SHOWA DENKO K.K.

2/14/2018

2017 Consolidated Financial Results (Summary)

Ⅰ. Results for 2017

1. Summary

(Unit: billions of yen, except for "per share" indicators)

Items	2016 Jan.1 - Dec.31	2017 Jan.1 - Dec.31	Increase/ decrease
Net Sales	671.2	780.4	109.2
Operating Income	42.1	77.8	35.8
Net income attributable to owners of the parent	12.3	33.5	21.2
Net income attributable to owners of the parent per share	¥86.27	¥234.84	¥148.57
Stockholders' equity per share	¥2,080.85	¥2,445.01	¥364.16
End of term dividends per share ＊	-	¥50.00(planned)	-

SDK consolidated every ten shares of its common stock into one share on July 1, 2016. The above-mentioned "per share" indicators are calculated on the assumption that the share consolidation had been carried out at the beginning of 2016.
*SDK resolved payment of dividends of Yen 30 per share based on the record date of May 11, 2017 at the extraordinary general meeting of shareholders held on June 27, 2017, and paid dividends on the next day.

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

(Unit: billions of yen)

Segment		2016 Jan.1 - Dec.31	2017 Jan.1 - Dec.31	Increase/ decrease
Net Sales	Petrochemicals	185.8	251.1	65.3
	Chemicals	134.5	148.8	14.2
	Electronics	120.5	123.1	2.6
	Inorganics	50.9	73.4	22.6
	Aluminum	98.6	105.4	6.9
	Others	128.7	133.6	4.9
	Adjustments	-47.8	-55.1	-7.3
	Total	671.2	780.4	109.2
Operating Income	Petrochemicals	20.7	33.4	12.7
	Chemicals	13.8	16.5	2.7
	Electronics	15.0	21.9	6.9
	Inorganics	-5.8	7.1	12.8
	Aluminum	4.4	6.7	2.3
	Others	0.6	0.6	0.0
	Adjustments	-6.8	-8.4	-1.6
	Total	42.1	77.8	35.8

LIB materials business was transferred from the Others segment to the Electronics segment at the beginning of 2017. The above data are based on this new segmentation.

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

(Unit: billions of yen)

Segment		2017 CQ1 Jan.1 - Mar.31	2017 CQ2 Apr.1 - Jun.30	2017 CQ3 Jul.1 - Sept.30	2017 CQ4 Oct.1 - Dec.31
Net Sales	Petrochemicals	64.6	59.3	59.2	68.0
	Chemicals	33.3	36.8	38.4	40.2
	Electronics	29.7	33.3	32.3	27.8
	Inorganics	13.1	13.5	16.0	30.9
	Aluminum	23.6	27.3	26.4	28.2
	Others	32.0	33.0	33.0	35.6
	Adjustments	-13.1	-14.2	-13.8	-14.0
	Total	183.2	189.0	191.6	216.6
Operating Income	Petrochemicals	10.6	5.6	7.9	9.3
	Chemicals	3.1	3.8	4.4	5.2
	Electronics	6.0	6.1	6.3	3.5
	Inorganics	-0.1	0.2	2.3	4.7
	Aluminum	1.5	1.7	1.6	1.8
	Others	0.2	-0.1	0.4	0.2
	Adjustments	-1.7	-2.0	-2.0	-2.8
	Total	19.7	15.3	20.9	21.9

Ⅱ. Forecast for 2018

1. Summary

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

Items	2017	2018 Forecast	Increase/ decrease
Net Sales	780.4	900.0	119.6
Operating Income	77.8	110.0	32.2
Net income attributable to owners of the parent	33.5	65.0	31.5
Net income attributable to owners of the parent per share	¥234.84	¥456.05	¥221.21
End of term dividends per share ＊	¥50.00(planned)	¥70.00	-

*SDK paid dividends of Yen 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		2017	2018 Forecast	Increase/ decrease
Net Sales	Petrochemicals	251.1	235.0	-16.1
	Chemicals	148.8	154.0	5.2
	Electronics	123.1	116.0	-7.1
	Inorganics	73.4	193.0	119.6
	Aluminum	105.4	110.0	4.6
	Others	133.6	137.0	3.4
	Adjustments	-55.1	-45.0	10.1
	Total	780.4	900.0	119.6
Operating Income	Petrochemicals	33.4	19.0	-14.4
	Chemicals	16.5	17.0	0.5
	Electronics	21.9	16.0	-5.9
	Inorganics	7.1	60.0	52.9
	Aluminum	6.7	6.0	-0.7
	Others	0.6	0.0	-0.6
	Adjustments	-8.4	-8.0	0.4
	Total	77.8	110.0	32.2

(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:	2016	2017	Increase/ decrease	2018 Forecast	Increase/ decrease
Operating Activities	68.9	67.3	-1.7	100.0	32.7
Investing Activities	-53.8	-29.9	23.8	-70.0	-40.1
Free Cash Flow	15.2	37.4	22.2	30.0	-7.4
Financing Activities	-13.2	-18.4	-5.2	-27.6	-9.2
Newly Consolidated	-0.4	1.6	2.0	-0.1	-1.7
Net increase in Cash	1.6	20.6	19.1	2.3	-18.3

Ⅳ. Reference

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

Items	2016	2017	Increase/ decrease	2018 Forecast	Increase/ decrease
Capital expenditures	39.3	41.3	2.0	49.0	7.8
Depreciation and amortization	38.8	38.5	-0.3	40.4	2.0
R & D expenditures	17.3	18.5	1.2	20.8	2.2
Gap between interest expense and interest/dividend income	-1.6	-1.2	0.4	-1.6	-0.4
Total number of employees	10,146	10,864	718	10,874	10
Exchange rate (yen/US$)	108.8	112.2	Yen depriciated by 3.4	110.0	Yen appriciated by 2.2
Domestic naphtha price (yen/kl)	32,800	40,400	7,600	41,600	1,200
Interest-bearing debt	359.9	346.7	-13.2	335.0	-11.7
Total assets	932.7	1,024.7	92.0		

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 or market conditions for our products such as graphite electrodes and other commodities, and foreign exchange rates. We undertake no obligation to update the forward-looking statements unless required by law.

SHOWA DENKO K.K.

Consolidated Financial Statements

For the year ended December 31, 2017

Ⅰ. Consolidated Financial Results

Feb. 14th, 2018

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

(1) Results of operations:

	Results for the year ended December 31			
	2016	2017	Increase (Decrease)	2017
	¥	¥	%	$
Net sales	671,159	**780,387**	16.3	**6,906,077**
Operating income	42,053	**77,818**	85.0	**688,658**
Ordinary income	38,690	**63,962**	65.3	**566,032**
Net income attributable to owners of the parent	12,305	**33,470**	172.0	**296,198**
Net income attributable to owners of the parent per share: Basic	86.27	**234.84**	—	**2.08**
Net income attributable to owners of the parent per share: Diluted	—	—	—	—
	%	%		
Net income on equity	4.1	**10.4**		
Ordinary income on total assets	4.1	**6.5**		
Operating income to net sales	6.3	**10.0**		

SDK consolidated every ten shares of its common stock into one share on July 1, 2016. The above-mentioned "per share" indicators are calculated on the assumption that the share consolidation had been carried out at the beginning of 2016.

Notes

Important changes in accounting policies : not applicable

Comprehensive income:

Results for the year ended December 31,2017 ¥ 59,167 million

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

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

	Dec. 31, 2016	Dec. 31, 2017	Dec. 31, 2017
	¥	¥	$
Total assets	932,698	**1,024,727**	**9,068,380**
Total equity	311,231	**364,997**	**3,230,060**
Total equity per share	2,080.85	**2,445.01**	**21.64**
	%	%	%
Stockholders' equity ratio	31.8	**34.0**	**34.0**

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

	Results for the year ended December 31		
	2016	2017	2017
	¥	¥	$
Cash flows from operating activities	68,949	**67,284**	**595,432**
Cash flows from investing activities	(53,754)	**(29,914)**	**(264,729)**
Cash flows from financing activities	(13,220)	**(18,370)**	**(162,570)**
Cash and cash equivalents at end of the year	56,186	**76,833**	**679,942**

(4) Dividends:

(Record date)	2016	2017	2018 forecast
End of Q1 dividends per share (¥)	—	—	—
End of Q2 dividends per share (¥)	0.0	**0.0**	0.0
End of Q3 dividends per share (¥)	—	—	—
End of Term dividends per share (¥)	0.0	**50.0**	70.0
Total of dividend per share above (¥)	0.0	**50.0**	70.0
Total dividends (¥ in millions)	—	**11,425**	—
	%	%	%
Payout ratio (consolidated)	—	**34.1**	15.3
Net assets dividend yield (consolidated)	—	**3.5**	—

SDK resolved payment of dividends of ¥30 per share based on the record date of May 11, 2017 at the extraordinary general meeting of shareholders held on June 27, 2017, and paid dividends on the next day. "Total dividends" mentioned in the table above include this amount of dividends per share.

Ⅱ. Forecast of performance for the year ending December 31, 2018

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

	1st half		fiscal year	
	¥	$	¥	$
Net sales	417,000	3,690,265	900,000	7,964,602
Operating income	41,000	362,832	110,000	973,451
Ordinary income	39,000	345,133	106,000	938,053
Net income attributable to owners of the parent	23,000	203,540	65,000	575,221
Net income attributable to owners of the parent per share: Basic	161.37	1.43	456.05	4.04

※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 ¥113.00 throughout this statement for convenience only.

[Business Results and Financial Conditions]
1. Analysis of business results

(1) Summary
In 2017, the Japanese economy continued to recover gradually. Production maintained a high level due partly to the increase in export backed by strong overseas economy. Consumer spending also recovered gradually against the background of good employment situation. Corporate earnings improved due to stable yen-dollar exchange rate. As for overseas economies, the US economy continued to recover. The European economy recovered gradually. The economies of China and ASEAN countries showed signs of recovery. The economies of resource producing countries and emerging countries including Russia and Brazil bottomed out and showed improvement.

In the petrochemicals industry, domestic plants to produce ethylene and its derivatives maintained high operating rates due to heavy demand from East Asia including China. In the electronic parts/materials industry, production of parts/materials maintained high levels due to increasing production of semiconductors as a response to increasing demand for electronic devices including smartphones and industrial equipment.

Under these circumstances, the Showa Denko Group has been promoting its medium-term consolidated business plan “Project 2020+” since 2016. Under this 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 ¥780,387 million in 2017, up 16.3% from the previous year. Sales increased in all segments. In the Petrochemicals segment, sales increased due to rises in product prices and the consolidation of SunAllomer Ltd. in the second half of 2016. In the Inorganics segment, sales increased due to the increase in shipment volumes of graphite electrodes, an improvement in the conditions of the graphite electrode market in China in the second half of 2017, and the new consolidation of SHOWA DENKO CARBON Holding GmbH in the 4th quarter of 2017 following the acquisition and business integration of former SGL GE Holding GmbH, a graphite electrode manufacturer.

Operating income of the Group substantially increased by 85.0%, to ¥77,818 million. The Petrochemicals segment recorded higher income due to a strong market caused by a tight supply-demand balance in East Asia. The Inorganics segment also recorded higher income due to an increase in shipment volumes of graphite electrodes resulting from the business integration and the stiffening graphite electrode market in China, in addition to the effect of a reduction in the cost of graphite electrode production. Electronics, Chemicals, and Aluminum segments also recorded higher income.

The Group recorded ordinary income of ¥63,962 million, up 65.3%. Though the Group recorded a loss on investment to companies under the application of equity method with regard to P.T. Indonesia Chemical Alumina (ICA), the Group’s ordinary income considerably increased in the end.

The Group recorded net income attributable to owners of the parent of ¥33,470 million in 2017, up 172.0% from the previous year. The Group recorded extraordinary losses due to the posting of a loss on provision of allowance for doubtful accounts with regard to ICA and the cost of refurbishment to make effective use of Yokohama Plant. However, its net income attributable to owners of the parent significantly increased in the end.

(Unit: millions of yen)

	2016 Jan.-Dec.	2017 Jan.-Dec.	Increase/decrease
Sales	671,159	780,387	109,228
Operating income	42,053	77,818	35,765
Ordinary income	38,690	63,962	25,272
Net income attributable to owners of the parent	12,305	33,470	21,166

(2) A breakdown of net sales and operating income by segment (January 1 - December 31, 2017)

[Petrochemicals segment]
In the Petrochemicals segment, sales increased 35.2%, to ¥251,128 million. Production of ethylene increased from the previous year. Sales of olefins increased due to an increase in prices of products caused by a rise in raw naphtha price and the strong demand. Sales of organic chemicals increased due to higher shipment volumes and a rise in prices of products including ethyl acetate and vinyl acetate. Consolidation of SunAllomer Ltd. in the second half of 2016 also increased the sales of the segment. Operating income of the segment increased 61.2%, to ¥33,357 million.

(Unit: millions of yen)

	2016 Jan.-Dec.	2017 Jan.-Dec.	Increase/decrease
Sales	185,783	251,128	65,345
Operating income	20,690	33,357	12,667

[Chemicals segment]
In the Chemicals segment, sales increased 10.6%, to ¥148,758 million. Production of liquefied ammonia and high-purity gases for electronics increased from the previous year. In the basic chemicals business, sales of liquefied ammonia increased due to higher shipment volumes. Sales of chloroprene rubber increased due to high-level shipment volumes and strong market. Sales of acrylonitrile increased due to a rise in price. Sales of electronic chemicals increased due to higher shipment volumes of high-purity gases for electronics caused by an increase in production in the semiconductor and display panel industries. Sales of functional chemicals increased due to higher shipment volumes for use in the domestic automotive industry. However, sales of industrial gases slightly decreased. Operating income of the segment rose 19.2%, to ¥16,474 million.

(Unit: millions of yen)

	2016 Jan.-Dec.	2017 Jan.-Dec.	Increase/decrease
Sales	134,529	148,758	14,229
Operating income	13,824	16,474	2,650

[Electronics segment]
In the Electronics segment, sales increased 2.2%, to ¥123,064 million. Production of HD media in 2017 increased from the previous year due to an increase in shipment volumes of media for use in data centers. Thus sales of HD media increased. Sales of rare earth magnetic alloys and compound semiconductors increased from the previous year due to higher shipment volumes. Sales of lithium ion battery (LIB) materials, which was

transferred from the Others segment to the Electronics segment at the beginning of 2017, decreased due to lower shipment volumes to China caused by a change in subsidy policy for electric vehicles. Operating income of the segment increased 46.0%, to ¥21,925 million.

(Unit: millions of yen)

	2016 Jan.-Dec.	2017 Jan.-Dec.	Increase/decrease
Sales	120,461	123,064	2,602
Operating income	15,015	21,925	6,910

LIB materials business was transferred from the Others segment to the Electronics segment at the beginning of 2017. The above data for 2016 and 2017 are based on this new segmentation.

[Inorganics segment]
In the Inorganics segment, sales increased 44.4%, to ¥73,442 million. Production of graphite electrodes in 2017 increased from the previous year due to an improvement in the situation of the electric steel industry as the customer. Sales of graphite electrodes increased due to the acquisition and consolidation of SGL GE Holding GmbH (currently SHOWA DENKO CARBON Holding GmbH) in the 4th quarter of 2017, in addition to an increase in sales volumes and a rise in prices of graphite electrodes in Chinese market during the second half of 2017. Sales of ceramics increased due to an increase in shipment volumes for the electronics industry. The segment recorded operating income of ¥7,089 million, an improvement of ¥ 12,848 million, due mainly to the increase in operating income earned by graphite electrode business.

(Unit: millions of yen)

	2016 Jan.-Dec.	2017 Jan.-Dec.	Increase/decrease
Sales	50,870	73,442	22,572
Operating income	-5,758	7,089	12,848

[Aluminum segment]
In the Aluminum segment, sales increased 7.0%, to ¥105,439 million. Production of high-purity foil for aluminum electrolytic capacitors increased from the previous year. Shipment volumes and sales of rolled products increased due to higher shipment volumes of high-purity foil for aluminum electrolytic capacitors for use in industrial equipment and automotive applications. Sales of aluminum specialty components increased due partly to higher shipment volumes of large-sized aluminum extrusions and aluminum cylinders for use in laser-beam printers. Sales of aluminum cans increased due to higher shipment volumes recorded by Hanacans Joint Stock Company of Vietnam. Operating income of the segment increased 51.6%, to ¥6,697 million.

(Unit: millions of yen)

	2016 Jan.-Dec.	2017 Jan.-Dec.	Increase/decrease
Sales	98,575	105,439	6,864
Operating income	4,416	6,697	2,281

[Others segment]
In the Others segment, sales increased 3.8%, to ¥133,624 million. Shoko Co., Ltd.'s sales increased. Operating income of the segment increased 1.6%, to ¥633 million.

(Unit: millions of yen)

	2016 Jan.-Dec.	2017 Jan.-Dec.	Increase/decrease
Sales	128,740	133,624	4,884
Operating income	623	633	10

LIB materials business was transferred from the Others segment to the Electronics segment at the beginning of 2017. The above data for 2016 and 2017 are based on this new segmentation.

(3) Major steps taken or decided in 2017

[General]

- Delay in announcement of 2016 financial results and other related documents

SDK once postponed announcement of its consolidated financial results for the year ended in December 2016, and finally announced them on April 25, 2017. This delay was caused by the occurrence of necessity to investigate details of transactions between BE International Corporation (BE, a subsidiary of Shoko Co., Ltd.) and its specific customer. Shoko Co., Ltd. (Shoko) is a consolidated subsidiary of SDK.

In order to examine the issue from professional and objective point of view, Shoko established the Special Examination Committee including outside experts. On April 17, 2017, Shoko disclosed the results of the examination reported by the Committee. In the report, the Special Examination Committee concluded that the subject of the relevant transactions had no substance, no one among officers/employees of Shoko or BE had the perception that the subject of transactions had no substance, those transactions were only circulation of funds, and there was no similar transaction at Shoko or its subsidiaries.

SDK accordingly amended accounting of those transactions as normal commercial transactions which were posted as sales, submitted its annual securities report for the 108th business term and amended prior-year annual securities reports to Kanto Local Finance Bureau on April 25, 2017. On the same day, SDK also disclosed 2016 financial statements and amended prior-year financial statements.

Under these circumstances, SDK could not report its business report and consolidated financial statements for the fiscal year ended in December 2016 to the 108th ordinary general meeting of shareholders held on March 30, 2017, which was based on the record date of December 31, 2016, and decided to abandon payment of year-end dividend to shareholders. However, SDK had an extraordinary general meeting of shareholders on June 27, 2017 based on the record date of May 11, 2017, submitted business report, consolidated financial statements, and other related documents for the fiscal year ended in December 2016, and paid dividend of ¥30 per share.

Shoko submitted the “Report on the Reform Plan” on June 26, 2017 and the “Report on the State of the Implementation of the Reform Plan” on December 27, 2017, both of which had been required by the Tokyo Stock Exchange, and reported the details of the issue and the results of the special examination. Shoko will implement its plan for improvement including establishment of procedure for M&A, revision of its rules on credit management, and strengthening of the organization responsible for internal control and inspection, as scheduled in the Report on the Reform Plan.

SDK will give full support to Shoko’s implementation of the Reform Plan, recognize strengthening of group-wide risk management function as an urgent task, and further strengthen internal control of the Showa Denko Group.

- Received “2017 Top 100 Global Innovators” Award, 3 years in a row

In January 2018, SDK received “The Clarivate Analytics 2017 Top 100 Global Innovators” award. Clarivate Analytics, formerly the Intellectual Property & Science business of Thomson Reuters, selected the top 100 global innovation-leading companies and organizations by utilizing strict and objective data compiled from its value-added patent citation database which is the world’s largest one in this category, its intellectual property intelligence platform, and the company’s original basis for evaluation. In the screening process of the award, Clarivate Analytics used scientific and objective methodology involving four main criteria of “patent volume,” “application-to-grant success,” “globalization” and “citation influence.” The Showa Denko Group has designated its intellectual property strategy as an important part of its overall business strategies. The Group will continue its intellectual property strategy through close integration with business and R&D strategies.

- Incorporated into ESG indexes for investment

In July 2017, SDK was incorporated into three ESG indexes for investment: “FTSE Blossom Japan Index” provided by FTSE International Limited and Frank Russel Company (FTSE Russell, a member of London Stock Exchange Group); and “MSCI Japan ESG Select Leaders Index” and “MSCI Japan Empowering Women Index” provided by MSCI Incorporated (MSCI). FTSE Russell and MSCI are world-famous index providers, and ESG stands for “environmental, social and governance.” Government Pension Investment Fund (GPIF) of Japan has adopted these three ESG indexes as benchmarks to conduct full-scale ESG conscious investment. FTSE Blossom Japan Index is designed to provide market participants with a tool to identify and measure the performance of Japanese companies that demonstrate strong environmental, social and governance (ESG) practices. MSCI Japan ESG Select Leaders Index is constructed using the MSCI Japan IMI Top 500 Index (parent index) and targets best ESG performers among issues included in the parent index. MSCI Japan Empowering Women Index evaluates companies promoting and maintaining gender diversity. In addition to these three ESG indexes, SDK has been included in the “Morningstar Socially Responsible Investment (SRI) Index,” which is provided by Morningstar Japan K.K., for four consecutive years and the “SNAM Sustainability Index,” which is provided by Sompo Japan Nipponkoa Asset Management Co., Ltd., for six consecutive years.

- Acquired Highest-Level BCM Rating from DBJ again

SDK has acquired the highest-level rating from Development Bank of Japan Inc. (DBJ) for its efforts concerning disaster prevention and business continuity management (BCM). SDK acquired this rating for the second time in a row, following its first acquisition in 2012. SDK received a loan from DBJ based on this rating in December 2017. DBJ evaluates firms’ efforts to prepare disaster prevention plans and strengthen BCM, as a means for minimizing damage to business assets and for enabling business continuation and smooth rehabilitation. This time, SDK is awarded the highest-level BCM rating in recognition of various steps it has taken. These steps include continuous risk reduction through comprehensive risk evaluation each year, and preparation/renewal of business continuity plans considering characteristics of products and business. SDK has also been recognized for its close cooperation over many years with local governments in the area of disaster prevention. The Showa Denko Group will continue its efforts to establish a business system resistant to disaster at home and abroad, thereby contributing toward creating a society where affluence and sustainability are harmonized.

[Chemicals segment]

- Established a subsidiary to sell high-purity gases for electronics in the US

In July 2017, SDK established a wholly-owned subsidiary, "Showa Chemicals of America Inc." (SCA), in Austin, Texas, aiming to strengthen its sale of high-purity gases for electronics in the United States. American semiconductor manufacturers have 15-percent share of the global semiconductor production capacity. SDK established SCA in order to further expand its high-purity gas business in the US, strengthen relationship between SDK and major semiconductor manufacturers in the US, and gather information about state-of-the-art semiconductor-processing technologies. SCA will start sale of high-purity gases in 2018. SDK sells various high-purity gas products in many areas where manufacturers of semiconductors and display panels are located. SCA will function as the Showa Denko Group's base in the US to promote marketing, sale and distribution of high-purity gas products.

- Decided to found new liquefied CO_2 gas plant in Oita Petrochemical Complex

In August 2017, Showa Denko Gas Products Co., Ltd. (SGP), a consolidated subsidiary of SDK, decided to found a new plant to produce liquefied carbon dioxide (CO_2) gas in Oita Petrochemical Complex. The new plant will have annual production capacity of 15,000 tons, and the foundation of it is scheduled to be completed by the end of 2018. The supply-demand situation for liquefied CO_2 gas and dry ice is expected to be even tighter in the future. To cope with this problem and maintain stable supply of liquefied CO_2 gas and dry ice to our customers in Kyusyu, Chugoku, and Shikoku regions, SDK and SGP decided to found the new plant. SDK and SGP plan to make the new plant utilize stable CO_2 gas sources in the chemical plant of the Complex.

- Established fourth bulk molding compound plant in Asia

In September 2017, Showa Denko New Material (Zhuhai) Co., Ltd. (SDNZ), a consolidated subsidiary of SDK, had a ceremony for the completion of its new plant to produce thermosetting bulk molding compound (BMC) in Zhuhai, Guangdong Province, China. The Showa Denko Group formerly had BMC production bases at three locations, namely, in Japan, Shanghai and Thailand. The production base in Shanghai has been supplying BMC to customers mainly in East China, and has been operating at full capacity because sales of BMC in China have been rapidly increasing centering on the application for automobiles and home electrical appliances. The new plant of SDNZ will supply BMC to customers mainly in South China. SDK Group will make its BMC production system, which comprises four production bases located in Japan, Shanghai, Zhuhai and Thailand, ready to be operated at full capacity as soon as possible, and aggressively expand its functional chemicals business especially in China and ASEAN region where rapid growth of the market is expected.

[Electronics segment]

- Started shipment of 2.5-inch 1 TB HD media, best in class

In September 2017, SDK started shipment of 2.5-inch hard disk (HD) media with storage capacity of 1 terabyte (TB) per platter, which featured the world's highest storage capacity for this size available on the market[*1]. SDK's 2.5-inch 1 TB HD media, which use the ninth-generation perpendicular magnetic recording (PMR) technology, was adopted into Toshiba Electronic Devices & Storage Corporation's hard disk drive (HDD), "MQ04ABF100," for client. In December 2017, SDK also started shipment of 3.5-inch hard disk (HD) media for storage capacity of 1.5-1.8 terabyte (TB) per platter, which featured the world's highest storage capacity for this size available on the market[*2]. SDK's 3.5-inch 1.5-1.8 TB HD media, which use the ninth-generation perpendicular magnetic recording (PMR) technology, was adopted into Toshiba Electronic Devices &

Storage Corporation's hard disk drive (HDD) for near-line storage, "MG07ACA Series," which was the world's first[*3] HDD to achieve total storage capacity of 14 TB with Conventional Magnetic Recording (CMR)[*4]. In 2005, SDK became the world's first to manufacture and sell PMR-technology-based HD media, and now is the largest independent supplier of HD media. SDK will continue to strengthen its HD media business in accordance with the company's motto of "Best in Class."

*1: As of September 25, 2017, according to our research
*2: As of December 20, 2017, according to our research
*3: As of December 8, 2017
*4: Conventional Magnetic Recording (CMR): CMR HDD uses PMR-technology-based HD media and realizes high-density data recording without using Shingled Magnetic Recording (SMR) technology.

- Expanded lineup of infrared LEDs for high-output uses

In August 2017, SDK expanded its product lineup of infrared LED chips (IR-LEDs), which are mainly used as parts of photo-couplers for gate drivers in power semiconductor modules and parts of sensors for IoT-related devices. SDK's product lineup of IR-LEDs has three categories, namely, conventional LEDs made with Liquid Phase Epitaxy (LPE) method*[1], transparent type LEDs and reflection type LEDs made with Metal Organic Chemical Vapor Deposition (MOCVD) method*[2]. This time, SDK upgraded its technology to manufacture reflection type LEDs, and successfully added "Double Junction Reflection Type LED" and "P-up Reflection Type LED*[3]" to its product lineup of IR-LEDs. Double Junction Reflection Type LED realizes output nearly twice as much as that of conventional reflection type LED. It is suitable for uses that require high output LEDs such as biometric sensors, surveillance or security cameras, virtual reality, and sensors for automotive equipment. P-up Reflection Type LED is a product which realizes the P-up polarity structure in Reflection Type LED, where N-up structure manufactured through LPE method is the main stream. SDK developed this P-up Reflection Type LED in order to respond to the requests from customers who desire to develop high-power modules which are compatible with circuit designs for conventional P-up non-reflection type LEDs, which are manufactured through LPE method. The market for IR-LEDs is expected to expand concurrently with the expansion of IoT-related device market. SDK will continue to expand its lineup of LED products, and respond to the needs of the market.

*1: LPE method: Liquid Phase Epitaxy method. Under this crystal growth method, solid phase crystal crystalizes and grows on a substrate dipped into the solution of the target material. Due to the rapid growth of crystal, this method easily realizes thick film.
*2: MOCVD method: Metal Organic Chemical Vapor Deposition method. Under this crystal growth method, an organometallic compound is vaporized, and crystal of the target material grows on a substrate in the gas. Through proper control of the flow of the gas containing vaporized organometallic compound, you can form homogenous thin crystal efficiently.
*3: P-up: An LED chip consists of P-side electrode and N-side electrode. "P-up" indicates an LED chip with P-side electrode on the top.

[Inorganics segment]

- Completed acquisition of all shares in SGL GE, a graphite electrode production company

By late September 2017, SDK obtained approval from all required competition authorities for its acquisition of all shares in SGL GE Holding GmbH (SGL GE), a graphite electrode production company, from its parent company, SGL Carbon GmbH, which is a wholly owned subsidiary of SGL Carbon SE, a world carbon and graphite product manufacturer based in Germany. Effective on October 2, 2017, SDK completed acquisition of all shares in SGL GE and made it a wholly owned subsidiary of SDK. The acquired company's name was changed to "SHOWA DENKO CARBON Holding GmbH" as of the same date. Through the business integration of this time, SDK now has graphite electrode production bases in Europe and Southeast Asia, in addition to its existing bases in Japan, the US and China, and becomes the leading supplier in the global graphite electrode industry. SDK will strive to generate synergy as early as possible, pursue more cost effectiveness, and achieve further growth in a highly competitive market. On the other hand, effective on November 7, 2017, SDK completed transfer of former SGL GE's graphite electrode business in the US to Tokai Carbon Co., Ltd. This transfer was implemented in order to make the acquisition of former SGL GE in line with the condition given by the US competition authorities as a prerequisite to give approval to the acquisition.

- Decided to sell all of the shares SDK holds in ICA

ICA, in which SDK holds a 20% stake, operates an alumina plant located in Tayan District, West Kalimantan, Indonesia. SDK discussed about the way to manage the plant of ICA in the future with ANTAM, which is the parent company of ICA. However, there was still a great difference between the shareholders' opinions on new terms and conditions to revive ICA. Thus SDK judged it is difficult for the two parties to reach an agreement on this matter in the future. In consideration of these circumstances, at the meeting of the Board of Directors held in July 2017, SDK decided to report, in its financial statements for the second quarter of 2017, a loss on investment to companies under the application of equity method (non-operating cost) with regard to ICA, and an extraordinary loss on the whole amount of SDK's surety obligations and long term loans to ICA at the end of June 2017. SDK also decided to sell all of the shares SDK now holds in ICA to ANTAM or a third party, and has been negotiating this issue with ANTAM. With regard to our ceramics business in the future, we will focus on high value-added products including heavy duty grinding materials, filler for electronic parts, and titanium oxides for ceramic capacitors.

[Aluminum segment]

- Showa Aluminum Can decided to establish second production base in Vietnam

In February 2017, Showa Aluminum Can Corporation (SAC), a consolidated subsidiary of SDK, decided to establish its second base in Vietnam to produce aluminum cans, aiming to expand its business in that country. This new production base is to be located in Quang Nam Province, which occupies the mid-portion of Vietnam. Quang Nam Province is contiguous with Da Nang City, the largest city in the mid-portion of Vietnam. Many Vietnamese and foreign beverage manufacturers have decided to establish, or already established their factories in Quang Nam Province. At the new factory, SAC will install a line that can produce 700 million can bodies a year. In addition, synchronizing with this installation, SAC will install an additional line to produce can ends in Hanacans' existing factory in the suburbs of Hanoi in northern Vietnam. Through the installation of these new lines, Hanacans' capacity to produce can bodies and can ends in Vietnam will be expanded to that for 2 billion cans a year by October 2018. Since its acquisition of Hanacans, a can manufacturer of Vietnam, in May 2014, SAC has been introducing its leading-edge production technologies and quality control system into Hanacans, successfully expanding Hanacans' sales in Vietnam. SAC will pursue further expansion of its aluminum can business in Vietnam through quickly and timely offer of products which meet needs of the market.

- Established a new aluminum can JV in Thailand

SDK, Showa Aluminum Can Corporation (SAC), which is a consolidated subsidiary of SDK, and Carabao Group Public Company Limited (CBG), which is a beverage maker having second largest market share in the energy drink market of Thailand, established a joint corporation "Asia Can Manufacturing Company Limited" (ACM) to manufacture and sell aluminum cans in June 2017, and had a foundation stone-laying ceremony for its factory in July, 2017. ACM will have can production lines with a capacity to produce 1 billion can bodies per year. After the start-up of operations of the factory which is scheduled for October 2018, ACM will mainly manufacture aluminum cans for CBG's beverages for export from Thailand. Hanacans Joint Stock Company of Vietnam will have priority rights to supply ACM with can ends. CBG aims to expand its overseas sales, centering on Southeast Asian countries, China and the United Kingdom. ACM will support CBG's overseas operations through stable supply of high-quality aluminum cans manufactured by leading-edge technologies and quality management system built up by SAC over many years. ACM will be the Showa Denko Group's second overseas can production base following Hanacans Joint Stock Company of Vietnam. The Showa Denko Group has been promoting aluminum can business expansion strategy that targets Southeast Asia, and will utilize ACM's business development for the formation of its best marketing mix in Southeast Asia.

- Expanded high-purity aluminum foil plant in China

SDK increased the capacity of Showa Denko Aluminum (Nantong) Co., Ltd. (SDAN) to produce high-purity aluminum foil, which is a major material for aluminum electrolytic capacitors, from 600 tons per month to 800 tons per month in November 2017. In China, backed by increasing demand for solar batteries and industrial machines for automation, and also backed by rapid electrification of cars, the market for high capacitance and high strength aluminum foil produced by SDAN has been rapidly expanding. Aluminum electrolytic capacitors are used in wide areas such as electric appliances, IT devices, electric vehicles, hybrid cars and equipment for power generation utilizing renewable energy sources. The demand for aluminum electrolytic capacitors is expected to increase especially in the fields of environment and energy.

[Others Segment]

- Decided to expand capacity for producing high-grade SiC epitaxial wafers

SDK is now expanding 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), from current 3,000 wafers per month to 5,000 wafers per month*1 by April 2018. Moreover, in order to respond to a further increase in demand for HGE, SDK decided in January 2018 to re-expand that capacity. After the re-expansion work which is to be finished in September 2018, that capacity will be increased to 7,000 wafers per month. In HGE developed by SDK, the number of surface defects and basal plane dislocation (BPD)*2, which is typical crystal defect, is controlled to be within 0.1/cm^2. Since the launch in October 2015, HGE has been acclaimed by many device manufacturers at home and abroad, and adopted as a key component to produce SiC-MOSFET for practical use. SDK decided to re-expand its capacity to produce HGE because SDK's facilities to produce HGE are operating at full capacity these days and we expect that our HGE production facility after the first re-expansion work will soon achieve full-capacity operation by the middle of 2018 due to the take-off of the market for SiC-MOSFET. The size of the market for SiC epitaxial wafers for power devices is expected to reach ¥20 billion in 2020*3 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 1,200 V.

*2 Basal plane dislocation: Dislocation that occurs on a basal plane of a single crystal SiC.

*3 Estimated by SDK.

- Acquired assets concerning SiC for power devices from Nippon Steel & Sumitomo Metal Group

SDK acquired assets concerning Sublimation-recrystallization Method to manufacture silicon carbide (SiC) wafers from Nippon Steel & Sumitomo Metal Corporation and Nippon Steel & Sumikin Materials Co., Ltd. at the end of January 2018. Development of full-SiC-based power modules including MOSFET requires SiC wafers with fewer crystal defects and further cost reduction. This time, SDK aims to improve the quality of its SiC epitaxial wafers through the acquisition of SiC-wafer-related assets currently owned by Nippon Steel & Sumitomo Metal Group.

(4) Projections for 2018

a) Overall performance forecast

In 2018, the Japanese economy is expected to continue gradual recovery. While consumer spending is expected to show a steady change due to improvements in employment environment and personal income environment, export will remain strong, and production will show gradual increase. As for overseas economies, the US economy will continue to recover steadily due to the effect of a tax cut, though rises in interest rates are expected. As for the European economy, economies of major countries will show mild recovery. However, we have to pay close attention to the progress in the process of the United Kingdom's secession from the European Union. The Chinese economy will maintain rapid growth, though there may be a gradual slow down. The ASEAN economies are expected to show steady expansion.

There will be downward risk factors for the global economy such as the possible wide fluctuations in exchange rates and market prices of natural resources, the unforeseeable effect of US administration's policies on international trade, and the possible building up of geopolitical tensions. 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 2018 is as follows.

(Unit: millions of yen)

	Results for the term ended Dec. 31, 2017	Forecast for the term ending Dec.31, 2018	Increase/ decrease	Rate of change (%)
Net sales	780,387	900,000	119,613	15.3%
Operating income	77,818	110,000	32,182	41.4%
Ordinary income	63,962	106,000	42,038	65.7%
Net income attributable to owners of the parent	33,470	65,000	31,530	94.2%

The above forecast is based on the assumption that the exchange rates and the naphtha price will be ¥110.0/$, ¥130.0/€ and ¥41,600/KL for 2018, respectively.

b) Net sales and operating income by business segment

[Net sales]

(Unit: millions of yen)

	Results for the term ended Dec. 31, 2017	Forecast for the term ending Dec. 31, 2018	Increase/ decrease
Petrochemicals	251,128	235,000	-16,128
Chemicals	148,758	154,000	5,242
Electronics	123,064	116,000	-7,064
Inorganics	73,442	193,000	119,558
Aluminum	105,439	110,000	4,561
Others	133,624	137,000	3,376
Adjustments	-55,067	-45,000	10,067
Total	780,387	900,000	119,613

[Operating income]

(Unit: millions of yen)

	Results for the term ended Dec. 31, 2017	Forecast for the term ending Dec. 31, 2018	Increase/ decrease
Petrochemicals	33,357	19,000	-14,357
Chemicals	16,474	17,000	526
Electronics	21,925	16,000	-5,925
Inorganics	7,089	60,000	52,911
Aluminum	6,697	6,000	-697
Others	633	0	-633
Adjustments	-8,357	-8,000	357
Total	77,818	110,000	32,182

The above forecast is based on the information available as of February 14, 2018 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.

2. Financial conditions for the January 1 – December 31, 2017 period

a) Assets, liabilities and net assets

Total assets at the end of the year amounted to ¥1,024,727 million, an increase of ¥92,029 million from the level at December 31, 2016. Total assets increased due mainly to the increase in accounts receivable-trade, inventories, property, plant and equipment resulting from the integration of graphite electrode businesses of SDK and former SGL GE Holding GmbH. Interest-bearing debt decreased ¥13,203 million, to ¥346,726 million. However, total liabilities increased ¥38,263 million, to ¥659,730 million, due partly to the increase in accounts payable-trade. Net assets at the end of the year amounted to ¥364,997 million, up ¥53,766 million, due partly to the posting of net income attributable to owners of the parent.

b) Cash flows in 2017

Net cash provided by operating activities decreased ¥1,666 million from the previous year, to ¥67,284 million, due partly to the increase in working funds, despite the increase in operating income. Net cash used in investing activities decreased ¥23,840 million to ¥29,914 million, due partly to a decrease in time deposits and sales of investment securities. Thus, free cash flow ended up in the proceeds of ¥37,369 million, an improvement of ¥22,174 million. Net cash used in financing activities increased ¥5,151 million due to the reduction in interest-bearing debt, and ended up in the payment of ¥18,370 million. As a result, and due partly to the influence of exchange rate fluctuations, cash and cash equivalents at December 31, 2017 increased ¥20,648 million, to ¥76,833 million.

c) Projections for 2018

Cash flows from operating activities will increase. As for net cash used in investing activities, payment will increase from that in 2017. Thus, free cash flow in 2018 is expected to decrease by around ¥7,400 million from ¥37,369 million in 2017, to the proceeds of ¥30,000 million. Interest bearing debt at the end of the year will be ¥335,000 million, down around ¥11,700 million.

d) Trends in cash flow indexes

	2014	2015	2016	2017
Equity ratio	29.7%	31.5%	31.8%	34.0%
Equity ratio on a market value basis	21.1%	21.6%	25.6%	67.0%
Debt maturity (years)	5.7	6.0	5.2	5.2
Interest coverage ratio	15.6	14.9	21.4	23.8

[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. Management Policy

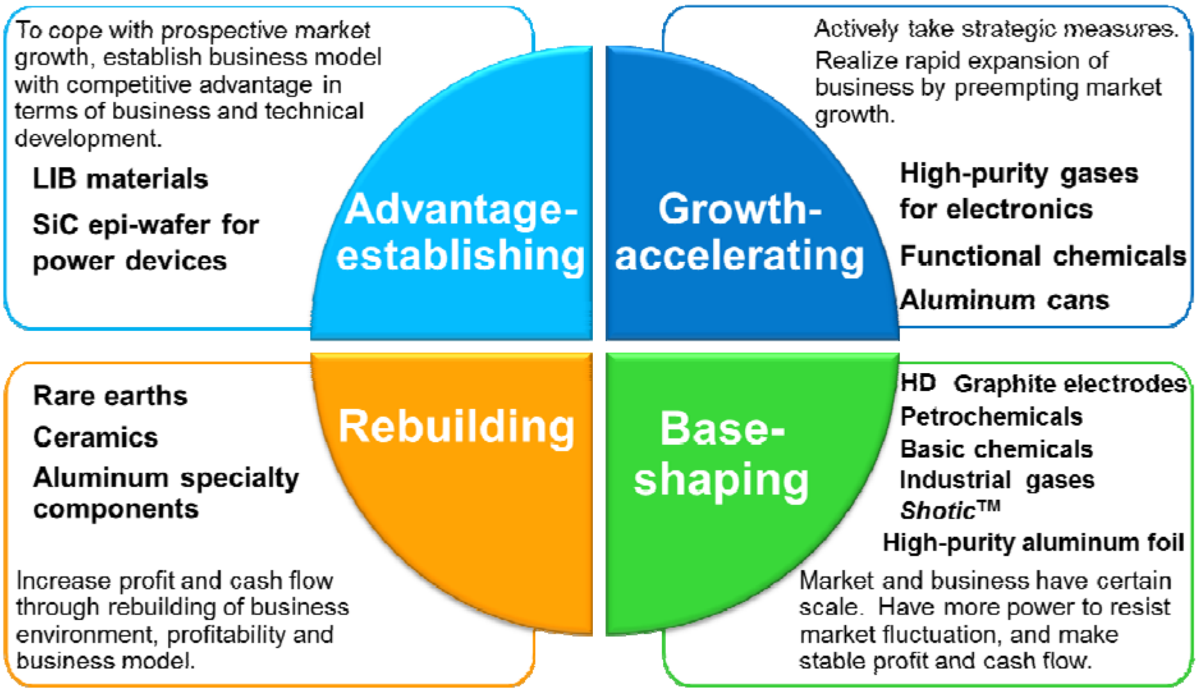
(1) Medium to long-term business strategy

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

In January 2016, The Showa Denko Group started its medium-term consolidated business plan “Project 2020+.” Under this 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.

(2) Financial goals

Under the 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

	2017 results	2018 forecast	*2018 targets
Net sales	¥780.4 billion	¥900 billion	¥855 billion
Operating income	¥77.8 billion	¥110 billion	¥57 billion
Operating income/Net sales	10.0%	12.2%	6.7%
FCF	¥37.4 billion	30 billion	**¥68 billion
ROA	8.0%	−	6.0%
ROE	10.4%	−	9.0%
D/E ratio (gross)	0.95 times	−	1.00 times

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

**Cumulative: 2016-2018

4. 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, 2016	Dec. 31, 2017	Dec. 31, 2017
Assets	¥	¥	$
Current assets			
Cash and deposits	69,914	77,248	683,613
Notes and accounts receivable-trade	143,816	176,021	1,557,704
Merchandise and finished goods	45,838	54,903	485,864
Work in process	8,576	15,829	140,082
Raw materials and supplies	36,933	44,181	390,980
Deferred tax assets	4,092	6,898	61,042
Other	26,606	33,111	293,019
Allowance for doubtful accounts	(699)	(2,849)	(25,216)
Total current assets	335,077	405,341	3,587,089
Noncurrent assets			
Property, plant and equipment			
Buildings and structures, net	77,446	85,547	757,050
Machinery, equipment and vehicles, net	110,213	151,634	1,341,896
Tools, furniture and fixtures, net	7,085	7,109	62,914
Land	242,816	245,062	2,168,689
Construction in progress	49,575	16,548	146,438
Total property, plant and equipment	487,135	505,900	4,476,988
Intangible assets			
Other	11,712	12,432	110,017
Total intangible assets	11,712	12,432	110,017
Investments and other assets			
Investment securities	74,951	89,167	789,091
Net defined benefit asset	365	232	2,053
Deferred tax assets	9,115	1,080	9,554
Other	23,150	20,805	184,115
Allowance for doubtful accounts	(8,807)	(10,229)	(90,526)
Total investments and other assets	98,775	101,054	894,287
Total noncurrent assets	597,621	619,386	5,481,291
Total assets	932,698	1,024,727	9,068,380
Liabilities			
Current liabilities			
Notes and accounts payable-trade	104,005	120,762	1,068,693
Short-term loans payable	66,895	86,699	767,251
Current portion of long-term loans payable	48,234	57,432	508,250
Commercial papers	5,000	5,000	44,248
Current portion of bonds	10,000	—	—
Accounts payable-other	53,790	67,287	595,458
Provision for repairs	38	4,143	36,661
Provision for bonuses	2,253	2,949	26,100
Provision for stock payment	25	5	47
Provision for business structure improvement	382	137	1,214
Provision for Niigata Minamata Disease	118	—	—
Other	20,053	29,251	258,860
Total current liabilities	310,792	373,666	3,306,781
Noncurrent liabilities			
Bonds payable	42,000	42,000	371,681
Long-term loans payable	187,800	155,594	1,376,941
Deferred tax liabilities	4,041	12,774	113,042
Deferred tax liabilities for land revaluation	33,144	32,488	287,507
Provision for repairs	2,759	117	1,035
Provision for director retirement	73	—	—
Provision for stock payment	59	96	852
Provision for business structure improvement	1,121	3,574	31,628
Provision for loss on guarantees	—	2,640	23,362
Net defined benefit liability	21,923	18,966	167,843
Other	17,754	17,814	157,646
Total noncurrent liabilities	310,675	286,064	2,531,539
Total liabilities	621,467	659,730	5,838,321
Net assets			
Shareholders' equity			
Capital stock	140,564	140,564	1,243,925
Capital surplus	62,033	61,663	545,691
Retained earnings	65,358	96,142	850,814
Treasury stock	(10,502)	(10,503)	(92,944)
Total shareholders' equity	257,453	287,866	2,547,486
Accumulated other comprehensive income			
Valuation difference on available-for-sale securities	4,519	16,547	146,433
Deferred gains or losses on hedges	320	3,781	33,464
Revaluation reserve for land	31,026	29,541	261,427
Foreign currency translation adjustment	14,239	15,452	136,747
Remeasurements of defined benefit plans	(10,996)	(4,716)	(41,732)
Total accumulated other comprehensive income	39,107	60,606	536,340
Non-controlling interests	14,671	16,524	146,234
Total net assets	311,231	364,997	3,230,060
Total liabilities and net assets	932,698	1,024,727	9,068,380

Consolidated Statements of Income

(¥ in millions, US$ in thousands)

	Results for the year ended Dec.31 2016 and 2017		
	2016	2017	2017
	¥	¥	$
Net sales	671,159	780,387	6,906,077
Cost of sales	544,994	602,778	5,334,317
Gross profit	126,164	177,609	1,571,760
Selling, general and administrative expenses	84,111	99,791	883,102
Operating income	42,053	77,818	688,658
Non-operating income			
Interest income	438	581	5,143
Dividends income	1,202	1,312	11,612
Equity in earnings of affiliates	4,328	—	—
Rent income on noncurrent assets	1,506	1,381	12,225
Miscellaneous income	1,531	1,166	10,320
Total non-operating income	9,006	4,441	39,300
Non-operating expenses			
Interest expenses	3,231	3,100	27,435
Equity in losses of affiliates	—	7,689	68,042
Foreign exchange losses	1,658	2,791	24,702
Miscellaneous expenses	7,480	4,717	41,747
Total non-operating expenses	12,369	18,298	161,926
Ordinary income	38,690	63,962	566,032
Extraordinary income			
Gain on sales of noncurrent assets	830	899	7,959
Gain on bargain purchase	686	3,115	27,571
Other	144	591	5,231
Total extraordinary income	1,659	4,606	40,761
Extraordinary loss			
Loss on sales and retirement of noncurrent assets	4,052	5,329	47,162
Impairment loss	15,644	7,204	63,753
Provision of allowance for doubtful accounts	—	2,648	23,433
Provision for business structure improvement	732	2,656	23,506
Provision for loss on guarantees	—	2,640	23,362
Other	2,393	1,474	13,045
Total extraordinary losses	22,821	21,952	194,262
Profit before income taxes	17,529	46,616	412,531
Income taxes	3,691	10,833	95,864
Net income	13,838	35,783	316,667
Net income attributable to non-controlling interests	1,533	2,313	20,469
Net income attributable to owners of the parent	12,305	33,470	296,198

Consolidated Statements of Comprehensive Income

(¥ in millions, US$ in thousands)

	Results for the year ended Dec.31 2016 and 2017		
	2016	2017	2017
	¥	¥	$
Profit	13,838	35,783	316,667
Other comprehensive income:			
Valuation difference on available-for-sale securities	516	12,133	107,369
Deferred gains or losses on hedges	629	3,479	30,791
Revaluation reserve for land	1,824	—	—
Foreign currency translation adjustments	(4,520)	1,455	12,878
Remeasurements of defined benefit plans, net of tax	(6,167)	6,294	55,700
Share of other comprehensive income of entities accounted for using equity method	41	22	197
Total other comprehensive income	(7,678)	23,384	206,937
Comprehensive income	6,160	59,167	523,604
(Comprehensive income attributable to)			
Comprehensive income attributable to owners of the parent	4,807	56,581	500,720
Comprehensive income attributable to non-controlling interests	1,353	2,586	22,884

Consolidated Statements of Changes in Net Assets

For the year ended December 31, 2016 (¥ 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, 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													-
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, 2017 (¥ 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, 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
Changes of items during the period													
Dividends from surplus			(4,285)		(4,285)								(4,285)
Net income			33,470		33,470								33,470
Purchase of treasury stock				(11)	(11)								(11)
Disposal of treasury stock		0		10	10								10
Increase by increase of consolidated subsidiaries			229		229								229
Decrease by increase of consolidated subsidiaries			(97)		(97)								(97)
Change in treasury shares of parent arising from transactions with non-controlling shareholders		(370)			(370)								(370)
Reversal of revaluation reserve for land			1,486		1,486								1,486
Others			(20)		(20)								(20)
Net changes of items other than shareholders' equity						12,028	3,461	(1,485)	1,214	6,281	21,499	1,854	23,353
Total changes of items during the period	-	(370)	30,784	(1)	30,413	12,028	3,461	(1,485)	1,214	6,281	21,499	1,854	53,766
Balance at December 31, 2017	140,564	61,663	96,142	(10,503)	287,866	16,547	3,781	29,541	15,452	(4,716)	60,606	16,524	364,997

For the year ended December 31, 2017 (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, 2016	1,243,925	548,968	578,390	(92,938)	2,278,344	39,987	2,835	274,565	126,006	(97,312)	346,080	129,831	2,754,256
Changes of items during the period													
Dividends from surplus			(37,916)		(37,916)								(37,916)
Net income			296,198		296,198								296,198
Purchase of treasury stock				(98)	(98)								(98)
Disposal of treasury stock		0		91	91								91
Increase by increase of consolidated subsidiaries			2,022		2,022								2,022
Decrease by increase of consolidated subsidiaries			(856)		(856)								(856)
Change in treasury shares of parent arising from transactions with non-controlling shareholders		(3,277)			(3,277)								(3,277)
Reversal of revaluation reserve for land			13,152		13,152								13,152
Others			(175)		(175)								(175)
Net changes of items other than shareholders' equity						106,446	30,629	(13,137)	10,741	55,580	190,259	16,403	206,663
Total changes of items during the period	-	(3,277)	272,425	(7)	269,141	106,446	30,629	(13,137)	10,741	55,580	190,259	16,403	475,804
Balance at December 31, 2017	1,243,925	545,691	850,814	(92,944)	2,547,486	146,433	33,464	261,427	136,747	(41,732)	536,340	146,234	3,230,060

Consolidated Statements of Cash Flows

(¥ in millions, US$ in thousands)

	Results for the year (Jan. 1-Dec. 31)		
	2016	2017	2017
	¥	¥	$
Net cash provided by (used in) operating activities			
Income before income taxes and minority interests	17,529	46,616	412,531
Depreciation and amortization	38,761	38,454	340,303
Impairment loss	15,644	7,204	63,753
Amortization of negative goodwill	(11)	(12)	(106)
Increase (decrease) in allowance for doubtful accounts	(6,441)	2,757	24,394
Increase (decrease) in provision for business structure improvement	954	2,106	18,633
Increase (decrease) in provision for loss on guarantees	-	2,640	23,362
Increase (decrease) in net defined benefit liability	6,744	(10,610)	(93,889)
Interest and dividends income	(1,641)	(1,893)	(16,755)
Interest expenses	3,231	3,100	27,435
Equity in (earnings) losses of affiliates	(4,328)	7,689	68,042
Loss (gain) on sales and valuation of investment securities	(6)	(358)	(3,165)
Loss on retirement of noncurrent assets	4,030	5,310	46,990
Loss (gain) on sales of noncurrent assets	(808)	(880)	(7,787)
Decrease (increase) in notes and accounts receivable-trade	(2,380)	(23,253)	(205,781)
Decrease (increase) in inventories	20,112	(12,005)	(106,235)
Increase (decrease) in notes and accounts payable-trade	(10,315)	10,172	90,021
Other, net	(10,998)	(2,657)	(23,511)
Subtotal	70,076	74,381	658,235
Interest and dividends income received	5,565	4,410	39,030
Interest expenses paid	(3,227)	(2,828)	(25,029)
Income taxes paid	(3,466)	(8,679)	(76,804)
Net cash provided by (used in) operating activities	68,949	67,284	595,432
Net cash provided by (used in) investing activities			
Payments into time deposits	(29,438)	(9,606)	(85,009)
Proceeds from withdrawal of time deposits	25,287	23,268	205,908
Purchase of property, plant and equipment	(38,317)	(38,872)	(343,999)
Proceeds from sales of property, plant and equipment	1,724	1,067	9,441
Purchase of investment securities	(3,163)	(1,646)	(14,565)
Proceeds from sales of investment securities	173	15,121	133,811
Purchase of investments in subsidiaries resulting in change in scope of consolidation	(2,132)	(14,910)	(131,945)
Net decrease (increase) in short-term loans receivable	(1,231)	(754)	(6,676)
Payments of long-term loans receivable	(4,077)	(1,045)	(9,252)
Collection of long-term loans receivable	322	609	5,386
Other, net	(2,903)	(3,145)	(27,830)
Net cash provided by (used in) investing activities	(53,754)	(29,914)	(264,729)
Net increase (decrease) in short-term loans payable	(242)	19,921	176,295
Net increase (decrease) in commercial papers	(7,000)	-	-
Proceeds from long-term loans payable	42,288	22,328	197,590
Repayment of long-term loans payable	(49,273)	(44,813)	(396,574)
Proceeds from issuance of bonds	17,000	-	-
Redemption of bonds	(10,000)	(10,000)	(88,496)
Cash dividends paid	(4,267)	(4,277)	(37,848)
Cash dividends paid to non controlling shareholders	(376)	(1,648)	(14,581)
Other, net	(1,350)	118	1,044
Net cash provided by (used in) financing activities	(13,220)	(18,370)	(162,570)
Effect of exchange rate change on cash and cash equivalents	(523)	953	8,434
Net increase (decrease) in cash and cash equivalents	1,453	19,952	176,567
Cash and cash equivalents at beginning of period	54,597	56,186	497,217
Increase in cash and cash equivalents from newly consolidated subsidiary	136	696	6,158
Cash and cash equivalents at end of period	56,186	76,833	679,942

SEGMENT INFORMATION

(a) The operations of the Companies for the year ended December 31, 2016 and 2017 were summarized by business segment as follows:

Year ended December 31, 2016	Millions of yen							
	Petrochemicals	Chemicals	Electronics	Inorganic	Aluminium	Others	Elimination	Consolidated
Sales								
Outside customers	¥180,178	¥118,433	¥115,748	¥43,776	¥90,715	¥122,309	¥—	¥671,159
Inter-segment	5,605	16,096	4,713	7,094	7,860	6,431	(47,800)	—
Total	185,783	134,529	120,461	50,870	98,575	128,740	(47,800)	¥671,159
Operating income (loss)	¥20,690	¥13,824	¥15,015	(¥5,758)	¥4,416	¥623	(¥6,758)	¥42,053
Assets	¥135,411	¥205,555	¥148,218	¥152,976	¥148,415	¥159,833	(¥17,710)	¥932,698
Depreciation	5,715	7,350	12,946	4,087	5,678	1,600	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	7,636	8,221	5,193	1,046	846	39,276

Year ended December 31, 2017	Millions of yen							
	Petrochemicals	Chemicals	Electronics	Inorganic	Aluminium	Others	Elimination	Consolidated
Sales								
Outside customers	¥240,685	¥131,540	¥120,593	¥65,199	¥96,827	¥125,544	¥—	¥780,387
Inter-segment	10,443	17,218	2,471	8,243	8,612	8,080	(55,067)	—
Total	251,128	148,758	123,064	73,442	105,439	133,624	(55,067)	780,387
Operating income (loss)	¥33,357	¥16,474	¥21,925	¥7,089	¥6,697	¥633	(¥8,357)	¥77,818
Assets	¥146,608	¥217,327	¥144,939	¥202,274	¥169,561	¥164,854	(¥20,836)	¥1,024,727
Depreciation	6,850	8,460	9,598	5,463	5,356	1,614	1,113	38,454
Amortization of (negative) goodwill	—	(260)	12	8	228	(0)	—	(12)
Investments in non-consolidated subsidiaries and affiliates	11,148	2,301	—	1,789	—	340	—	15,578
Capital expenditures	2,836	9,627	11,242	7,781	8,022	1,154	617	41,279

Year ended December 31, 2017	Thousands of U.S. dollars							
	Petrochemicals	Chemicals	Electronics	Inorganic	Aluminium	Others	Elimination	Consolidated
Sales								
Outside customers	$2,129,954	$1,164,069	$1,067,192	$576,981	$856,877	$1,111,005	$—	$6,906,077
Inter-segment	92,416	152,374	21,867	72,947	76,212	71,505	(487,322)	—
Total	2,222,369	1,316,443	1,089,059	649,928	933,089	1,182,511	(487,322)	6,906,077
Operating income (loss)	$295,192	$145,787	$194,030	$62,738	$59,263	$5,603	($73,954)	$688,658
Assets	$1,297,415	$1,923,249	$1,282,644	$1,790,034	$1,500,543	$1,458,886	($184,391)	$9,068,380
Depreciation	60,619	74,865	84,938	48,348	47,401	14,283	9,849	340,303
Amortization of (negative) goodwill	—	(2,304)	104	75	2,019	(0)	—	(106)
Investments in non-consolidated subsidiaries and affiliates	98,655	20,362	—	15,828	—	3,009	—	137,854
Capital expenditures	25,099	85,195	99,486	68,858	70,991	10,211	5,458	365,298

(b) The operations of the Companies for the year ended December 31, 2016 and 2017 were summarized by geographic area as follows:

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, 2017	Millions of yen			
	Japan	Asia	Others	Total
Sales	¥521,025	¥223,452	¥35,910	¥780,387
	Japan	Others	Total	
Tangible fixed assets	¥402,889	¥103,011	¥505,900	

Year ended December 31, 2017	Thousands of U.S. dollars			
	Japan	Asia	Others	Total
Sales	$4,610,838	$1,977,450	$317,788	$6,906,077
	Japan	Others	Total	
Tangible fixed assets	$3,565,388	$911,600	$4,476,988	

(c) The impairment loss and the (negative) goodwill of the Companies for the year ended December 31,2016 and 2017 were summarized by business segment as follows:

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, 2017	Millions of yen							
	Petrochemicals	Chemicals	Electronics	Inorganic	Aluminium	Others	Elimination	Total
Impairment loss.	¥289	¥649	¥3,945	¥2,312	¥2	¥7	¥—	¥7,204
Goodwill								
Amortization.	—	48	44	8	282	28	—	410
Unamortized balance.	—	186	288	46	2,660	148	—	3,328
Negative goodwill								
Amortization.	—	308	33	—	54	28	—	422
Unamortized balance.	—	2,088	325	—	540	231	—	3,184

Year ended December 31, 2017	Thousands of U.S. dollars							
	Petrochemicals	Chemicals	Electronics	Inorganic	Aluminium	Others	Elimination	Total
Impairment loss.	$2,562	$5,748	$34,908	$20,459	$14	$62	$—	$63,753
Goodwill								
Amortization.	—	421	392	75	2,494	250	—	3,632
Unamortized balance.	—	1,649	2,548	410	23,540	1,310	—	29,456
Negative goodwill								
Amortization.	—	2,725	288	—	475	250	—	3,738
Unamortized balance.	—	18,478	2,878	—	4,774	2,045	—	28,174