

2021 Consolidated Financial Results (Summary)

I. Results for 2021

1. Summary

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

Items	2020 Jan. 1 - Dec.31	2021 Jan. 1 - Dec.31	Increase/ decrease
Net sales	973.7	1,419.6	445.9
Operating income	(19.4)	87.2	106.6
Net income attributable to owners of the parent	(76.3)	(12.1)	64.2
Net income attributable to owners of the parent per share	(¥523.06)	(¥77.40)	¥445.66
Stockholders' equity per share	¥2,782.79	¥2,838.51	¥55.72
Annual dividend per share	¥65.00	¥65.00 (planned)	-

Showa Denko K.K. made Showa Denko Materials Co., Ltd. (Showa Denko Materials) a consolidated subsidiary, and started on July 1, 2020 to incorporate Showa Denko Materials' sales figures and incomes/losses into its consolidated financial statements.

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

(Unit: billions of yen)

Segment		2020 Jan. 1 - Dec.31	2021 Jan. 1 - Dec.31	Increase/ decrease
Petrochemicals	Net Sales	193.4	283.1	89.8
	Op. Income	4.9	20.7	15.8
Chemicals	Net Sales	155.8	186.9	31.1
	Op. Income	13.5	21.6	8.1
Electronics	Net Sales	97.4	120.9	23.5
	Op. Income	9.1	16.2	7.0
Inorganics	Net Sales	82.9	102.3	19.4
	Op. Income	(32.3)	14.4	46.7
Aluminum	Net Sales	80.2	76.2	(4.0)
	Op. Income	0.4	6.9	6.5
Showa Denko Materials	Net Sales	302.7	635.0	332.3
	Op. Income	(6.3)	20.3	26.6
Others	Net Sales	107.3	44.1	(63.2)
	Op. Income	1.2	(0.0)	(1.2)
Adjustments	Net Sales	(46.0)	(28.8)	17.2
	Op. Income	(10.0)	(12.8)	(2.8)
Total	Net Sales	973.7	1,419.6	445.9
	Op. Income	(19.4)	87.2	106.6

Showa Denko K.K. started on July 1, 2020 to incorporate Showa Denko Materials' sales figures and incomes/losses into its financial statements as "Showa Denko Materials segment."

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

(Unit: billions of yen)

Segment		2021 CQ1 Jan.1 - Mar.31	2021 CQ2 Apr.1 - Jun.30	2021 CQ3 Jul.1 - Sept.30	2021 CQ4 Oct.1 - Dec.31
Petrochemicals	Net Sales	57.8	69.5	74.4	81.5
	Op. Income	5.5	6.2	5.5	3.5
Chemicals	Net Sales	41.3	45.4	48.9	51.3
	Op. Income	4.9	5.8	5.8	5.2
Electronics	Net Sales	21.7	27.7	33.9	37.6
	Op. Income	1.4	3.8	4.3	6.7
Inorganics	Net Sales	21.2	25.2	25.8	30.1
	Op. Income	1.0	5.3	5.6	2.5
Aluminum	Net Sales	22.5	25.2	13.9	14.5
	Op. Income	2.3	3.3	0.8	0.4
Showa Denko Materials	Net Sales	159.6	160.6	161.4	153.5
	Op. Income	7.6	5.0	6.0	1.7
Others	Net Sales	28.2	5.5	5.2	5.2
	Op. Income	0.2	(0.1)	(0.1)	(0.1)
Adjustments	Net Sales	(12.5)	(5.3)	(5.3)	(5.7)
	Op. Income	(2.0)	(2.5)	(3.6)	(4.7)
Total	Net Sales	339.7	353.7	358.3	367.9
	Op. Income	20.8	26.8	24.4	15.3

II. Forecast for 2022

1. Summary

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

Items	2021	2022 Forecast	Increase/ decrease
Net sales	1,419.6	1,350.0	(69.6)
Operating income	87.2	84.0	(3.2)
Net income attributable to owners of the parent	(12.1)	27.0	39.1
Net income attributable to owners of the parent per share	(¥77.40)	¥149.11	¥226.51
End of term dividends per share	¥65.00 (planned)	¥65.00	-

2. Net sales and Operating income by Segment

(Unit: billions of yen)

Segment		2021	2022 Forecast	Increase/ decrease
Petrochemicals	Net Sales	283.1	270.0	(13.1)
	Op. Income	20.7	2.5	(18.2)
Chemicals	Net Sales	186.9	195.0	8.1
	Op. Income	21.6	21.0	(0.6)
Electronics	Net Sales	120.9	140.0	19.1
	Op. Income	16.2	20.0	3.8
Inorganics	Net Sales	102.3	145.0	42.7
	Op. Income	14.4	27.5	13.1
Aluminum	Net Sales	76.2	38.0	(38.2)
	Op. Income	6.9	3.0	(3.9)
Showa Denko Materials	Net Sales	635.0	550.0	(85.0)
	Op. Income	20.3	25.0	4.7
Others	Net Sales	44.1	23.0	(21.1)
	Op. Income	(0.0)	0.4	0.4
Adjustments	Net Sales	(28.8)	(11.0)	17.8
	Op. Income	(12.8)	(15.4)	(2.6)
Total	Net Sales	1,419.6	1,350.0	(69.6)
	Op. Income	87.2	84.0	(3.2)



2022 Forecast in New Segmentation	
430.0	Semiconductor and Electronic Materials
53.0	
190.0	Mobility
6.0	
140.0	Innovation Enabling Materials
13.0	
480.0	Chemicals
34.0	
121.0	Others
1.0	
(11.0)	Adjustments
(23.0)	
1,350.0	Total
84.0	

III. Cash flow

(Unit: billions of yen)

Cash flows from:	2020	2021	Increase/ decrease	2022 Forecast	Increase/ decrease
Operating activities	109.3	115.3	6.0	140.0	24.7
Investing activities	(930.0)	28.6	958.7	(135.0)	(163.6)
Free cash flow	(820.8)	143.9	964.7	5.0	(138.9)
Financing activities	896.5	(121.7)	(1,018.3)	(90.0)	31.7
Other	0.4	14.6	14.2	0.0	(14.6)
Net increase in cash	76.2	36.8	(39.4)	(85.0)	(121.8)

IV. Reference

(Unit: billions of yen, except for Total number of employees, Exchange rate, and Domestic naphtha price)

Items	2020	2021	Increase/ decrease	2022 Forecast	Increase/ decrease
Capital expenditures	69.1	78.6	9.6	133.5	54.8
Depreciation and amortization	60.6	81.9	21.3	77.5	(4.3)
R&D expenditures	34.4	46.8	12.4	48.1	1.4
Gap between interest expense and interest & dividend income	(4.6)	(7.7)	(3.2)	(6.0)	1.8
Total number of employees	33,684	26,054	(7,630)	26,586	532
Exchange rate (yen/US\$)	106.8	109.8	Yen depreciated by 3.0	110.0	Yen depreciated by 0.2
Domestic naphtha price (yen/kl)	32,800	50,200	17,400	51,600	1,400
Interest-bearing debt	1,060.1	850.6	(209.5)	800.0	(50.6)
Total assets	2,203.6	2,142.4	(61.2)		

Showa Denko K.K. made Showa Denko Materials a consolidated subsidiary, considered June 30, 2020 as acquisition date, and started to incorporate Showa Denko Materials' financial results into its financial statements.

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 influence of the coronavirus disease 2019 (COVID-19) on the world economy, 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.

Consolidated Financial Statements

For the year ended December 31, 2021



I . Consolidated Financial Results

Feb. 14th, 2022

(1) Results of operations:

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

	Results for the year ended December 31			
	2020	2021	Increase (Decrease)	2021
	¥	¥	%	\$
Net sales	973,700	1,419,635	45.8	12,342,508
Operating income	(19,449)	87,198	—	758,112
Ordinary income	(43,971)	86,861	—	755,182
Net income attributable to owners of the parent	(76,304)	(12,094)	—	(105,146)
Net income attributable to owners of the parent per share: Basic	(523.06)	(77.40)	—	(0.67)
Net income attributable to owners of the parent per share: Diluted	—	—	—	—
	%	%		
Net income on equity	(16.9)	(2.6)		
Ordinary income on total assets	(2.7)	4.0		
Operating income to net sales	(2.0)	6.1		

Showa Denko K.K. made Showa Denko Materials Co., Ltd. (Showa Denko Materials) a consolidated subsidiary, and started on July 1, 2020 to incorporate Showa Denko Materials' sales figures and incomes/losses into its consolidated financial statements.

Notes

Important changes in accounting policies : not applicable

Comprehensive income:

Results for the year ended December 31, 2021

¥50,925 million

Results for the year ended December 31, 2020

(¥70,188) million

(2) Financial position:

(¥ in millions, US\$ in thousands, except for total equity per share)

	Dec. 31, 2020	Dec. 31, 2021	Dec. 31, 2021
	¥	¥	\$
Total assets	2,203,606	2,142,390	18,626,235
Total equity	718,080	818,452	7,115,738
Total equity per share	2,782.79	2,838.51	24.68
	%	%	%
Stockholders' equity ratio	18.4	24.0	24.0

(3) Cash flows:

(¥ in millions, US\$ in thousands)

	Results for the year ended December 31		
	2020	2021	2021
	¥	¥	\$
Cash flows from operating activities	109,286	115,283	1,002,289
Cash flows from investing activities	(930,047)	28,606	248,704
Cash flows from financing activities	896,521	(121,741)	(1,058,437)
Cash and cash equivalents at end of the year	197,928	234,938	2,042,585

(4) Dividends:

	2020	2021	2022forecast
End of Q1 dividends per share (¥)	—	—	—
End of Q2 dividends per share (¥)	0	0	0
End of Q3 dividends per share (¥)	—	—	—
End of Term dividends per share (¥)	65.0	65.0	65.0
Total of dividend per share above (¥)	65.0	65.0	65.0
Total dividends (¥ in millions)	9,500	11,788	0
	%	%	%
Payout ratio (consolidated)	—	—	43.6
Net assets dividend yield (consolidated)	2.1	2.3	—

II . Forecast of performance for the year ending December 31, 2022

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

	1st half		fiscal year	
	¥	\$	¥	\$
Net sales	640,000	5,564,250	1,350,000	11,737,089
Operating income	29,000	252,130	84,000	730,308
Ordinary income	27,000	234,742	79,000	686,837
Net income attributable to owners of the parent	6,000	52,165	27,000	234,742
Net income attributable to owners of the parent per share: Basic	33.14	0.29	149.11	1.30

※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

Yen amounts have been translated into U.S.dollars for convenience only, at the rate of ¥115.02 to US\$1.00, the approximate rate of exchange as of December 31, 2021.

[Business Results and Financial Conditions]

1. Analysis of business results

(1) Summary

With regard to the global economy in 2021, although it was stagnant due to the global restraint on economic activities caused by the pandemic of coronavirus disease 2019 (COVID-19), there was a sign of recovery. Manufacturing industries including the semiconductor-related industry, whose market remained strong, were in the process of recovery. As for the Japanese economy, consumer spending showed sign of recovery. There was also a sign of recovery in the corporate business sentiment due to an increase in export and business recovery centering on manufacturing industries.

The Showa Denko Group has been giving the highest priority to all stakeholders' safety and health including that of our customers, business acquaintances and employees, and implementing various measures to prevent further spread of COVID-19. To be specific, we are taking various measures including companywide introduction of teleworking. Especially in the head office, through thoroughgoing improvement in business process, the ratio of teleworking has been maintained at the level exceeding the target required by the Japanese government. The Group continues implementing measures which give highest priority to the security of employees' safety and prevention of infection of COVID-19, including grant of special leave when infection is suspected, restrictions on overseas and domestic business trip, and faithful practice of off-peak commuting through introduction of complete flextime. At the same time, in our production bases, we are making utmost efforts to fulfill our corporate social responsibility to continue providing our customers with products essential for infrastructural functions of society.

In 2021, the Group recorded consolidated net sales of ¥1,419,635 million, up 45.8% from the previous year. The sales in the Others segment significantly decreased due to unconsolidation of SHOKO CO., LTD. resulting from transfer of shares in the company. The sales in the Aluminum segment also decreased due to the transfer of rolled aluminum products business and aluminum can business. However, the sales in the Petrochemicals segment increased due to a recovery in market prices of products. The sales in the Chemicals, the Electronics, and the Inorganics segments also increased due to a recovery in sales volumes from those in the previous year in which the spread of COVID-19 significantly depressed the sales. New consolidation of the Showa Denko Materials segment throughout the year also increased net sales of the Group. Operating income of the Group in 2021 significantly increased ¥106,647 million, to ¥87,198 million. Operating income in each segment was negatively affected by decrease in production of cars caused by short supply of semiconductors and a rise in raw material prices. Operating income in the Others segment decreased due to unconsolidation of SHOKO CO., LTD. However, operating income in the Petrochemicals segment increased due mainly to significant improvement in the naphtha factor. Operating income in the Inorganics segment increased due mainly to a significant increase in shipment volumes of graphite electrodes caused by a recovery of the demand for steel. Year-round consolidation of the Showa Denko Materials segment also increased operating income of the Group. Operating income in the Chemicals, Electronics, and Aluminum segments also increased due mainly to realization of effects of various measures to improve profitability. Ordinary income of the Group increased ¥130,832 million, to ¥86,861 million due mainly to non-incurrence of the temporary cost of acquisition of shares in former Hitachi Chemical Company, Ltd., which took place in 2020, and increases in foreign exchange gain and equity in earnings of affiliates, despite an increase in interest expenses as a part of extraordinary loss.

The Group recorded net loss attributable to owners of the parent of ¥12,094 million in 2021, a significant improvement of ¥64,210 million from the previous year. We recorded extraordinary losses resulting from an expenditure to cover the cost of structural reform related to the transfer of energy storage devices and systems business amounting to ¥30,100 million, and an expenditure for execution of environmental measures in a production base of aluminum specialty components business amounting to ¥9,000 million.

(Unit: millions of yen)

	2020 Jan.-Dec.	2021 Jan.-Dec.	Increase/ decrease
Sales	973,700	1,419,635	445,935
Operating income	(19,449)	87,198	106,647
Ordinary income	(43,971)	86,861	130,832
Net income attributable to owners of the parent	(76,304)	(12,094)	64,210

(2) A breakdown of net sales and operating income by segment (January 1 – December 31, 2021)

[Petrochemicals segment]

In the Petrochemicals segment, sales increased 46.4%, to ¥283,145 million. In our olefin business, sales increased due to an improvement in supply-demand balance in East Asia resulting from recovery of demand in China and a rise in prices of products including ethylene and propylene resulting from a rise in prices of raw materials. Sales of organic chemicals increased due to a rise in sales volumes of ethyl acetate and vinyl acetate as a result of rebound from the periodic shutdown maintenance of facilities to produce these products that took place in the first quarter of 2020, in addition to the effect of a significant rise in market prices of organic chemicals. As a result, the Petrochemicals segment recorded an operating income of ¥20,701 million, a significant increase of 320.2% from the previous year, due to a significant improvement in the raw naphtha price factor and a rise in market prices of products.

(Unit: millions of yen)

	2020 Jan.-Dec.	2021 Jan.-Dec.	Increase/ decrease
Sales	193,385	283,145	89,760
Operating income	4,927	20,701	15,774

[Chemicals segment]

In the Chemicals segment, sales increased 20.0% from the previous year, to ¥186,873 million. Sales of basic chemicals increased. Sales of liquefied ammonia increased due to an increase in shipment volumes. Sales of acrylonitrile increased due to tight supply-demand balance resulting from the impact of a hurricane in the US, a significant rise in product prices resulting from a substantial rise in raw material and fuel prices, and an increase in shipment volumes of products. Sales of chloroprene rubber increased due to an increase in export volumes. Sales of electronic chemicals increased due to an increase in shipment volumes of products to respond to the demand from the booming semiconductor industry. Sales of functional chemicals increased due to an increase in shipment volumes for Japanese market and export, despite the recent influence of a rise in prices of raw materials and a decrease in production of cars. Sales of industrial gases and coating materials increased due to an increase in shipment volumes. Operating income of the segment increased 60.2%, to ¥21,597 million.

(Unit: millions of yen)

	2020 Jan.-Dec.	2021 Jan.-Dec.	Increase/ decrease
Sales	155,769	186,873	31,104
Operating income	13,481	21,597	8,116

[Electronics segment]

In the Electronics segment, sales increased 24.1% from the previous year, to ¥120,868 million. Sales of HD media increased due to an increase in shipment volumes of HD media for use in data centers and PCs. Sales of compound semiconductors increased due to an increase in export. Sales of lithium-ion battery (LIB) materials increased due to an increase in sales volumes of Showa Denko Packaging's aluminum laminate film (SPALF™) used as packaging material for LIBs built into cars, PCs, and mobile devices. As for SiC epitaxial wafers business, sales increased due to an increase in sales volumes resulting from an increase in demand and a start of long-term contracts to supply SiC epitaxial wafers to plural power semiconductor-device manufacturers. Operating income of the segment increased 76.9%, to ¥16,153 million.

(Unit: millions of yen)

	2020 Jan.-Dec.	2021 Jan.-Dec.	Increase/ decrease
Sales	97,415	120,868	23,453
Operating income	9,133	16,153	7,020

[Inorganics segment]

In the Inorganics segment, sales increased 23.4% from the previous year, to ¥102,300 million. Sales of graphite electrodes increased due to an increase in sales volumes caused by an increase in the global demand for steel, which started in the second half of 2020. Sales of ceramics increased due to an increase in sales volumes of abrasives and fine ceramics for electronics. Operating income of the segment significantly increased to ¥14,412 million, a major increase of ¥46,712 million from the previous year due partly to a rebound from application of lower-of-cost-or-market method to inventory in the previous year.

(Unit: millions of yen)

	2020 Jan.-Dec.	2021 Jan.-Dec.	Increase/ decrease
Sales	82,899	102,300	19,401
Operating income	(32,300)	14,412	46,712

[Aluminum segment]

In the Aluminum segment, sales decreased 5.0% from the previous year, to ¥76,179 million. Sales of aluminum specialty components increased due to an increase in demand for our products for use in automotive parts, machine tools, and office automation equipment. Sales of rolled products and aluminum cans decreased due to the transfer of these businesses in 2021. Operating income of the segment increased ¥6,481 million from the previous year, to ¥6,902 million.

(Unit: millions of yen)

	2020 Jan.-Dec.	2021 Jan.-Dec.	Increase/ decrease
Sales	80,185	76,179	(4,006)
Operating income	421	6,902	6,481

[Showa Denko Materials segment]

We started to consolidate Showa Denko Materials Co., Ltd. and its subsidiaries in the second quarter of 2020, and therefore, we created a new segment for reporting, and started to incorporate sales figures and operating income of the new segment into SDK's consolidated financial statements at the beginning of the third quarter of 2020. The Showa Denko Materials segment recorded net sales of ¥635,033 million in 2021, an increase of 109.8% from the previous year. Sales of electronic materials including polishing materials for flattening semiconductor circuits (CMP slurry) and materials for circuit boards including copper clad laminates remained strong due mainly to the strong demand for semiconductors. The sales of mobility components including molded resins recovered from the level of the previous year in which there was a negative influence of the spread of COVID-19. However, in the second half of 2021, the sales of mobility components was negatively affected by a decrease in production of cars due to recent short supply of semiconductors. As a result, the segment recorded operating income of ¥20,316 million, an increase of ¥26,619 million from the previous year. Operating income of this segment includes amortization of the goodwill of the former Hitachi Chemical which was reckoned up as a result of acquisition of shares in former Hitachi Chemical and other losses amounting to about ¥33,400 million.

(Unit: millions of yen)

	2020 Jan.-Dec.	2021 Jan.-Dec.	Increase/ decrease
Sales	302,742	635,033	332,291
Operating income	(6,303)	20,316	26,619

[Others segment]

In the Others segment, sales significantly decreased 58.9% from the previous year, to ¥44,059 million due mainly to the unconsolidation of SHOKO CO., LTD. resulting from the transfer of SDK's shares in SHOKO CO., LTD. which took place in the second quarter of 2021. Operating income of the segment decreased by ¥1,237 million, to be an operating loss of ¥38 million.

(Unit: millions of yen)

	2020 Jan.-Dec.	2021 Jan.-Dec.	Increase/ decrease
Sales	107,301	44,059	(63,242)
Operating income	1,199	(38)	(1,237)

(3) Projections for 2022

a) Overall performance forecast

In 2022, global economy is expected to continue to be in difficult conditions due to the quick spread of COVID-19 caused by new variants of virus. It is expected that disorder in supply chain, high energy-source prices, and tight supply-demand situation in the global semiconductor market will continue to have negative impact on the performance of the manufacturing industry, centering on the car-manufacturing-related industry.

Under these circumstances, the Showa Denko Group will continue to invest in plants and equipment of our Core Growth businesses including semiconductor materials business to meet continued strong demand for semiconductor materials caused by the strong demand for semiconductors. For 2022, we expect that the Group's net sales and operating income will slightly decrease due mainly to the restructuring of our business portfolio through sale of several businesses that we promoted in 2021. However, for 2022, we expect that the Group's net sales to be recorded by retained businesses

excepting the effect of the sale of several businesses will increase ¥90,700 million, and the Group's retained businesses' operating income will increase ¥10,300 million. We also expect to have significant decrease in extraordinary loss in 2022. Thus, we expect that net income attributable to owners of the parent for 2022 will increase ¥39,100 million.

The Group's performance forecast for 2022 is as follows.

(Unit: millions of yen)				
	Results for the term ended on Dec. 31, 2021	Forecast for the term ending on Dec.31, 2022	Increase/decrease	Rate of change (%)
Net sales	1,419,635	1,350,000	(69,635)	(4.9%)
Operating income	87,198	84,000	(3,198)	(3.7%)
Ordinary income	86,861	79,000	(7,861)	(9.1%)
Net income attributable to owners of the parent	(12,094)	27,000	39,094	—

The above forecast is based on the assumption that the exchange rates and the naphtha price will be ¥110.0/\$, ¥130.0/€ and ¥51,600/KL for 2022, respectively.

b) Net sales and operating income by business segment

From the year ending in December 2022, we introduce new segments for information disclosure, which is in line with the new management system.

[New segments]		(Unit: millions of yen)
		Forecast for the term ending on Dec.31, 2022
Semiconductor and Electronic Materials	Net sales	430,000
	Operating income	53,000
Mobility	Net sales	190,000
	Operating income	6,000
Innovation Enabling Materials	Net sales	140,000
	Operating income	13,000
Chemicals	Net sales	480,000
	Operating income	34,000
Others	Net sales	121,000
	Operating income	1,000
Adjustments	Net sales	(11,000)
	Operating income	(23,000)
Total	Net sales	1,350,000
	Operating income	84,000

The above forecast is based on the information available as of February 14, 2022 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.

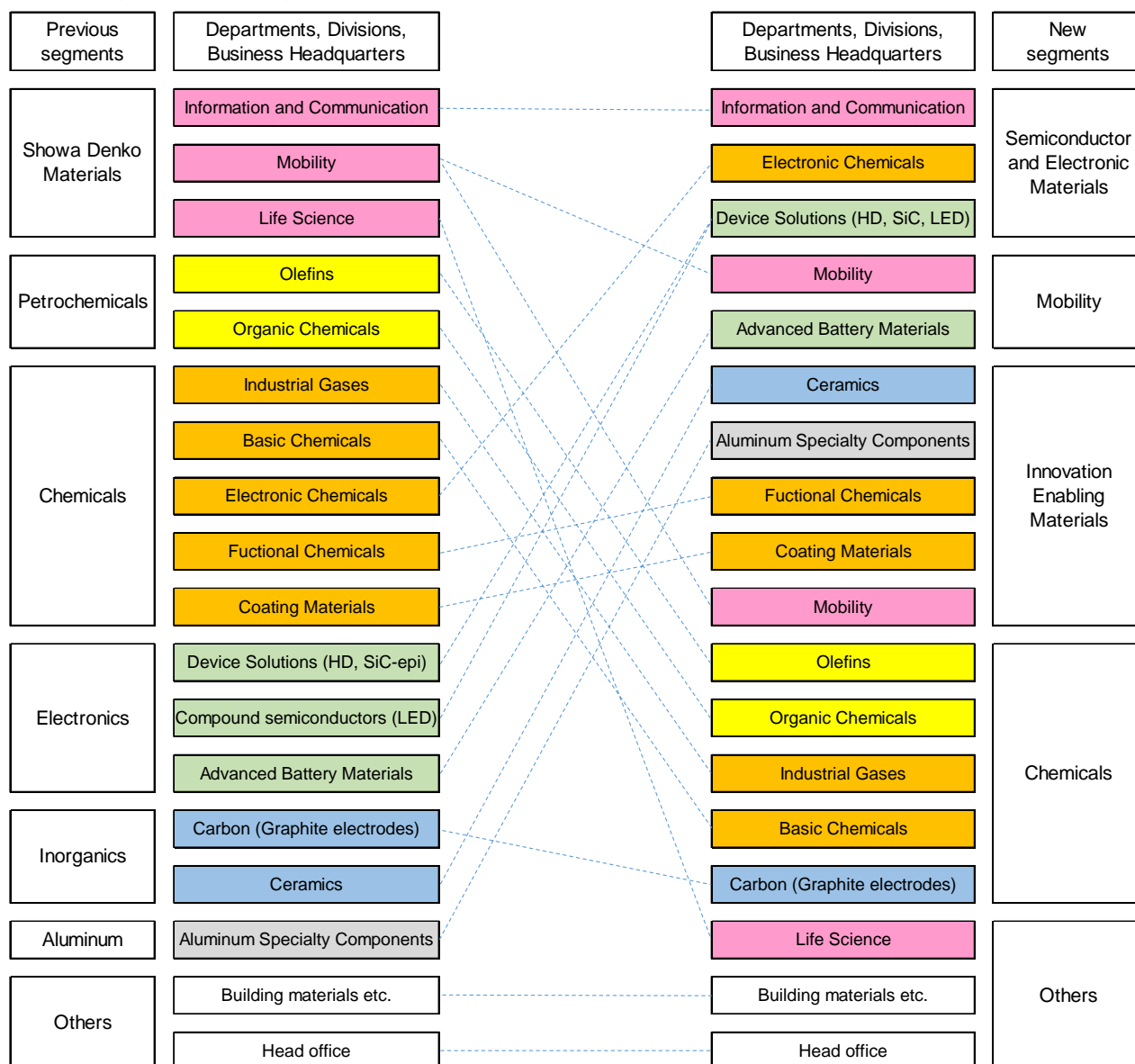
Reference

[Previous segments]

(Unit: millions of yen)

		Results for the term ended on Dec. 31, 2021	Forecast for the term ending on Dec.31, 2022	Increase/ decrease
Petrochemicals	Net sales	283,145	270,000	(13,145)
	Operating income	20,701	2,500	(18,201)
Chemicals	Net sales	186,873	195,000	8,127
	Operating income	21,597	21,000	(597)
Electronics	Net sales	120,868	140,000	19,132
	Operating income	16,153	20,000	3,847
Inorganics	Net sales	102,300	145,000	42,700
	Operating income	14,412	27,500	13,088
Aluminum	Net sales	76,179	38,000	(38,179)
	Operating income	6,902	3,000	(3,902)
Showa Denko Materials	Net sales	635,033	550,000	(85,033)
	Operating income	20,316	25,000	4,684
Others	Net sales	44,059	23,000	(21,059)
	Operating income	(38)	400	438
Adjustments	Net sales	(28,822)	(11,000)	17,822
	Operating income	(12,845)	(15,400)	(2,555)
Total	Net sales	1,419,635	1,350,000	(69,635)
	Operating income	87,198	84,000	(3,198)

[Rearrangement of segments]



2. Financial conditions for the January 1 – December 31, 2021 period

(1) Assets, liabilities, and net assets

Total assets at the end of the year amounted to ¥2,142,390 million, a decrease of ¥61,216 million from the level at December 31, 2020. Total assets decreased due mainly to the decrease in tangible fixed assets and intangible fixed assets including goodwill, despite an increase in notes and accounts receivable-trade due to recovery in sales of products, an increase in inventories due to a rise in prices of products and raw materials, and an increase in cash and deposits due to an increase in the sum of money received due to public stock offering. Total liabilities decreased ¥161,588 million, to ¥1,323,937 million due mainly to a decrease in interest bearing debt, despite an increase in accounts payable-trade. Interest bearing debt significantly decreased ¥209,543 million, to ¥850,603 million due mainly to repayment of it through utilization of net cash provided by operating activities and cash provided by sale of businesses. Net assets at the end of the year amounted to ¥818,452 million, up ¥100,372 million from the level at the end of 2020, due partly to an increase in foreign currency translation adjustments and an increase in capital stock and capital surplus resulting from execution of public stock

offering aiming to raise funds for investment in plants and equipment to respond in advance to rapidly increasing demand for semiconductor materials.

(2) Cash flows in 2021

Net cash provided by operating activities increased ¥5,997 million from the previous year, to the proceeds of ¥115,283 million, due partly to an increase in profit before income taxes. Net cash used in investing activities decreased ¥958,653 million, to the proceeds of ¥28,606 million, due partly to the proceeds of ¥83,915 million resulting from the transfer of businesses, despite the effect of expenditure of ¥890,230 million in the previous year resulting from acquisition of shares in a subsidiary accompanying an expansion of the bounds of consolidation. As a result, free cash flow ended in the proceeds of ¥143,889 million, a decrease in expenditures of ¥964,650 million. Net cash provided by financial activities decreased ¥1,018,262 million, to an expenditure of ¥121,741 million, due partly to the effect of an expenditure of ¥307,247 million resulting from repayment of long-term debt and proceeds of ¥702,163 million resulting from the borrowing of long-term debt in the previous year, although there were proceeds of ¥82,405 million resulting from issuance of new stocks and ¥99,539 million resulting from issuance of a corporate bond. As a result, cash and cash equivalents at December 31, 2021 increased ¥37,011 million from the end of the previous year, to ¥234,938 million, including the effect of exchange rate fluctuations.

(3) Cash flow projections for 2022

Cash flows from operating activities will increase. As for net cash used in investing activities, payment will increase from that in 2021. Thus, free cash flow in 2022 is expected to decrease to the proceeds of ¥5,000 million from the proceeds of ¥143,889 million in 2021. Interest bearing debt at the end of 2022 will be ¥800,000 million, down around ¥50,000 million from that at the end of 2021.

(4) Trends in cash flow indexes

	2018	2019	2020	2021
Equity ratio	41.5%	46.4%	18.4%	24.0%
Equity ratio on a market value basis	44.3%	39.3%	14.5%	20.4%
Debt maturity (years)	1.9	3.8	9.2	7.2
Interest coverage ratio	35.1	33.8	20.3	11.5

[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 non-controlling 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

In January 2022, Showa Denko K.K. and Showa Denko Materials Co., Ltd. integrated the

two companies' management system, and realized substantial integration of the two companies through establishment of management system in which common Corporate Officers manage both companies. At the same time of the start of this new management system, the two companies revised their Corporate Philosophy, and "Long-term Vision for the Newly Integrated Company" which had been announced in December 2020.

"Corporate Philosophy"

The power of chemistry makes it possible for mankind and the earth to live in harmony.

We believe realization of the Purpose of the newly-integrated company, which is "Change society through the power of chemistry," is an obligation of the newly-integrated chemical manufacturer. By embedding the idea of sustainability into the base of the Purpose of the newly-integrated company, we will deal with chemistry in earnest.

In addition to this Purpose, we established four Values which we believe the Group's employees should consider important. The four Values are "Passionate & Results-Driven," "Agile & Flexible," "Open Minds Open Connections," and "Solid Vision & Solid Integrity." We defined the combination of the Purpose and the four Values as the newly-integrated company's Corporate Philosophy.

We will make this Corporate Philosophy permeate into the entire Showa Denko Group globally. The new Showa Denko Group will promote its businesses as a body, strengthen human-resource-training programs, enhance transparency of personnel evaluation system, and promulgate the merit system.

"Ideal state of the newly-integrated company"

We will aim to be a **"global top-level functional chemical manufacturer."**

As ideal states of the newly-integrated company, we will aim to be a **"company that can compete on the world stage"** which has competitive advantages in quality and measurable performance, a **"company that contributes to sustainable global society"** through innovation and power to develop new businesses, and a **"company that develops talents that represents Japan's manufacturing industry"** which draws attention of various stakeholders, and we will achieve these aims.

"Co-Creative Chemical Company"

We aim to be a chemical manufacturer that takes the initiative in solution of social issues through provision of leading-edge functional materials ranging from midstream- to downstream-products to society. To achieve this target, we believe we should make our business activities go beyond the boundary of an ordinary chemical manufacturer and that of the conventional chemical industry.

We will have global top-level capability as a chemical manufacturer, act and make decisions quickly and flexibly, thereby co-creating better society together with communities and stakeholders of the chemical industry with whom we share ideals. This is the state of **"Co-Creative Chemical Company"** into which we aim to transform ourselves.

(2) Target management indexes

This time, we introduce return on invested capital (ROIC) as a new numerical target instead of return on equity (ROE), aiming to enhance discipline in investment. We will aim to be in the top 25% of the ranking of total shareholders' return (TSR) in the chemical

industry in medium- to long term.

	2021 actual results	Forecast for 2022	Image for 2025	Image for 2030
Net sales* (¥ trillion)	1.42	1.35	1.6	1.8 - 1.9
EBITDA margin (%)	14.3%	14.4%	20%	
ROIC (%)	4.3%	4.8%	10% in medium- to long-term	
Net Debt/Equity Ratio (times)	1.15	1.19	Aim to achieve 1.0	

*These values are rough estimates that do not include net sales expected to be recorded by companies as targets of M&A in the future.

4. Our view on selection of accounting standard

The Showa Denko Group intends to execute its consolidated financial statements in accordance with Japanese standards for the moment, after careful consideration to comparability among consolidated financial statements of different terms or different companies. As for application of International Financial Reporting Standards (IFRS), we will continue carefully observing circumstances in and outside Japan and deal with the standards appropriately.

Consolidated Balance Sheets

(¥ in millions, US\$ in thousands)

	Dec. 31, 2020	Dec. 31, 2021	Dec. 31, 2021
Assets	¥	¥	\$
Current assets			
Cash and deposits	198,982	236,237	2,053,875
Notes and accounts receivable-trade	271,628	278,641	2,422,540
Merchandise and finished goods	93,947	96,805	841,639
Work in process	28,383	27,993	243,375
Raw materials and supplies	67,877	79,080	687,534
Other	62,917	81,201	705,970
Allowance for doubtful accounts	(1,092)	(1,426)	(12,398)
Total current assets	722,644	798,531	6,942,536
Noncurrent assets			
Property, plant and equipment			
Buildings and structures, net	142,300	136,541	1,187,109
Machinery, equipment and vehicles, net	222,036	199,209	1,731,948
Tools, furniture and fixtures, net	29,601	23,276	202,362
Land	264,589	242,556	2,108,816
Leased assets	29,613	19,157	166,558
Construction in progress	38,980	38,782	337,173
Total property, plant and equipment	727,119	659,521	5,733,965
Intangible assets			
Goodwill	359,200	311,766	2,710,539
Customer related assets	152,564	141,141	1,227,100
Other	86,679	69,582	604,951
Total intangible assets	598,443	522,489	4,542,590
Investments and other assets			
Investment securities	106,408	103,798	902,434
Net defined benefit asset	21,184	33,088	287,668
Deferred tax assets	15,883	15,207	132,208
Other	19,671	10,223	88,884
Allowance for doubtful accounts	(7,747)	(466)	(4,051)
Total investments and other assets	155,399	161,850	1,407,144
Total noncurrent assets	1,480,962	1,343,859	11,683,699
Total assets	2,203,606	2,142,390	18,626,235
Liabilities			
Current liabilities			
Notes and accounts payable-trade	164,356	207,745	1,806,167
Short-term loans payable	62,645	59,451	516,875
Current portion of long-term loans payable	31,387	52,858	459,551
Commercial papers	10,000	15,000	130,412
Current portion of bonds	25,000	19,999	173,874
Provision for repairs	28	4,848	42,152
Provision for bonuses	8,815	8,815	76,642
Provision for bonuses for directors	—	71	617
Provision for stock payment	13	39	336
Provision for business structure improvement	1,748	—	—
Other	108,078	119,824	1,041,769
Total current liabilities	412,071	488,650	4,248,394
Noncurrent liabilities			
Bonds payable	66,929	146,945	1,277,560
Long-term loans payable	839,436	536,503	4,664,431
Deferred tax liabilities	63,372	60,144	522,900
Deferred tax liabilities for land revaluation	30,241	30,128	261,934
Provision for repairs	3,168	96	835
Provision for stock payment	204	196	1,708
Provision for business structure improvement	654	812	7,058
Net defined benefit liability	24,750	17,523	152,345
Other	44,701	42,941	373,333
Total noncurrent liabilities	1,073,455	835,287	7,262,102
Total liabilities	1,485,526	1,323,937	11,510,497
Net assets			
Shareholders' equity			
Capital stock	140,564	182,146	1,583,604
Capital surplus	78,190	119,772	1,041,317
Retained earnings	165,572	143,335	1,246,172
Treasury stock	(11,657)	(11,655)	(101,331)
Total shareholders' equity	372,669	433,598	3,769,761
Accumulated other comprehensive income			
Valuation difference on available-for-sale securities	3,728	2,838	24,678
Deferred gains or losses on hedges	908	1,167	10,146
Revaluation reserve for land	29,034	28,928	251,504
Foreign currency translation adjustment	(506)	38,421	334,040
Remeasurements of defined benefit plans	128	9,036	78,564
Total accumulated other comprehensive income	33,292	80,391	698,932
Non-controlling interests	312,119	304,463	2,647,045
Total net assets	718,080	818,452	7,115,738
Total liabilities and net assets	2,203,606	2,142,390	18,626,235

Consolidated Statements of Income

(¥ in millions, US\$ in thousands)

	Results for the year ended Dec. 31 2020 and 2021		
	2020	2021	2021
	¥	¥	\$
Net sales	973,700	1,419,635	12,342,508
Cost of sales	814,378	1,081,642	9,403,943
Gross profit	159,322	337,994	2,938,565
Selling, general and administrative expenses	178,771	250,796	2,180,453
Operating income (loss)	(19,449)	87,198	758,112
Non-operating income			
Interest income	882	741	6,441
Dividends income	1,523	1,527	13,272
Equity in earnings of affiliates	1,245	5,251	45,657
Foreign exchange gains	—	4,281	37,221
Miscellaneous income	4,992	6,840	59,464
Total non-operating income	8,642	18,640	162,055
Non-operating expenses			
Interest expenses	6,986	10,006	86,993
Financing expenses	16,075	—	—
Miscellaneous expenses	10,103	8,971	77,992
Total non-operating expenses	33,164	18,977	164,985
Ordinary income (loss)	(43,971)	86,861	755,182
Extraordinary income			
Gain on sales of investment securities	4,959	5,967	51,881
Gain on sale of businesses	—	15,123	131,478
Other	3,471	1,943	16,894
Total extraordinary income	8,430	23,033	200,253
Extraordinary loss			
Loss on sales and retirement of noncurrent assets	2,956	4,988	43,369
Impairment loss	16,602	11,564	100,542
Environmental expenses	—	8,958	77,882
Loss on sale of businesses	—	12,078	105,008
Business structuring expenses	5,908	32,767	284,878
Other	7,253	16,613	144,432
Total extraordinary losses	32,720	86,968	756,110
Profit (loss) before income taxes	(68,260)	22,926	199,325
Income taxes	(3,160)	20,270	176,227
Net income (loss)	(65,101)	2,657	23,098
Net income attributable to non-controlling interests	11,203	14,751	128,244
Net loss attributable to owners of the parent	(76,304)	(12,094)	(105,146)

Consolidated Statements of Comprehensive Income

(¥ in millions, US\$ in thousands)			
	Results for the year ended Dec.31 2020 and 2021		
	2020	2021	2021
Net income (loss)	¥ (65,101)	¥ 2,657	\$ 23,098
Other comprehensive income:			
Valuation difference on available-for-sale securities	(6,101)	(949)	(8,250)
Deferred gains or losses on hedges	474	259	2,251
Foreign currency translation adjustments	(4,770)	39,074	339,713
Remeasurements of defined benefit plans, net of tax	5,257	8,927	77,610
Share of other comprehensive income of entities accounted for using equity method	54	958	8,328
Total other comprehensive income	(5,087)	48,268	419,651
Comprehensive income	(70,188)	50,925	442,749
(Comprehensive income attributable to)			
Comprehensive income attributable to owners of the parent	(81,294)	35,111	305,260
Comprehensive income attributable to non-controlling interests	11,107	15,814	137,489

Consolidated Statements of Changes in Net Assets

For the year ended December 31, 2020

(¥ in millions)

	Shareholders' equity					Valuation and translation adjustments						Non-controlling interests	Total net assets
	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		
Balance at December 31, 2019	140,564	78,912	249,246	(11,664)	457,057	9,789	433	33,060	4,140	(5,114)	42,309	20,067	519,433
Changes of items during the period													
Issuance of new shares													-
Dividends from surplus			(11,693)		(11,693)								(11,693)
Net loss attributable to owners of the parent			(76,304)		(76,304)								(76,304)
Purchase of treasury stock				(3)	(3)								(3)
Disposal of treasury stock		(0)		11	11								11
Increase by increase of consolidated subsidiaries													-
Decrease by decrease of consolidated subsidiaries													-
Change in treasury shares of parent arising from transactions with non-controlling shareholders		(1,392)			(1,392)								(1,392)
Changes in liabilities for written put options over non-controlling interests		660			660								660
Change due to merger		10			10								10
Reversal of revaluation reserve for land			4,323		4,323								4,323
Net changes of items other than shareholders' equity						(6,061)	475	(4,026)	(4,646)	5,241	(9,017)	292,052	283,036
Total changes of items during the period	-	(722)	(83,674)	8	(84,389)	(6,061)	475	(4,026)	(4,646)	5,241	(9,017)	292,052	198,647
Balance at December 31, 2020	140,564	78,190	165,572	(11,657)	372,669	3,728	908	29,034	(506)	128	33,292	312,119	718,080

For the year ended December 31, 2021

(¥ in millions)

	Shareholders' equity					Total accumulated other comprehensive income						Non-controlling interests	Total net assets
	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		
Balance at December 31, 2020	140,564	78,190	165,572	(11,657)	372,669	3,728	908	29,034	(506)	128	33,292	312,119	718,080
Changes of items during the period													
Issuance of new shares	41,583	41,583			83,166								83,166
Dividends from surplus			(9,500)		(9,500)								(9,500)
Net loss attributable to owners of the parent			(12,094)		(12,094)								(12,094)
Purchase of treasury stock				(6)	(6)								(6)
Disposal of treasury stock		0		7	7								7
Increase by increase of consolidated subsidiaries			45		45								45
Decrease by decrease of consolidated subsidiaries			(690)		(690)								(690)
Change in treasury shares of parent arising from transactions with non-controlling shareholders													-
Changes in liabilities for written put options over non-controlling interests													-
Change due to merger													-
Reversal of revaluation reserve for land			1		1								1
Net changes of items other than shareholders' equity						(890)	259	(106)	38,928	8,909	47,099	(7,656)	39,443
Total changes of items during the period	41,583	41,583	(22,238)	2	60,929	(890)	259	(106)	38,928	8,909	47,099	(7,656)	100,372
Balance at December 31, 2021	182,146	119,772	143,335	(11,655)	433,598	2,838	1,167	28,928	38,421	9,036	80,391	304,463	818,452

For the year ended December 31, 2021

(US\$ in thousands)

	Shareholders' equity					Total accumulated other comprehensive income						Non-controlling interests	Total net assets
	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		
Balance at December 31, 2020	1,222,079	679,791	1,439,509	(101,345)	3,240,034	32,416	7,895	252,427	(4,402)	1,112	289,448	2,713,608	6,243,090
Changes of items during the period													
Issuance of new shares	361,525	361,525			723,050								723,050
Dividends from surplus			(82,598)		(82,598)								(82,598)
Net loss attributable to owners of the parent			(105,146)		(105,146)								(105,146)
Purchase of treasury stock				(49)	(49)								(49)
Disposal of treasury stock		0		63	64								64
Increase by increase of consolidated subsidiaries			394		394								394
Decrease by decrease of consolidated subsidiaries			(5,998)		(5,998)								(5,998)
Change in treasury shares of parent arising from transactions with non-controlling shareholders													-
Changes in liabilities for written put options over non-controlling interests													-
Change due to merger													-
Reversal of revaluation reserve for land			10		10								10
Net changes of items other than shareholders' equity						(7,738)	2,251	(923)	338,442	77,452	409,484	(66,562)	342,921
Total changes of items during the period	361,525	361,525	(193,338)	14	529,727	(7,738)	2,251	(923)	338,442	77,452	409,484	(66,562)	872,648
Balance at December 31, 2021	1,583,604	1,041,317	1,246,172	(101,331)	3,769,761	24,678	10,146	251,504	334,040	78,564	698,932	2,647,045	7,115,738

Consolidated Statements of Cash Flows

(¥ in millions, US\$ in thousands)

	Results for the year (Jan. 1-Dec. 31)		
	2020	2021	2021
	¥	¥	\$
Net cash provided by (used in) operating activities			
Income (loss) before income taxes and minority interests	(68,260)	22,926	199,325
Depreciation and amortization	68,643	97,726	849,646
Impairment loss	16,602	11,564	100,542
Amortization of negative goodwill	9,322	17,720	154,058
Increase (decrease) in net defined benefit liability	2,431	4,038	35,107
Interest and dividends income	(2,405)	(2,267)	(19,713)
Interest expenses	6,986	10,006	86,993
Financing expenses	16,075	-	-
Equity in (earnings) losses of affiliates	(1,245)	(5,251)	(45,657)
Loss (gain) on sales and valuation of investment securities	(2,619)	(5,101)	(44,348)
Loss on retirement of noncurrent assets	2,627	4,838	42,062
Loss (gain) on sales of noncurrent assets	(2,645)	(1,104)	(9,602)
Loss (gain) on sales of businesses	-	(3,045)	(26,474)
Business structuring expenses	5,908	32,767	284,878
Decrease (increase) in notes and accounts receivable-trade	14,879	(51,628)	(448,859)
Decrease (increase) in inventories	70,713	(43,739)	(380,274)
Increase (decrease) in notes and accounts payable-trade	(22,744)	72,694	632,008
Other, net	13,272	(34,230)	(297,587)
Subtotal	127,540	127,914	1,112,104
Interest and dividends income received	6,546	7,266	63,174
Interest expenses paid	(5,371)	(9,999)	(86,931)
Income taxes paid	(19,429)	(9,898)	(86,058)
Net cash provided by (used in) operating activities	109,286	115,283	1,002,289
Net cash provided by (used in) investing activities			
Payments into time deposits	(885)	(1,666)	(14,486)
Proceeds from withdrawal of time deposits	1,144	1,507	13,101
Purchase of property, plant and equipment	(64,500)	(67,741)	(588,952)
Proceeds from sales of property, plant and equipment	7,723	2,223	19,327
Purchase of investment securities	(286)	(3,270)	(28,432)
Proceeds from sales of investment securities	22,697	9,318	81,009
Purchase of investments in subsidiaries resulting in change in scope of consolidation	(890,230)	-	-
Proceeds from sales of investments in subsidiaries resulting in change in scope of consolidation	-	84,133	731,460
Net decrease (increase) in short-term loans receivable	67	(1,230)	(10,691)
Payments of long-term loans receivable	(630)	(246)	(2,139)
Collection of long-term loans receivable	275	14,271	124,078
Other, net	(5,422)	(8,693)	(75,571)
Net cash provided by (used in) investing activities	(930,047)	28,606	248,704
Net increase (decrease) in short-term loans payable	(19,226)	6,352	55,224
Net increase (decrease) in commercial papers	10,000	5,000	43,471
Proceeds from long-term loans payable	702,163	24,300	211,268
Repayment of long-term loans payable	(44,134)	(307,247)	(2,671,246)
Proceeds from issuance of bonds	-	99,539	865,407
Redemption of bonds	-	(25,000)	(217,354)
Proceeds from issuance of common stock	268,503	82,405	716,437
Purchase of treasury shares	(3)	(7)	(58)
Proceeds from sales of treasury shares	18	0	2
Cash dividends paid	(11,674)	(9,479)	(82,416)
Proceeds from stock issuance to non controlling shareholders	-	29,766	258,790
Cash dividends paid to non controlling shareholders	(1,397)	(16,117)	(140,123)
Purchase of investments in subsidiaries without change in scope of consolidation	(1,987)	(5,293)	(46,018)
Other, net	(5,742)	(5,960)	(51,822)
Net cash provided by (used in) financing activities	896,521	(121,741)	(1,058,437)
Effect of exchange rate change on cash and cash equivalents	434	14,634	127,228
Net increase (decrease) in cash and cash equivalents	76,194	36,782	319,784
Cash and cash equivalents at beginning of period	121,734	197,928	1,720,811
Increase in cash and cash equivalents from newly consolidated subsidiary	-	229	1,991
Cash and cash equivalents at end of period	197,928	234,938	2,042,585

(Reference)

SEGMENT INFORMATION

(a) The operations of the Companies for the year ended December 31, 2020 and 2021 were summarized by business segment as follows:

Year ended December 31, 2020									
Millions of yen									
	Petrochemicals	Chemicals	Electronics	Inorganics	Aluminum	Showa Denko Materials	Others	Elimination	Consolidated
Sales									
Outside customers	¥184,173	¥139,517	¥96,296	¥77,158	¥73,559	¥302,687	¥100,310	¥-	¥973,700
Inter-segment	9,213	16,251	1,119	5,741	6,626	55	6,991	(45,996)	-
Total	193,385	155,769	97,415	82,899	80,185	302,742	107,301	(45,996)	973,700
Operating income (loss)	¥4,927	¥13,481	¥9,133	(¥32,300)	¥421	(¥6,303)	¥1,199	(¥10,006)	(¥19,449)

Year ended December 31, 2021									
Millions of yen									
	Petrochemicals	Chemicals	Electronics	Inorganics	Aluminum	Showa Denko Materials	Others	Elimination	Consolidated
Sales									
Outside customers	¥277,717	¥175,562	¥119,470	¥98,991	¥72,434	¥634,792	¥40,668	¥-	¥1,419,635
Inter-segment	5,428	11,311	1,398	3,309	3,745	241	3,391	(28,822)	-
Total	283,145	186,873	120,868	102,300	76,179	635,033	44,059	(28,822)	1,419,635
Operating income (loss)	¥20,701	¥21,597	¥16,153	¥14,412	¥6,902	¥20,316	(¥38)	(¥12,845)	¥87,198

Year ended December 31, 2021									
Thousands of U.S. dollars									
	Petrochemicals	Chemicals	Electronics	Inorganics	Aluminum	Showa Denko Materials	Others	Elimination	Consolidated
Sales									
Outside customers	\$2,414,514	\$1,526,363	\$1,038,691	\$860,640	\$629,754	\$5,518,971	\$353,575	\$-	\$12,342,508
Inter-segment	47,189	98,336	12,154	28,769	32,560	2,095	29,482	(250,585)	-
Total	2,461,703	1,624,699	1,050,845	889,409	662,314	5,521,066	383,057	(250,585)	12,342,508
Operating income (loss)	\$179,976	\$187,764	\$140,438	\$125,299	\$60,006	\$176,633	(\$326)	(\$111,677)	\$758,112

(b) The operations of the Companies for the year ended December 31, 2020 and 2021 were summarized by geographic area as follows:

Year ended December 31, 2020					
Millions of yen					
	Japan	China	Asia(exc. China)	Others	Total
Sales	¥530,804	¥119,360	¥211,674	¥111,862	¥973,700
	Japan	Asia	Others	Total	
Tangible fixed assets	¥495,516	¥143,439	¥88,164	¥727,119	

Year ended December 31, 2021					
Millions of yen					
	Japan	China	Asia(exc. China)	Others	Total
Sales	¥757,708	¥170,047	¥292,947	¥198,933	¥1,419,635
	Japan	Asia	Others	Total	
Tangible fixed assets	¥456,825	¥120,624	¥82,071	¥659,521	

Year ended December 31, 2021					
Thousands of U.S. dollars					
	Japan	China	Asia(exc. China)	Others	Total
Sales	\$6,587,622	\$1,478,412	\$2,546,921	\$1,729,553	\$12,342,508
	Japan	Asia	Others	Total	
Tangible fixed assets	\$3,971,704	\$1,048,724	\$713,537	\$5,733,965	

(c) The impairment loss and the (negative) goodwill of the Companies for the year ended December 31, 2020 and 2021 were summarized by business segment as follows:

Year ended December 31, 2020									
Millions of yen									
	Petrochemicals	Chemicals	Electronics	Inorganics	Aluminum	Showa Denko Materials	Others	Elimination	Total
Impairment loss	¥93	¥2	¥244	¥9,049	¥8,802	¥288	¥66	—	¥18,545
Goodwill	—	—	—	—	—	—	—	—	—
Amortization	—	248	44	8	265	9,128	26	—	9,719
Unamortized balance	—	3,123	155	21	1,618	355,995	68	—	360,980
Negative goodwill	—	—	—	—	—	—	—	—	—
Amortization	—	308	33	—	54	—	4	—	398
Unamortized balance	—	1,164	228	—	379	—	10	—	1,780

Year ended December 31, 2021									
Millions of yen									
	Petrochemicals	Chemicals	Electronics	Inorganics	Aluminum	Showa Denko Materials	Others	Elimination	Total
Impairment loss	—	¥29	¥56	¥165	¥242	¥41,091	¥49	—	¥41,633
Goodwill	—	—	—	—	—	—	—	—	—
Amortization	—	237	44	8	135	17,596	8	—	18,028
Unamortized balance	—	3,104	111	13	—	309,659	—	—	312,886
Negative goodwill	—	—	—	—	—	—	—	—	—
Amortization	—	246	33	—	27	—	4	—	309
Unamortized balance	—	918	195	—	—	—	6	—	1,119

Year ended December 31, 2021									
Thousands of U.S. dollars									
	Petrochemicals	Chemicals	Electronics	Inorganics	Aluminum	Showa Denko Materials	Others	Elimination	Total
Impairment loss	—	\$252	\$491	\$1,438	\$2,108	\$357,248	\$426	\$—	\$361,963
Goodwill	—	—	—	—	—	—	—	—	—
Amortization	—	2,062	385	73	1,175	152,981	66	—	156,742
Unamortized balance	—	26,984	963	110	—	2,692,214	—	—	2,720,271
Negative goodwill	—	—	—	—	—	—	—	—	—
Amortization	—	2,137	283	—	233	—	31	—	2,684
Unamortized balance	—	7,985	1,696	—	—	—	51	—	9,732