by operating activities increased ¥7,779 million from the previous year, to ¥68,949 million, due partly to the increase in operating income. Net cash used in investing activities increased ¥11,257 million, to ¥53,754 million, due partly to an expenditure to acquire additional shares in a subsidiary accompanying a change in the scope of consolidation, and an increase in time deposits. Thus, free cash flow ended up in the proceeds of ¥15,195 million, a deterioration of ¥3,478 million. Net cash used in financing activities decreased ¥8,116 million due to the less reduction in interest-bearing debt than the previous year, and ended up in the payment of ¥13,220 million. As a result, and due partly to the influence of exchange rate fluctuations, cash and cash equivalents at December 31, 2016 increased ¥1,589 million, to ¥56,186 million.

c) Projections for 2017

Cash flows from operating activities will increase. As for net cash used in investing activities, payment will be the same as that in 2016. Thus, free cash flow for 2017 is expected to increase by around ¥14,800 million from ¥15,195 million in 2016, to the proceeds of ¥30,000 million. Interest bearing debt at the end of the year will be ¥352,000 million, down around ¥7,900 million.

The above forecast does not include the effect of planned integration of graphite electrode businesses of SDK and SGL GE, which we announced in October 2016, because the date of business integration has not been specified yet as of April 25, 2017.

d) Trends in cash flow indexes

	2013	2014	2015	2016
Equity ratio	30.6%	29.7%	31.5%	31.8%
Equity ratio on a market value basis	22.6%	21.1%	21.6%	25.6%
Debt maturity (years)	5.6	5.7	6.0	5.2
Interest coverage ratio	15.6	15.6	14.9	21.4

[Notes]
Equity ratio: Equity / Total assets
Equity ratio on a market value basis: Total market value of listed shares / Total assets
Debt maturity (years): Interest-bearing debt / Cash flows from operating activities
Interest coverage ratio: Cash flows from operating activities / Interest payment

・Each index is calculated by relevant formulas with financial figures quoted from the consolidated financial statements.
・Equity is calculated by deducting minority interests from total net assets.
・Total market value of listed shares is calculated by multiplying the closing share price at the year-end by the number of shares issued, after deducting treasury stock.
・As to the cash flows, the amount of “cash flows from operating activities” in the consolidated cash flow statement is used.

・“Interest-bearing debt” refers to loans payable, commercial paper, and bonds as listed among liabilities on the consolidated balance sheet.
・As to the interest payment, the amount of “interest expense” in the consolidated cash flow statement is used.

3. Basic policy regarding appropriation of the Company’s profits; dividends for 2016/2017

The Company considers the payment of dividends as an important obligation to its shareholders. The Company’s basic policy is to decide on dividends after consideration of the profit level for the term and the needs for internal reserve for use in future business expansions, while setting a target of 30% as payout ratio. The Company appropriates retained earnings preferentially to capital investment to accelerate growth of promising businesses, R&D expenses, and improvement of financial standing, which will contribute to continuous expansion of profit.

As to appropriation of profits for 2016, the Company decided not to make dividend payment based on the original record date of December 31, 2016 because the Company could not report financial statements to the ordinary general meeting of shareholders held on March 30, 2017 due to the delay in finalizing its financial statements. However, the Company is planning to resolve payment of dividends of ¥30 per share based on the record date of May 11, 2017 at the extraordinary general meeting of shareholders to be held in June 2017. For 2017, the Company is planning to pay end-of-term dividends of ¥30 per share.

4. Operational and other risks

We consider we face the risks, as explained below, that could adversely affect our future performance, financial conditions, and cash flows. The Showa Denko Group is taking steps to prevent the realization of these risks and minimize impact on its operations. The following covers important risk factors considered being present as of this April 25, 2017. This list is not inclusive.

(1) Substantial fluctuations in the performances of individual businesses

The Group is manufacturing and selling a wide variety of products, such as petrochemicals, chemicals, electronics, inorganics, and aluminum. The following risks are expected in major business fields, but those are not limited to the businesses mentioned below.

① Petrochemicals

The Group purchases and imports a large amount of feedstock, including naphtha. When the price of naphtha or other types of feedstock fluctuates due to a change in crude oil prices, a change in supply-demand balance, or a currency fluctuation, and when we cannot secure sufficient spreads between the manufacturing cost and selling prices of products, the Group’s performance and financial conditions can be affected. Furthermore, earnings from petrochemicals largely depend on the supply-demand balance. Construction of large plants by competitors and resultant oversupply as well as a sharp decrease in demand due to unfavorable changes in the Japanese or world economies can affect the Group’s performance and financial conditions.

② Aluminum

The Group imports a large amount of aluminum ingots from overseas sources. When the aluminum ingot price rises due to a rise in LME prices, a rise in premium on aluminum, or a weaker yen, and when we cannot absorb the manufacturing cost increase in the form of higher product prices, the Group’s performance and financial conditions can be affected. Furthermore, most of our products are sold as materials and components for the automobile, electric appliance, and electronics sectors. Trends of those industries, which are beyond our control, can substantially affect such businesses.

③ HD media

In the Group's HD media business, the sales volume is largely influenced by demand for electric appliances and IT devices. The business requires innovations at a rapid pace and involves fierce international competition. Fluctuations in demand and intensification of competition will cause fluctuations in selling prices. The Group is prepared to develop and provide products meeting the market requirements and has established a global production/marketing setup. However, when customer requirements change more quickly than we expected, when supply-demand balance changes substantially, and when exchange rates sharply fluctuate, the Group's performance and financial conditions can be affected.

④ Overseas operations

The Group is producing and selling in Asia, North America, and Europe. Operations overseas involve such special risks as unexpected changes in laws and regulations, deterioration in political/economic situations, and social disorder due to war and terrorism. Such risks can become real and affect our overseas operations, resulting in adverse impact on the Group's performance and financial conditions.

⑤ Mergers, acquisitions, capital tie-up, business reorganization and restructuring

The Group implements mergers, acquisitions, capital tie-up, business reorganization and restructuring at home and abroad with the view of expanding scope of businesses and improving profitability. If these measures do not allow the Group to achieve desired results due to changes in business environment surrounding the Group or other companies to which the Group invest its money, these measures may have bad influences upon the Group's performance and financial conditions. In addition, when the Group implements restructuring of its businesses, including withdrawal form unprofitable businesses and restructuring of affiliated companies, the Group's performance and financial conditions can be affected.

(2) Unexpected fluctuations in financial conditions and cash flows

① Substantial fluctuations in exchange rates

As for foreign-currency-based transactions centering on exports/imports, the Group makes its best efforts to minimize relevant exchange rate fluctuation risks, mainly through forward exchange contracts. However, substantial fluctuations in exchange rates can affect the Group's performance and financial conditions. In particular, a sharp appreciation of the yen against other currencies can adversely affect the Group's performance. Exchange rate fluctuations can also affect the Group's performance and financial conditions through the conversion of overseas subsidiaries' financial statements into Japanese yen.

② Trends in financial markets and changes in the fund-raising environment

The trends in the financial markets and deterioration in the Group's financial indexes can affect the Group's fund-raising and interest expenses: for example, in the form of prompt repayment of a loan owing to the terms of financial covenants. In that event, the Group's performance and financial conditions could be affected.

③ Employees' severance indemnities

The Group's employees' severance indemnities and expenses are calculated based on various basic rates and the yield of pension assets used in pension calculations. Fluctuations in the current price of pension assets, trends in interest rates, and changes in the retirement benefit/pension systems can affect the Group’s performance and financial conditions.

④ Securities

As the Group owns securities with current prices, fluctuations in stock prices can result in valuation losses, affecting the Group’s performance and financial conditions.

⑤ Accounting for impairment of fixed assets

The Group has adopted the accounting standard regarding the impairment of fixed assets. The Group may incur additional losses from the impairment of fixed assets as a result of future changes in the current prices of land and other fixed assets or a substantial change in the business environment.

⑥ Deferred tax assets

The Group’s financial statements include deferred tax assets in relation to temporary differences (differences between the assets/liabilities on the consolidated financial statements and the assets/liabilities in calculation of taxable income). The calculation of deferred tax assets is based on various projections for future taxable income. Thus, when actual taxable income differs from the projections or in case of a revision of the taxation system (including tax rates), it becomes necessary to revise deferred tax assets. That situation could affect the Group’s performance and financial conditions.

(3) Specific regulations

The Group’s businesses are subject to various restrictions as stipulated by laws and regulations. The restrictions relate to industrial safety (such as the Law for Prevention of Disasters at Petroleum Complexes, Etc.; the Fire Service Law; and the High Pressure Gas Safety Law) and the environment and chemical substances (such as the Basic Environment Law; the Air Pollution Control Law; and the Law concerning the Examination and Regulation of Manufacture, Etc. of Chemical Substances). The Group observes these laws and regulations as it conducts its respective businesses. In the event the Group fails to observe any of the laws and regulations, the Group’s activities could be restricted. In case stricter regulations are introduced, resulting in higher costs, the Group’s performance and financial conditions can be affected.

(4) Important lawsuits

While the Group makes its best efforts to observe laws and agreements, the Group may be sued as it conducts its wide-ranging businesses.

(5) Others

① R&D

Making “Create new value by forging, polishing, and linking diverse individualized technologies.” as its basic policy in R&D, the Group concentrates its R&D resources upon research and business development that leads to strengthening of its core businesses and expansion of businesses in their surrounding fields. On the other hand, the Group also strives to create next generation businesses that make the most of open innovation and M&A. Through strengthening of its core technologies that covers such diverse fields as inorganics, organics and aluminum, and achievement of synergies among these technologies, the Group promotes its R&D programs that aim to create individualized products, technologies, and high-value-added businesses. However, in case the actual results materially differ from original plans, the Group’s performance and financial conditions could be affected.

② Intellectual property

The Group is making its best efforts to obtain, use, and protect intellectual property, such as industrial property rights and know-how, in recognition of their ability to make the Group's businesses more competitive. The Group also respects other companies' rights. However, in the event of failure to duly obtain or use the rights, infringement by a third party, or if the Group is considered to have infringed a third party's intellectual property, the Group's operations can be hindered and the Group's performance and financial conditions could be affected.

③ Quality assurance and product liability

The Group has established its internal rules on quality assurance and quality control, as well as organizations for managing and promoting quality assurance. Furthermore, the Group has obtained certification under ISO 9001 standards to ensure strict quality control. However, in the event of a serious quality defect or being sued for product liability, the Group's reputation could be damaged and the Group may be forced to pay compensation to customers. This could affect the Group's performance and financial conditions.

④ Accidents and disasters

The Group is committed to securing steady and safe operations. The Group conducts regular inspections of all manufacturing facilities in an effort to minimize any risk factors pertaining to the suspension of operations or accidents due to problems with manufacturing facilities. In the event of injury or damage to property due to an accident, a large-scale natural disaster, etc., the Group's reputation could be damaged. The Group may incur substantial costs in dealing with the situation and may lose business opportunities due to the suspension of production. This could affect the Group's performance and financial conditions. Furthermore, even when the Group's manufacturing facilities are not directly influenced, the Group's production activities may be restricted by trouble with procurement or disruption of supply chains due to accidents at suppliers' sites or a natural disaster, or by a shortage of power supply. These factors could affect the Group's performance and financial conditions.

⑤ Impact on environment

The Group is committed to the principles of Responsible Care, which means that we are working to ensure the health and safety of everyone and to protect the environment from harm caused by chemical substances throughout their life cycles, namely, the development, production, distribution, use, and disposal. In the event of causing impact on the environment, the Group's reputation can be damaged. The Group may incur costs, including compensation, lose business opportunities due to the suspension of production, and/or pay compensation to customers. These factors can affect the Group's performance and financial conditions.

5. Management Policy

(1) Showa Denko's basic management policy

(Vision)

We at the Showa Denko Group will provide products and services that are useful and safe and exceed our customers' expectations, thereby enhancing the value of the Group, giving satisfaction to our shareholders, and contributing to the sound growth of international society as a responsible corporate citizen.

(Our Code of Conduct)

1) We will act with integrity as a responsible citizen of the international society.
2) We will provide our customers with satisfaction and safety.
3) We will develop corporate culture that helps every member of the Group to fully display his/her ability.
4) We will meet the expectations of local communities.
5) We will make vigorous efforts to maintain and improve the global environment.

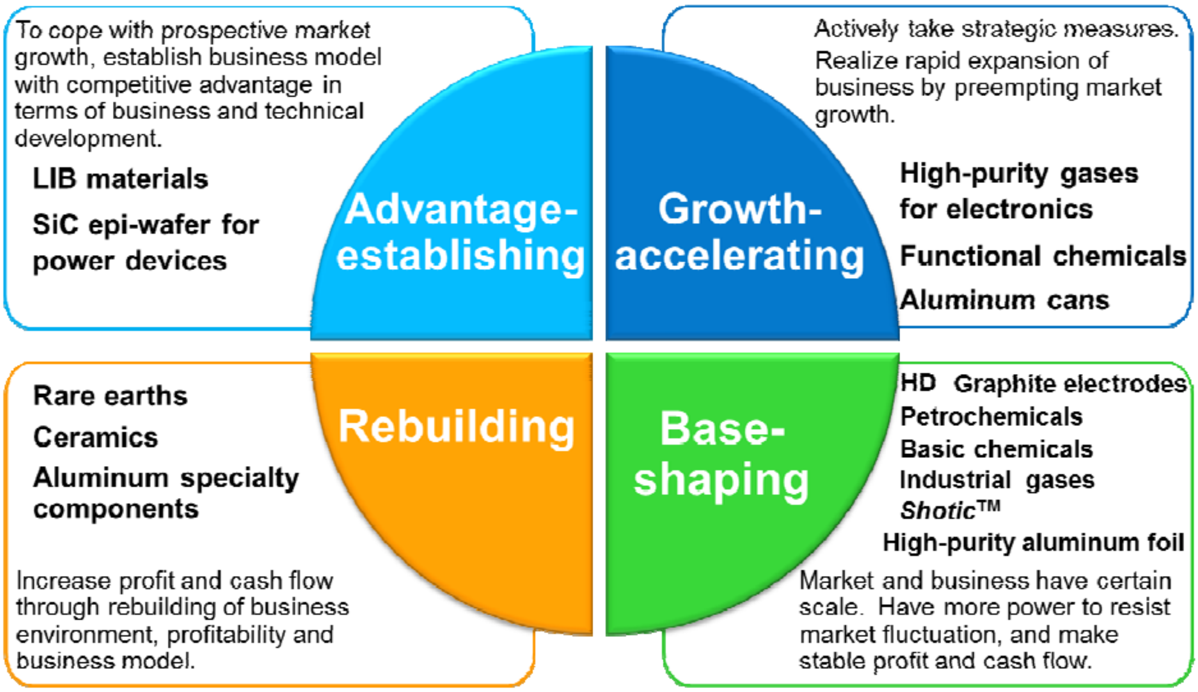
(2) Medium to long-term business strategy

1) Medium-term business plan “Project 2020+” (announced in December 2015)

In January 2016, The Showa Denko Group started its new medium-term consolidated business plan “Project 2020+.” Under this new business plan, the Group will expand and strengthen its “individualized businesses,” which are expected to maintain their high-level profitability and stability, and promote these businesses in the global market. The Group will enhance its capability to resist fluctuation in market prices by providing customers with attractive products and services and holding many businesses that have top shares in the competitive markets of global or certain scale. Moreover, the Group will reform its business model, and improve its existing businesses’ earning power. Thus the Group will enhance its corporate value.

2) Basic strategy under “Project 2020+”

The Group will aim to contribute to the solution of social issues in global scale by providing high-value-added products, technology and services to five market domains, namely, “Infrastructure,” “Energy,” “Mobility,” “Living Environment,” and “Electronics.” In the business portfolio we aim to realize, we now classify our businesses into four categories: “Growth-accelerating,” “Advantage-establishing,” “Base-shaping,” and “Rebuilding.” We define missions for each business category in order to strengthen our businesses. We will further strengthen earning power of our existing businesses by reforming business models, and also promote M&A and business alliances with other companies aiming to introduce new growth businesses from outside entities. In addition, aiming to promote globalization of our business activities and expand our “Individualized businesses” further, we will implement strategic capital investment in growing Asian/ASEAN market, and also pursue growth opportunities in developed countries in Europe and North America.



Business portfolio in Project 2020+

a) Growth-accelerating businesses

This category includes high-purity gases for electronics, functional chemicals, and aluminum cans businesses. In this business category, we will positively take strategic measures to take advantage of growing overseas markets including Asian and ASEAN markets, and achieve fast expansion of these businesses.

b) Advantage-establishing businesses

This category includes lithium-ion battery (LIB) materials, and SiC epitaxial wafer for power devices businesses. In this business category, we will establish business models with competitive advantages in terms of business operation and technology development, since the markets for these two businesses are expected to have rapid growth in the near future.

c) Base-shaping businesses

This category includes hard disk (HD) media, graphite electrodes, petrochemicals, and some other businesses. These businesses are expected to keep certain scales in terms of market and business operation. Therefore, we will make these businesses have more power to resist fluctuation in market prices and earn stable profit and cash flow.

d) Rebuilding businesses

In this business category, we will increase profit and cash flow earned by these businesses by rebuilding their competitive environment, profitability and business models.

e) Capital investment plan

We will carry out capital investment amounting to ¥130 billion during three years from 2016 to 2018. We will invest strategically, centering in Growth-accelerating and Advantage-setting businesses. Moreover, in the market domains of Energy and

Living Environment, we will reduce GHG emission and strengthen resource-recycling businesses through investment in businesses that promote recycling, including recycling of used plastic, and investment in businesses that promote counter measures against global warming, including energy/electricity saving and introduction of latest-type hydropower generation facilities.

f) R&D strategy

In order to solve social issues and create new value concerning the five market domains of Infrastructure, Energy, Mobility, Living Environment, and Electronics, we will promote our original R&D programs by deepening and fusing various elements including our diverse business domains, “Core technologies” which are elemental technologies with competitive advantages, and “Strategic technologies” which are world-top-level technologies we cultivated over many years. During the three year period from 2016 to 2018, we will invest ¥60 billion in our R&D activities. Thus we will intensively input our business resources into R&D activities related to strengthening of our core businesses and expansion of businesses in their surrounding fields. We will also promote utilization of open innovation and M&A, aiming to create next-generation business themes that lead to the prosperity of the Showa Denko Group in the future.

(3) Financial goals

Under the new medium-term consolidated business plan “Project 2020+,” the Group set its financial goals as follows.

Financial goals of the Group for 2018 and 2016 actual results

	2016 results	*2018 targets
Net sales	¥671.2 billion	¥855 billion
Operating income	¥42.1 billion	¥57 billion
Operating income/Net sales	6.3%	6.7%
FCF	¥15.2 billion	**¥68 billion
ROA	4.5%	6.0%
ROE	4.1%	9.0%
D/E ratio	1.16 times	1.00 times

*Announced on December 11, 2015 (Assumed dollar-yen exchange rate: ¥115/$)
**Cumulative: 2016-2018

6. Tasks to be accomplished

While rapid economic growth in emerging countries is bringing about the rise in living standards, there is increasing need for concerted efforts to reduce impacts on the global environment. This social trend is producing new market needs. Specifically, demand is growing for compact electronic devices with higher quality, speed, and capacity, which will lead to more convenience and comfort. Furthermore, new technologies are needed to realize a healthy and safe society through various environmental protection measures, including those against global warming. And the security of energy supply should be achieved through reductions in dependence on fossil fuels and conservation of energy.

We will provide components, materials, and solutions in these areas based on our advanced and proprietary technologies, and contribute toward creating a society where affluence and sustainability are harmonized.

Moreover, we will continue to enhance corporate governance in order to ensure sound, effective and transparent management, as well as to really become “a company that contributes to the sound growth of society,” which continuously improves its own corporate value and consequently is trusted and appreciated by society. Aiming to achieve these goals, the Showa Denko Group established “Basic Policy on Corporate Governance” in 2015.

We particularly recognize strengthening of group-wide risk management function as an important task before us, and will take multilateral measures to tackle this task in a timely manner.

For the text of our “Basic Policy on Corporate Governance,” please refer to SDK’s website.

http://www.sdk.co.jp/assets/files/english/about/governance/governance_policy151225_e.pdf

The world economy is undergoing drastic changes in the market structure. Under the medium-term consolidated business plan “Project 2020+” started in January 2016, the Group will expand and strengthen its “individualized businesses,” which are expected to maintain their high-level profitability and stability, and promote these businesses in the global market. Aiming to promote its expansions in overseas markets, the Group will strive to take growth opportunities not only in rapidly growing Asian/ASEAN market but also in the markets of developed countries in Europe and North America, and will provide sophisticated high-performance products and technologies. Thus, we will continue meeting customer requirements and social needs.

7. Our view on selection of accounting standard

The Group executes its consolidated financial statements in accordance with the Japanese standards. We judge our financial statements appropriately indicate the Group’s financial conditions and business performances. As for IFRS, we will continue carefully observing movements and trends of the standard and its system.

Consolidated Balance Sheets

(¥ in millions, US$ in thousands)

	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2016
Assets	¥	¥	$
Current assets			
Cash and deposits	64,054	69,914	600,170
Notes and accounts receivable-trade	135,077	143,816	1,234,580
Merchandise and finished goods	48,660	45,838	393,493
Work in process	14,692	8,576	73,621
Raw materials and supplies	42,573	36,933	317,048
Deferred tax assets	3,029	4,092	35,129
Other	24,319	26,606	228,398
Allowance for doubtful accounts	(880)	(699)	(5,997)
Total current assets	331,525	335,077	2,876,442
Noncurrent assets			
Property, plant and equipment			
Buildings and structures, net	81,529	77,446	664,829
Machinery, equipment and vehicles, net	112,940	110,213	946,112
Tools, furniture and fixtures, net	7,313	7,085	60,817
Land	251,851	242,816	2,084,440
Construction in progress	48,660	49,575	425,574
Total property, plant and equipment	502,293	487,135	4,181,773
Intangible assets			
Other	12,268	11,712	100,537
Total intangible assets	12,268	11,712	100,537
Investments and other assets			
Investment securities	76,568	74,951	643,415
Net defined benefit asset	19	365	3,131
Deferred tax assets	8,877	9,115	78,249
Other	24,809	23,150	198,732
Allowance for doubtful accounts	(15,864)	(8,807)	(75,602)
Total investments and other assets	94,409	98,775	847,925
Total noncurrent assets	608,970	597,621	5,130,234
Total assets	940,494	932,698	8,006,676
Liabilities			
Current liabilities			
Notes and accounts payable-trade	103,737	104,005	892,820
Short-term loans payable	69,000	66,895	574,254
Current portion of long-term loans payable	49,386	48,234	414,064
Commercial papers	12,000	5,000	42,922
Current portion of bonds	10,000	10,000	85,844
Accounts payable-other	62,063	53,790	461,761
Provision for repairs	62	38	326
Provision for bonuses	1,904	2,253	19,339
Provision for stock payment	—	25	216
Provision for business structure improvement	83	382	3,276
Provision for Niigata Minamata Disease	126	118	1,010
Other	22,732	20,053	172,140
Total current liabilities	331,093	310,792	2,667,971
Noncurrent liabilities			
Bonds payable	35,000	42,000	360,546
Long-term loans payable	193,449	187,800	1,612,157
Deferred tax liabilities	3,873	4,041	34,693
Deferred tax liabilities for land revaluation	35,893	33,144	284,522
Provision for repairs	1,377	2,759	23,685
Provision for director retirement	—	73	627
Provision for stock payment	—	59	508
Provision for business structure improvement	475	1,121	9,623
Net defined benefit liability	15,185	21,923	188,194
Other	16,006	17,754	152,411
Total noncurrent liabilities	301,259	310,675	2,666,966
Total liabilities	632,352	621,467	5,334,937
Net assets			
Shareholders' equity			
Capital stock	140,564	140,564	1,206,657
Capital surplus	62,221	62,033	532,521
Retained earnings	55,202	65,358	561,061
Treasury stock	(10,157)	(10,502)	(90,153)
Total shareholders' equity	247,829	257,453	2,210,086
Accumulated other comprehensive income			
Valuation difference on available-for-sale securities	3,927	4,519	38,789
Deferred gains or losses on hedges	(326)	320	2,750
Revaluation reserve for land	31,307	31,026	266,339
Foreign currency translation adjustment	18,611	14,239	122,231
Remeasurements of defined benefit plans	(4,835)	(10,996)	(94,397)
Total accumulated other comprehensive income	48,683	39,107	335,712
Non-controlling interests	11,629	14,671	125,941
Total net assets	308,142	311,231	2,671,739
Total liabilities and net assets	940,494	932,698	8,006,676

Consolidated Statements of Income

(¥ in millions, US$ in thousands)

	Results for the year ended Dec.31 2015 and 2016		
	2015	2016	2016
	¥	¥	$
Net sales	775,732	671,159	5,761,512
Cost of sales	653,924	544,994	4,678,464
Gross profit	121,808	126,164	1,083,048
Selling, general and administrative expenses	88,299	84,111	722,043
Operating income	33,508	42,053	361,005
Non-operating income			
Interest income	250	438	3,763
Dividends income	1,673	1,202	10,322
Equity in earnings of affiliates	1,917	4,328	37,157
Rent income on noncurrent assets	1,613	1,506	12,928
Miscellaneous income	2,609	1,531	13,142
Total non-operating income	8,061	9,006	77,312
Non-operating expenses			
Interest expenses	4,077	3,231	27,738
Equity in losses of affiliates	—	—	—
Foreign exchange losses	441	1,658	14,234
Loss on mothballing of operation	1,710	3,122	26,797
Miscellaneous expenses	3,291	4,359	37,416
Total non-operating expenses	9,520	12,369	106,185
Ordinary income	32,050	38,690	332,132
Extraordinary income			
Gain on sales of noncurrent assets	211	830	7,124
Gain on bargain purchase	—	686	5,889
Other	8,180	144	1,232
Total extraordinary income	8,391	1,659	14,245
Extraordinary loss			
Loss on sales and retirement of noncurrent assets	4,080	4,052	34,785
Impairment loss	10,678	15,644	134,291
Provision of allowance for doubtful accounts	13,404	—	—
Other	6,215	3,125	26,825
Total extraordinary losses	34,377	22,821	195,901
Income before income taxes and non-controlling interests	6,064	17,529	150,477
Income taxes	13,962	3,691	31,686
Profit (loss)	(7,898)	13,838	118,791
Profit (loss) attributable to non-controlling interests	(8,819)	1,533	13,162
Profit (loss) attributable to owners of parent	921	12,305	105,629

Consolidated Statements of Comprehensive Income

(¥ in millions, US$ in thousands)

	Results for the year ended Dec.31 2015 and 2016		
	2015	2016	2016
	¥	¥	$
Profit (loss)	(7,898)	13,838	118,791
Other comprehensive income:			
Valuation difference on available-for-sale securities	(3,212)	516	4,429
Deferred gains or losses on hedges	(1,421)	629	5,399
Revaluation reserve for land	3,779	1,824	15,661
Foreign currency translation adjustments	(2,320)	(4,520)	(38,803)
Remeasurements of defined benefit plans, net of tax	9	(6,168)	(52,948)
Share of other comprehensive income of entities accounted for using equity method	119	41	350
Total other comprehensive income	(3,046)	(7,678)	(65,912)
Comprehensive income	(10,945)	6,160	52,879
(Comprehensive income attributable to)			
Comprehensive income attributable to owners of parent	(1,661)	4,807	41,261
Comprehensive income attributable to non-controlling interests	(9,284)	1,353	11,618

Consolidated Statements of Changes in Net Assets

For the year ended December 31, 2015 (¥ in millions)

	Shareholders' equity					Valuation and translation adjustments							
	Capital stock	Capital surplus	Retained earnings	Treasury stock	Total shareholders' equity	Valuation difference on available-for-sale securities	Deferred gains or losses on hedges	Revaluation reserve for land	Foreign currency translation adjustment	Remeasurements of defined benefit plans	Total valuation and translation adjustments	Non-controlling interests	Total net assets
Balance at December 31, 2014	140,564	62,221	56,896	(10,153)	249,527	6,783	1,262	27,908	19,018	(4,899)	50,072	19,488	319,087
Cumulative effects of changes in accounting policies	-	-	29	-	29	-	-	-	-	2,668	2,668	-	2,697
Restated balance at December 31, 2014	140,564	62,221	56,925	(10,153)	249,556	6,783	1,262	27,908	19,018	(2,231)	52,740	19,488	321,784
Changes of items during the period													
Dividends from surplus			(4,285)		(4,285)								(4,285)
Net income			921		921								921
Purchase of treasury stock				(5)	(5)								(5)
Disposal of treasury stock		0		0	0								0
Increase by increase of consolidated subsidiaries			1,084		1,084								1,084
Decrease by increase of consolidated subsidiaries			(304)		(304)								(304)
Decrease by decrease of consolidated subsidiaries			(225)		(225)								(225)
Increase by increase of associates accounted for using equity method			637		637								637
Change in treasury shares of parent arising from transactions with non-controlling shareholders													-
Reversal of revaluation reserve for land			355		355								355
Others		(0)	93		93								93
Net changes of items other than shareholders' equity						(2,856)	(1,588)	3,398	(407)	(2,604)	(4,057)	(7,858)	(11,915)
Total changes of items during the period	-	(0)	(1,723)	(4)	(1,727)	(2,856)	(1,588)	3,398	(407)	(2,604)	(4,057)	(7,858)	(13,642)
Balance at December 31, 2015	140,564	62,221	55,202	(10,157)	247,829	3,927	(326)	31,307	18,611	(4,835)	48,683	11,629	308,142

For the year ended December 31, 2016 (¥ in millions)

	Shareholders' equity					Total accumulated other comprehensive income							
	Capital stock	Capital surplus	Retained earnings	Treasury stock	Total shareholders' equity	Valuation difference on available-for-sale securities	Deferred gains or losses on hedges	Revaluation reserve for land	Foreign currency translation adjustment	Remeasurements of defined benefit plans	Total valuation and translation adjustments	Non-controlling interests	Total net assets
Balance at December 31, 2015	140,564	62,221	55,202	(10,157)	247,829	3,927	(326)	31,307	18,611	(4,835)	48,683	11,629	308,142
Cumulative effects of changes in accounting policies										-			
Restated balance at December 31, 2015	140,564	62,221	55,202	(10,157)	247,829	3,927	(326)	31,307	18,611	(4,835)	48,683	11,629	308,142
Changes of items during the period													
Dividends from surplus			(4,285)		(4,285)								(4,285)
Net income			12,305		12,305								12,305
Purchase of treasury stock				(345)	(345)								(345)
Disposal of treasury stock		(0)		0	0								0
Increase by increase of consolidated subsidiaries			70		70								70
Decrease by increase of consolidated subsidiaries													-
Decrease by decrease of consolidated subsidiaries													-
Increase by increase of associates accounted for using equity method													-
Change in treasury shares of parent arising from transactions with non-controlling shareholders		(188)			(188)								(188)
Reversal of revaluation reserve for land			2,093		2,093								2,093
Others			(27)		(27)								(27)
Net changes of items other than shareholders' equity						592	646	(281)	(4,372)	(6,161)	(9,576)	3,042	(6,535)
Total changes of items during the period	-	(188)	10,156	(345)	9,623	592	646	(281)	(4,372)	(6,161)	(9,576)	3,042	3,089
Balance at December 31, 2016	140,564	62,033	65,358	(10,502)	257,453	4,519	320	31,026	14,239	(10,996)	39,107	14,671	311,231

For the year ended December 31, 2016 (US$ in thousands)

	Shareholders' equity					Total accumulated other comprehensive income							
	Capital stock	Capital surplus	Retained earnings	Treasury stock	Total shareholders' equity	Valuation difference on available-for-sale securities	Deferred gains or losses on hedges	Revaluation reserve for land	Foreign currency translation adjustment	Remeasurements of defined benefit plans	Total valuation and translation adjustments	Non-controlling interests	Total net assets
Balance at December 31, 2015	1,206,657	534,132	473,878	(87,193)	2,127,474	33,711	(2,797)	268,751	159,765	(41,510)	417,919	99,831	2,645,225
Cumulative effects of changes in accounting policies										-			
Restated balance at December 31, 2015	1,206,657	534,132	473,878	(87,193)	2,127,474	33,711	(2,797)	268,751	159,765	(41,510)	417,919	99,831	2,645,225
Changes of items during the period													
Dividends from surplus			(36,782)		(36,782)								(36,782)
Net income			105,629		105,629								105,629
Purchase of treasury stock				(2,962)	(2,962)								(2,962)
Disposal of treasury stock		(1)		2	2								2
Increase by increase of consolidated subsidiaries			599		599								599
Decrease by increase of consolidated subsidiaries													-
Decrease by decrease of consolidated subsidiaries													-
Increase by increase of associates accounted for using equity method													-
Change in treasury shares of parent arising from transactions with non-controlling shareholders		(1,610)			(1,610)								(1,610)
Reversal of revaluation reserve for land			17,971		17,971								17,971
Others			(234)		(234)								(234)
Net changes of items other than shareholders' equity						5,078	5,547	(2,412)	(37,534)	(52,887)	(82,207)	26,110	(56,098)
Total changes of items during the period	-	(1,611)	87,183	(2,960)	82,612	5,078	5,547	(2,412)	(37,534)	(52,887)	(82,207)	26,110	26,514
Balance at December 31, 2016	1,206,657	532,521	561,061	(90,153)	2,210,086	38,789	2,750	266,339	122,231	(94,397)	335,712	125,941	2,671,739

Consolidated Statements of Cash Flows

(¥ in millions, US$ in thousands)

	Results for the year (Jan. 1-Dec. 31)		
	2015	2016	2016
	¥	¥	$
Net cash provided by (used in) operating activities			
Income before income taxes and minority interests	6,064	17,529	150,477
Depreciation and amortization	42,137	38,761	332,741
Impairment loss	10,678	15,644	134,291
Amortization of goodwill	1,354	(11)	(97)
Increase (decrease) in allowance for doubtful accounts	14,220	(6,441)	(55,291)
Increase (decrease) in net defined benefit liability	(6,903)	6,744	57,895
Interest and dividends income	(1,922)	(1,641)	(14,085)
Interest expenses	4,077	3,231	27,738
Equity in (earnings) losses of affiliates	(1,917)	(4,328)	(37,157)
Loss (gain) on sales and valuation of investment securities	(6,243)	(6)	(53)
Loss on retirement of noncurrent assets	3,454	4,030	34,596
Loss (gain) on sales of noncurrent assets	415	(808)	(6,935)
Decrease (increase) in notes and accounts receivable-trade	22,134	(2,380)	(20,432)
Decrease (increase) in inventories	18,119	20,112	172,647
Increase (decrease) in notes and accounts payable-trade	(24,502)	(10,315)	(88,548)
Other, net	(16,733)	(10,044)	(86,219)
Subtotal	64,430	70,076	601,566
Interest and dividends income received	4,193	5,565	47,773
Interest expenses paid	(4,115)	(3,227)	(27,698)
Income taxes paid	(3,337)	(3,466)	(29,750)
Net cash provided by (used in) operating activities	61,170	68,949	591,891
Net cash provided by (used in) investing activities			
Payments into time deposits	(28,962)	(29,438)	(252,709)
Proceeds from withdrawal of time deposits	31,006	25,287	217,078
Purchase of property, plant and equipment	(41,263)	(38,317)	(328,930)
Proceeds from sales of property, plant and equipment	697	1,724	14,799
Purchase of investment securities	(23,446)	(3,163)	(27,155)
Proceeds from sales of investment securities	23,725	173	1,487
Purchase of investments in subsidiaries	(862)	-	-
Purchase of investments in subsidiaries resulting in change in scope of consolidation	-	(2,132)	(18,302)
Net decrease (increase) in short-term loans receivable	(386)	(1,231)	(10,567)
Payments of long-term loans receivable	(2,810)	(4,077)	(34,996)
Collection of long-term loans receivable	520	322	2,766
Other, net	(715)	(2,903)	(24,921)
Net cash provided by (used in) investing activities	(42,497)	(53,754)	(461,449)
Net increase (decrease) in short-term loans payable	(1,287)	(242)	(2,079)
Net increase (decrease) in commercial papers	7,000	(7,000)	(60,091)
Proceeds from long-term loans payable	50,240	42,288	363,018
Repayment of long-term loans payable	(71,006)	(49,273)	(422,976)
Proceeds from issuance of bonds	10,000	17,000	145,935
Redemption of bonds	(10,000)	(10,000)	(85,844)
Proceeds from stock issuance to non controlling shareholders	129	-	-
Cash dividends paid	(4,272)	(4,267)	(36,627)
Cash dividends paid to non controlling shareholders	(435)	(376)	(3,229)
Other, net	(1,705)	(1,350)	(11,589)
Net cash provided by (used in) financing activities	(21,336)	(13,220)	(113,482)
Effect of exchange rate change on cash and cash equivalents	(1,058)	(523)	(4,488)
Net increase (decrease) in cash and cash equivalents	(3,721)	1,453	12,472
Cash and cash equivalents at beginning of period	55,162	54,597	468,682
Increase in cash and cash equivalents from newly consolidated subsidiary	3,002	136	1,167
Decrease in cash and cash equivalents resulting from exclusion of subsidiaries	(7)	-	-
Increase in cash and cash equivalents resulting from merger	161	-	-
Cash and cash equivalents at end of period	54,597	56,186	482,321

SEGMENT INFORMATION

(a) The operations of the Companies for the year ended December 31, 2015 and 2016 were summarized by business segment as follows:

Year ended December 31, 2015	Millions of yen							
	Petrochemicals	Chemicals	Electronics	Inorganic	Aluminium	Others	Elimination	Consolidated
Sales								
Outside customers	¥226,442	¥130,150	¥129,759	¥55,223	¥93,377	¥140,781	¥—	¥775,732
Inter-segment	4,846	12,142	1,733	8,253	7,380	6,452	(40,805)	—
Total	231,288	142,292	131,492	63,476	100,756	147,233	(40,805)	775,732
Operating income (loss)	¥10,543	¥10,707	¥17,472	(¥1,249)	¥2,563	¥1,329	(¥7,857)	¥33,508
Assets	¥120,242	¥198,359	¥146,590	¥152,814	¥155,180	¥178,711	(¥11,402)	¥940,494
Depreciation	5,752	7,569	13,964	4,132	6,042	2,863	1,815	42,137
Amortization of (negative) goodwill	—	(273)	12	1,354	256	4	—	1,354
Investments in non-consolidated subsidiaries and affiliates	14,230	2,538	—	6,486	—	232	—	23,486
Capital expenditures	1,969	10,345	11,130	10,218	6,135	2,369	1,893	44,059

Year ended December 31, 2016	Millions of yen							
	Petrochemicals	Chemicals	Electronics	Inorganic	Aluminium	Others	Elimination	Consolidated
Sales								
Outside customers	¥180,178	¥118,433	¥102,053	¥43,776	¥90,715	¥136,004	¥—	¥671,159
Inter-segment	5,605	16,096	1,286	7,094	7,860	6,359	(44,301)	—
Total	185,783	134,529	103,339	50,870	98,575	142,364	(44,301)	671,159
Operating income (loss)	¥20,690	¥13,824	¥13,907	(¥5,758)	¥4,416	¥1,775	(¥6,802)	¥42,053
Assets	¥135,411	¥205,555	¥133,094	¥152,976	¥148,415	¥174,146	(¥16,900)	¥932,698
Depreciation	5,715	7,350	11,711	4,087	5,678	2,835	1,384	38,761
Amortization of (negative) goodwill	—	(261)	12	8	228	1	—	(11)
Investments in non-consolidated subsidiaries and affiliates	10,793	2,167	—	5,820	—	288	—	19,067
Capital expenditures	3,397	12,937	6,390	8,221	5,193	2,292	846	39,276

Year ended December 31, 2016	Thousands of U.S. dollars							
	Petrochemicals	Chemicals	Electronics	Inorganic	Aluminium	Others	Elimination	Consolidated
Sales								
Outside customers	$1,546,726	$1,016,676	$876,065	$375,790	$778,738	$1,167,517	$—	$5,761,512
Inter-segment	48,115	138,178	11,040	60,898	67,474	54,592	(380,296)	—
Total	1,594,841	1,154,854	887,105	436,688	846,211	1,222,110	(380,296)	5,761,512
Operating income (loss)	$177,613	$118,674	$119,387	($49,432)	$37,910	$15,241	($58,389)	$361,005
Assets	$1,162,426	$1,764,572	$1,142,540	$1,313,215	$1,274,058	$1,494,947	($145,081)	$8,006,675
Depreciation	49,063	63,100	100,536	35,086	48,741	24,335	11,880	332,741
Amortization of (negative) goodwill	—	(2,238)	101	72	1,959	9	—	(97)
Investments in non-consolidated subsidiaries and affiliates	92,648	18,602	—	49,959	—	2,468	—	163,677
Capital expenditures	29,161	111,057	54,854	70,570	44,581	19,675	7,260	337,158

(b) The operations of the Companies for the year ended December 31, 2015 and 2016 were summarized by geographic area as follows:

Year ended December 31, 2015	Millions of yen			
	Japan	Asia	Others	Total
Sales	¥474,402	¥258,932	¥42,398	¥775,732
	Japan	Others	Total	
Tangible fixed assets	¥413,535	¥87,753	¥501,288	

Year ended December 31, 2016	Millions of yen			
	Japan	Asia	Others	Total
Sales	¥430,639	¥208,626	¥31,893	¥671,159
	Japan	Others	Total	
Tangible fixed assets	¥410,099	¥77,035	¥487,135	

Year ended December 31, 2016	Thousands of U.S. dollars			
	Japan	Asia	Others	Total
Sales	$3,696,793	$1,790,936	$273,783	$5,761,512
	Japan	Others	Total	
Tangible fixed assets	$3,520,469	$661,304	$4,181,773	

(c) The impairment loss and the (negative) goodwill of the Companies for the year ended December 31,2015 and 2016 were summarized by business segment as follows:

Year ended December 31, 2015	Millions of yen							
	Petrochemicals	Chemicals	Electronics	Inorganic	Aluminium	Others	Elimination	Total
Impairment loss.	¥12	¥60	¥1,955	¥6,180	¥2,092	¥380	¥—	¥10,678
Goodwill								
Amortization.	—	35	44	1,354	316	32	—	1,782
Unamortized balance.	—	294	376	63	3,494	202	—	4,429
Negative goodwill								
Amortization.	—	308	33	—	60	28	—	429
Unamortized balance.	—	2,704	390	—	647	288	—	4,028

Year ended December 31, 2016	Millions of yen							
	Petrochemicals	Chemicals	Electronics	Inorganic	Aluminium	Others	Elimination	Total
Impairment loss.	¥31	¥210	¥6,401	¥133	¥8,569	¥299	¥—	¥15,644
Goodwill								
Amortization.	—	47	44	8	282	29	—	411
Unamortized balance.	—	232	332	55	3,006	175	—	3,801
Negative goodwill								
Amortization.	—	308	33	—	54	28	—	422
Unamortized balance.	—	2,396	358	—	593	259	—	3,606

Year ended December 31, 2016	Thousands of U.S. dollars							
	Petrochemicals	Chemicals	Electronics	Inorganic	Aluminium	Others	Elimination	Total
Impairment loss.	$266	$1,802	$54,949	$1,142	$73,562	$2,571	$—	$134,291
Goodwill								
Amortization.	—	405	380	72	2,419	251	—	3,528
Unamortized balance.	—	1,993	2,852	470	25,809	1,504	—	32,628
Negative goodwill								
Amortization.	—	2,643	279	—	460	243	—	3,626
Unamortized balance.	—	20,568	3,071	—	5,092	2,226	—	30,956