SHOWA DENKO

SHOWA DENKO FINANCIAL REPORT 2021

Corporate Philosophy

Purpose

Change society through the power of chemistry

Contribute to the sustainable development of global society by creating functions required of the times as an advanced material partner

Values

Passionate & Results Driven

By taking pride and passion to our work,
By focusing our strengths and performance,
We will became a globally recognized top player.

Open Minds & Open Connections

By showing mutual trust and respect,
By collaborating openly beyond boundaries,
We will co-create new value with all stakeholders.

Agile & Flexible

By learning through trial-and-error,
By thinking flexibly and acting swiftly,
We will transform into a dynamic organization.

Solid Vision & Solid Integrity

We truly recognize the power and potential of chemistry,
We prioritize sustainability for future generations,
We commit to upholding our values of integrity to all stakeholders and ethics in developing chemical technologies.

Profile

Showa Denko K.K. (SDK) was founded in 1939. Ranked as one of Japan's leading chemical companies, SDK operated in seven major segments until December 2021: petrochemicals, chemicals, electronics, inorganics, aluminum, Showa Denko Materials, and others. From January 2022, SDK introduces new segments for information disclosure which are in line with the new management system: semiconductor and electronic materials, mobility, innovation enabling materials, and chemicals.

The Showa Denko Group noticed high potential for abundant hydro power, a major resource in Japan. The Group began by focusing on the promising future of the electrochemical industry, which can make the most of hydroelectric power, and expanded business domains to cover inorganic chemicals, organic chemicals, and metallic materials. Today, the Group is a unique chemical manufacturer that supplies petrochemicals, chemicals, electronics, inorganics, and aluminum.

In 2020, the Group brought Hitachi Chemical Company, Ltd. (currently Showa Denko Materials Co., Ltd. (Showa Denko Materials)) into a member of the Group.

SDK has formulated "Long-term Vision (2021-2030) for Newly Integrated Company" (Long-term Vision) following integration with Showa Denko Materials.

Showa Denko and Showa Denko Materials are committed to providing new functions and value as an integrated company in the chemicals industry where global competition and changes in market structure are expected to intensify, in this way we will contribute the realization of a sustainable society.

Please visit our website

Sustainability site	Integrated reports
https://www.sdk.co.jp/english/csr.html	https://www.sdk.co.jp/english/csr/report/csr_report.html

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Our Strengths

Showa Denko has many products maintaining high world market shares.

Here we would like to introduce semiconductor materials where the Showa Denko Group has a special advantage.

The semiconductor materials market is expected to continue growing rapidly due partly to the spread of 5G, IoT, increase in the xEVs' share of the car market, and more investment in data centers. The Showa Denko Group is one of leading manufacturers of semiconductor materials in the world, and our annual sales of semiconductor materials comes to about ¥200 billion. The Group manufactures and sells a wide range of semiconductor materials from wafer process to packaging process, including high purity gases and solvents for electronics, CMP slurries, copper clad laminates, photosensitive films, and epoxy molding compounds.

The Group will continue developing leading-edge products by making the most of our technological strengths which have grown through the integration of Showa Denko and Showa Denko Materials, and responding to customers' expectations by providing one-stop solutions, in this way achieving growth of our semiconductor materials business that exceeds the expansion of the market.

● Showa Denko
● Showa Denko Materials

	Manufacturing process for semiconductors	Key products of the Showa Denko Group
Wafer Process	**Film formation** Photoresist application Exposure	**High-purity gases and solvents for electronics**
Wafer Process	**Etching** Photoresist removal	**High-purity gases for electronics**
Wafer Process	**CMP** Cleaning	**CMP slurries**
Packaging Process	**Substrate** Rewiring layer formation Dicing	**Copper clad laminates** **Photosensitive films** **Solder resist**
Packaging Process	**Die bonding** Wire bonding	**Die bonding materials**
Packaging Process	**Molding**	**Epoxy molding compounds**

85% of sales of semiconductor materials is earned by products with global top-three market share


World No. 1
High-purity gases


High-purity solvents


Ceria slurry World No. 1
CMP slurries


Packaging substrate materials World No. 1
Copper clad laminates


World No. 1
Photosensitive films


World No. 1
Die bonding materials


World No. 2
Epoxy molding compounds

Note: The global market positions shown on this page are SDK's estimates.

Consolidated 11-Year Summary

Financial Highlights

Showa Denko K.K. and Consolidated Subsidiaries — Millions of yen

December 31	2011	2012	2013	2014	2015	2016 (Note 2)
For the year						
Net sales	¥854,158	¥739,675	¥847,803	¥ 872,785	¥775,732	¥671,159
Petrochemicals	250,396	190,939	286,732	281,400	231,288	185,783
Chemicals	130,203	127,252	130,402	138,695	142,292	134,529
Electronics	165,011	163,306	136,548	138,537	131,492	120,461
Inorganics	77,564	65,573	65,919	67,557	63,476	50,870
Aluminum	124,280	92,194	90,369	97,946	100,756	98,575
Showa Denko Materials (Note 4)	—	—	—	—	—	—
Others	150,583	135,280	176,516	191,610	147,233	128,740
Adjustments	(43,879)	(34,870)	(38,684)	(42,959)	(40,805)	(47,800)
Operating income	47,357	28,108	25,953	20,551	33,508	42,053
Petrochemicals	3,484	(977)	4,398	(4,930)	10,543	20,690
Chemicals	2,035	(875)	2,559	5,460	10,707	13,824
Electronics	30,242	32,311	21,940	25,770	17,472	15,015
Inorganics	9,640	2,954	(838)	(300)	(1,249)	(5,758)
Aluminum	6,212	1,581	5,845	2,999	2,563	4,416
Showa Denko Materials (Note 4)	—	—	—	—	—	—
Others	1,860	89	(626)	(1,041)	1,329	623
Adjustments	(6,116)	(6,975)	(7,324)	(7,406)	(7,857)	(6,758)
Net income attributable to owners of the parent	16,980	9,368	9,065	2,929	921	12,305
Net cash provided by operating activities	69,437	53,310	63,565	66,996	61,170	68,949
Net cash provided by (used in) investing activities	(38,671)	(41,741)	(55,203)	(46,876)	(42,497)	(53,754)
Free cash flow	30,766	11,569	8,362	20,120	18,674	15,195
R&D expenditures	21,597	20,633	20,435	20,362	20,289	17,313
Capital expenditures	38,794	42,503	44,370	47,318	44,059	39,276
Depreciation and amortization	49,413	46,232	39,779	40,673	42,137	38,761
At year-end						
Total assets	941,303	933,162	985,771	1,009,843	940,494	932,698
Total net assets	295,745	314,966	345,811	319,087	308,142	311,231
Interest-bearing debt	347,308	342,262	353,686	383,124	368,835	359,929
Debt/equity ratio (to FY2018, gross; from FY2019, net) (times) (Note 5)	1.17	1.09	1.02	1.20	1.20	1.16
	Yen					
Per share (Note 6)						
Net income—primary (Note 7)	¥ 11.35	¥ 6.26	¥ 6.06	¥ 1.99	¥ 6.45	¥ 86.27
Net income—fully diluted (Note 7)	11.20	6.26	6.06	1.99	6.45	86.27
Net assets	168.33	182.24	201.27	209.76	2,076.05	2,080.85
Cash dividends (applicable to the period) (Note 8)	3.00	3.00	3.00	3.00	3.00	—
Number of employees at year-end	11,542	9,890	10,234	10,577	10,561	10,146

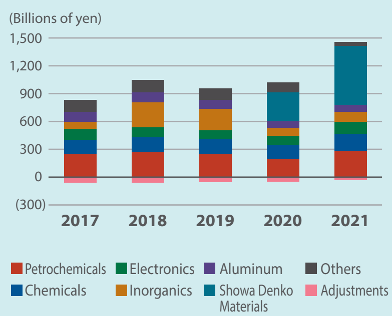
Notes: 1. Yen amounts have been translated into U.S. dollars, for convenience only, at the rate of ¥115.02 to US$1.00, the approximate rate of exchange at December 31, 2021.

2. Changing the segmentation
LIB materials was transferred from "Others" to "Electronics" from the year ended December 31, 2017. The segment information for the year ended December 2016 in the above table are based on the new segmentation. SiC epitaxial wafers for power devices was also transferred from "Others" to "Electronics" from the year ended December 31, 2019. The segment information for the year ended December 2018 in the above table are based on the new segmentation.

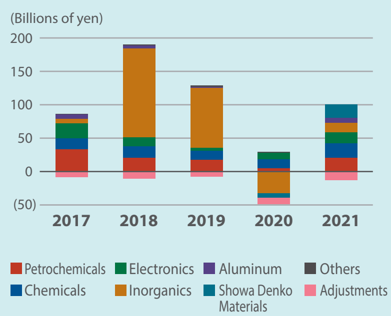
3. The tentative accounting policy applied to calculation of 2017 financial results due to consolidation of former SGL GE Holding GmbH was finalized when the Company settled accounts for the third quarter of 2018. Accordingly, the amounts of depreciation and amortization and some other costs for the year ended December 2017 were changed. The amounts in the above table include those retroactively changed numbers for the year ended December 2017.

4. 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."

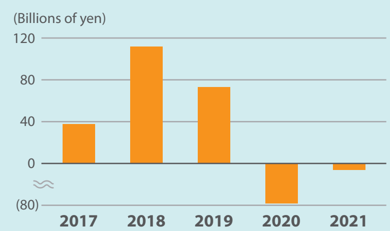
Net Sales by Segment



Operating Income by Segment



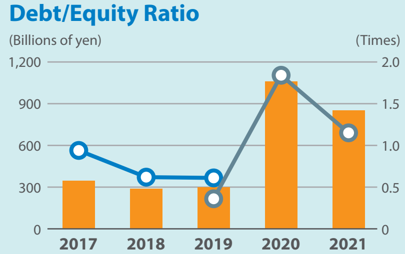
Net Income Attributable to Owners of the Parent



Showa Denko K.K. and Consolidated Subsidiaries			Millions of yen			Thousands of U.S. dollars (Note 1)
December 31	2017 (Note 3)	2018 (Note 2)	2019	2020	**2021**	**2021**
For the year						
Net sales	¥ 780,387	¥ 992,136	¥ 906,454	¥ 973,700	**¥1,419,635**	**$12,342,508**
Petrochemicals	251,128	268,879	250,678	193,385	**283,145**	**2,461,703**
Chemicals	148,758	156,541	157,480	155,769	**186,873**	**1,624,699**
Electronics	123,064	111,912	96,445	97,415	**120,868**	**1,050,845**
Inorganics	73,442	266,149	230,135	82,899	**102,300**	**889,409**
Aluminum	105,439	108,254	97,542	80,185	**76,179**	**662,314**
Showa Denko Materials (Note 4)	—	—	—	302,742	**635,033**	**5,521,066**
Others	133,624	137,324	126,163	107,301	**44,059**	**383,057**
Adjustments	(55,067)	(56,922)	(51,989)	(45,996)	**(28,822)**	**(250,585)**
Operating income	77,708	180,003	120,798	(19,449)	**87,198**	**758,112**
Petrochemicals	33,357	20,333	17,201	4,927	**20,701**	**179,976**
Chemicals	16,474	17,393	13,656	13,481	**21,597**	**187,764**
Electronics	21,925	13,557	4,880	9,133	**16,153**	**140,438**
Inorganics	6,979	132,445	89,256	(32,300)	**14,412**	**125,299**
Aluminum	6,697	4,942	1,746	421	**6,902**	**60,006**
Showa Denko Materials (Note 4)	—	—	—	(6,303)	**20,316**	**176,633**
Others	633	1,734	1,819	1,199	**(38)**	**(326)**
Adjustments	(8,357)	(10,400)	(7,759)	(10,006)	**(12,845)**	**(111,677)**
Net income attributable to owners of the parent	37,404	111,503	73,088	(76,304)	**(12,094)**	**(105,146)**
Net cash provided by operating activities	67,235	149,785	78,554	109,286	**115,283**	**1,002,289**
Net cash provided by (used in) investing activities	(29,866)	(49,338)	(48,156)	(930,047)	**28,606**	**248,704**
Free cash flow	37,369	100,447	30,397	(820,761)	**143,889**	**1,250,992**
R&D expenditures	18,539	19,735	20,605	34,379	**46,750**	**406,448**
Capital expenditures	41,787	41,727	50,216	69,052	**78,647**	**683,768**
Depreciation and amortization	38,565	39,459	37,704	60,592	**81,885**	**711,918**
At year-end						
Total assets	1,026,999	1,074,983	1,076,381	2,203,606	**2,142,390**	**18,626,235**
Total net assets	368,994	465,340	519,433	718,080	**818,452**	**7,115,738**
Interest-bearing debt	346,726	287,968	298,524	1,060,146	**850,603**	**7,395,265**
Debt/equity ratio (to FY2018, gross; from FY2019, net) (times) (Note 5)	0.94	0.62	0.36	1.84	**1.15**	
			Yen			U.S. dollars (Note 1)
Per share (Note 6)						
Net income (loss)—primary (Note 7)	¥ 262.44	¥ 758.15	¥ 501.03	¥ (523.06)	**¥ (77.40)**	**$ (0.67)**
Net income—fully diluted (Note 7)	262.44	758.15	501.03	(523.06)	**(77.40)**	**(0.67)**
Net assets	2,473.06	3,057.16	3,423.25	2,782.79	**2,838.51**	**24.68**
Cash dividends (applicable to the period) (Note 8)	80.00	120.00	130.00	65.00	**65.00**	**0.57**
Number of employees at year-end	10,864	10,476	10,813	33,684	**26,054**	

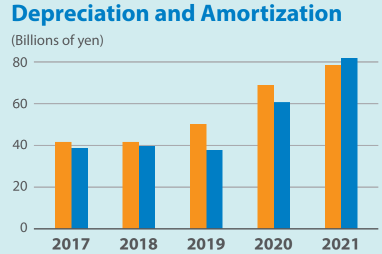
5. In accordance with the consolidation of Showa Denko Materials Co., Ltd., SDK calculated the D/E ratio with an assumption as follows, starting from the third quarter of the fiscal year ended December 31, 2020. Regarding preferred shares issued by HC Holdings K.K., which is a subsidiary of SDK, we added the amount equivalent to 50% of the value of issued preferred shares to interest-bearing debts and the remaining 50% of it to the equity capital of SDK. SDK also added lease liability to the equity capital of SDK, and net interest-bearing debt (interest-bearing debt minus cash and deposits) in calculation of D/E ratio. The assumption that we consider 50% of the total value of issued preferred stocks as equity capital is based on the credit rating given by Japan Credit Rating Agency, Ltd. on April 21, 2020. Furthermore, D/E ratio for 2019 was adjusted in the same way.
6. SDK consolidated every ten shares of common stock into one share on July 1, 2016. "Per share" indicators for 2015 and 2016 (except for cash dividends) are calculated on the basis of the number of outstanding shares after this consolidation.
7. Net income per share has been computed based on the average number of shares of common stock outstanding during the respective fiscal year. Fully diluted net income per share additionally assumes the conversion of the convertible bonds.
8. SDK resolved payment of dividends of ¥30.00 per share based on the record date of May 11, 2017 at the extraordinary general meeting of shareholders held in June 2017. Cash dividends applicable to 2017 include this amount.

Interest-Bearing Debt
Debt/Equity Ratio



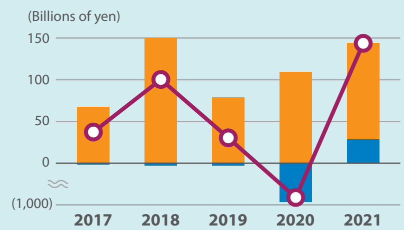
■ Interest-bearing debt *(left axis)*
○ Debt/Equity ratio *(right axis, gross)*
○ Debt/Equity ratio *(right axis, net)*

Capital Expenditures
Depreciation and Amortization



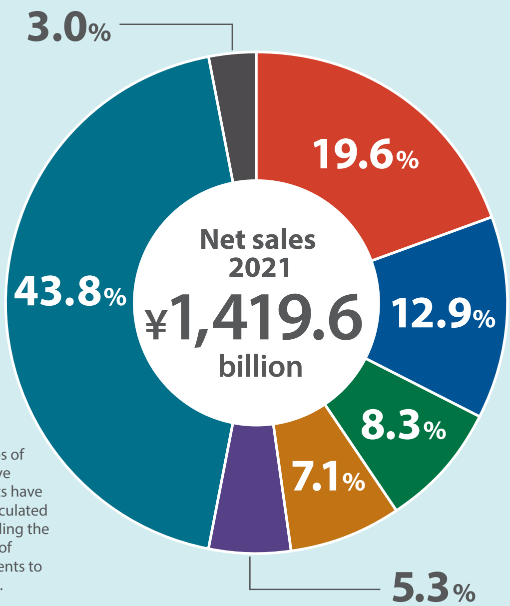
■ Capital expenditures
■ Depreciation and amortization

Cash Flows



■ Cash flows from operating activities ○ Free cash flow
■ Cash flows from investing activities

Showa Denko at a Glance



Note:
The ratios of respective segments have been calculated after adding the amount of adjustments to net sales.

Petrochemicals

Consolidated Business Results (Millions of yen)	2021	2020	Increase/ decrease	Rate of change
Sales	283,145	193,385	89,760	46.4%
Operating Income	20,701	4,927	15,774	320.2%

Olefins (ethylene and propylene), organic chemicals (vinyl acetate monomer, ethyl acetate, and allyl alcohol), and polymer (polypropylene)

Chemicals

Consolidated Business Results (Millions of yen)	2021	2020	Increase/ decrease	Rate of change
Sales	186,873	155,769	31,104	20.0%
Operating Income	21,597	13,481	8,116	60.2%

Functional chemicals (polymer emulsion and unsaturated polyester resin), industrial gases (liquefied carbon dioxide, dry ice, oxygen, nitrogen, and hydrogen), basic chemicals (liquefied ammonia, acrylonitrile, and chloroprene rubber), electronic chemicals (high-purity gases for electronics), and coating materials

Electronics

Consolidated Business Results (Millions of yen)	2021	2020	Increase/ decrease	Rate of change
Sales	120,868	97,415	23,453	24.1%
Operating Income	16,153	9,133	7,020	76.9%

Hard disks (HDs), SiC epitaxial wafers for power devices, compound semiconductors (LED chips), and lithium-ion battery (LIB) materials

Inorganics

Consolidated Business Results (Millions of yen)	2021	2020	Increase/ decrease	Rate of change
Sales	102,300	82,899	19,401	23.4%
Operating Income	14,412	(32,300)	46,712	—

Graphite electrodes and ceramics (alumina and abrasives)

Aluminum

Consolidated Business Results (Millions of yen)	2021	2020	Increase/ decrease	Rate of change
Sales	76,179	80,185	(4,006)	(5.0%)
Operating Income	6,902	421	6,481	—

Rolled products (high-purity foils for capacitors), specialty components (cylinders for laser beam printers [LBPs], extrusions, forged products, and heat exchangers), and beverage cans

Showa Denko Materials

Consolidated Business Results (Millions of yen)	2021	2020	Increase/ decrease	Rate of change
Sales	635,033	302,742	332,291	109.8%
Operating Income	20,316	(6,303)	26,619	—

Electronics materials (epoxy molding compounds, die bonding materials, CMP slurries, anisotropic conductive films), printed wiring boards materials (copper clad laminates, photosensitive dry films), mobility components (plastic molded products, friction materials, powder metal products, carbon anode materials for LIB), energy storage devices and systems (automotive and industrial batteries, industrial batteries), and life sciences (diagnostics, contracted manufacturing of regenerative medicine products)

Others

Consolidated Business Results (Millions of yen)	2021	2020	Increase/ decrease	Rate of change
Sales	44,059	107,301	(63,242)	(58.9%)
Operating Income	(38)	1,199	(1,237)	—

Building materials and general trading

Management's Discussion and Analysis

Results of Operations

In 2021, the Group recorded consolidated net sales of ¥1,419,635 million (US$12,343 million), up 45.8% from the previous year. Sales in the Others segment fell significantly due to transfer of shares in the SHOKO CO., LTD. and the resulting unconsolidation of the company. Sales in the Aluminum segment also decreased due to the transfer of operations for rolled aluminum products and aluminum cans. However, sales in the Petrochemicals segment rose following a recovery in market prices for products. Sales in the Chemicals, Electronics, and Inorganics segments also increased due to a recovery in sales volumes over the previous year when the spread of COVID-19 significantly affected sales. Full-year consolidation of the Showa Denko Materials segment also contributed to higher net sales for the Group.

The cost of sales rose ¥267,264 million, or 32.8%, to ¥1,081,642 million (US$9,404 million) over the previous year, due mainly to the full-year consolidation of Showa Denko Materials Co., Ltd. (SDMC) and a substantial rise in prices for raw materials and fuels.

Selling, general and administrative expenses increased ¥72,025 million, or 40.3%, to ¥250,796 million (US$2,180 million), mainly the result of the full-year consolidation of SDMC and higher physical distribution costs.

R&D expenditures increased ¥12,371 million, or 36.0%, to ¥46,750 million (US$406 million) due mainly to the full-year consolidation of SDMC.

Operating income for the Group in 2021 significantly increased by ¥106,647 million to ¥87,198 million (US$758 million). Operating income in all segments was negatively affected by lower production of automobiles caused by the shortage of semiconductors and a rise in raw material prices. Operating income in the Others segment decreased due to SHOKO CO., LTD. being unconsolidated. However, operating income in the Petrochemicals segment increased due mainly to significant improvements in the naphtha factor. Operating income in the Inorganics segment was up due mainly to significantly higher shipment volumes for graphite electrodes caused by a recovery in the demand for steel. Full-year consolidation of the Showa Denko Materials segment also increased the operating income of the Group. Operating income in the Chemicals, Electronics, and Aluminum segments rose as well, mainly the result of initiatives to improve profitability.

Information by Business Segment

A breakdown of net sales and operating income by business segment follows.

Petrochemicals Segment

In the Petrochemicals segment, sales increased by 46.4% from the previous year to ¥283,145 million (US$2,462 million). In our olefin operations, sales rose due to an improved supply and demand balance in East Asia resulting from a recovery in demand from China and rising prices of products, including ethylene and propylene, resulting from higher prices for raw materials. Sales of organic chemicals grew, owing to a rise in sales volumes of ethyl acetate and vinyl acetate as a result of a rebound from the periodic shutdown for plant maintenance 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 operating income of ¥20,701 million (US$180 million), a momentous increase of 320.2% from the previous year, due to a significant improvement in the raw naphtha price factor and higher market prices for these products.

Chemicals Segment

In the Chemicals segment, sales increased 20.0% from the previous year to ¥186,873 million (US$1,625 million). Sales of basic chemicals rose. Sales of liquefied ammonia were higher due to an increase in shipment volumes. Sales of acrylonitrile increased due to a tight supply and demand balance resulting from the impact of a hurricane in the US, a significant rise in product prices resulting from substantially higher raw material and fuel prices, and an increase in shipment volumes for these products. Sales of chloroprene rubber increased due to the higher volume of exports. Sales of electronic chemicals were also up due to an increase in shipments of products to respond to the demand from the booming semiconductor industry. Sales of functional chemicals increased due to higher shipment volumes for the Japanese market as well as exports, despite the recent influence of higher prices for raw materials and lower production of automobiles. Sales of industrial gases and coating materials also increased due to higher shipment volumes. Operating income for the segment increased 60.2% from the previous year to ¥21,597 million (US$188 million).

Electronics Segment

In the Electronics segment, sales rose by 24.1% from the previous year to ¥120,868 million (US$1,051 million). Sales of HD media increased because of higher shipment volumes of HD media for data centers and PCs. Sales of compound semiconductors increased due to more export sales. Sales of lithium-ion battery (LIB) materials were up 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. SiC epitaxial wafer sales were higher due to an increase in sales volumes resulting from higher demand and the start of long-term contracts to supply SiC epitaxial wafers to several manufacturers of power semiconductor equipment. Operating income for the segment increased 76.9% to ¥16,153 million (US$140 million).

Inorganics Segment

In the Inorganics segment, sales went up by 23.4% from the previous year to ¥102,300 million (US$889 million). Sales of graphite electrodes rose due to higher sales volumes caused by increased global demand for steel, which started in the second half of 2020. Sales of ceramics were up due to growth in sales volumes of abrasives and fine ceramics for electronics. Operating income for the segment rose significantly to ¥14,412 million (US$125 million), a major increase of ¥46,712 million from the previous year due partly to a rebound from applying the lower of cost or market method to inventory in the previous year.

Aluminum Segment

In the Aluminum segment, sales fell 5.0% from the previous year to ¥76,179 million (US$662 million). Sales of aluminum specialty components rose due to higher 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 for the segment increased ¥6,481 million from the previous year to ¥6,902 million (US$60 million).

Management's Discussion and Analysis *(cont.)*

Showa Denko Materials Segment

We began to consolidate Showa Denko Materials Co., Ltd. and related subsidiaries in the second quarter of 2020, creating a new segment for reporting, and started to incorporate sales figures and operating income for 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 (US$5,521 million) in 2021, an increase of 109.8% over the previous year. Sales of electronic materials—polishing materials for flattening semiconductor circuits (CMP slurries) and materials for circuit boards, including copper clad laminates—remained strong due mainly to higher demand for semiconductors. Sales of mobility components, including molded resins, recovered from the previous year when there was a negative impact from the spread of COVID-19. However, in the second half of 2021, sales of mobility components were negatively affected by lower production of automobiles due to the recent shortage of semiconductors. As a result, the segment recorded operating income of ¥20,316 million (US$177 million), an increase of ¥26,619 million from the previous year. Operating income for this segment includes amortization of the goodwill of the former company, Hitachi Chemical Company, Ltd., the result of acquiring shares in the former Hitachi Chemical, and other losses amounting to about ¥33,400 million (US$290 million).

Others Segment

In the Others segment, sales significantly decreased by 58.9% from the previous year to ¥44,059 million (US$383 million) due mainly to SHOKO CO., LTD. being unconsolidated, resulting from the transfer of SDK's shares in SHOKO CO., LTD. that took place in the second quarter of 2021. Operating income for the segment fell by ¥1,237 million, resulting in an operating loss of ¥38 million (US$0.3 million).

Information by Geographic Area

Sales in Japan

Sales in the Petrochemicals segment in Japan rose owing to a substantial increase in market prices of petrochemical products resulting from a substantial rise in raw naphtha prices. Sales in the Chemicals segment increased due to the reduced influence of COVID-19. In basic chemicals operations, sales improved due partly to higher sales of acrylonitrile and liquefied ammonia resulting from strengthening domestic demand. Sales of industrial gases also rose, due partly to higher shipment volumes of carbonic acid gas for beverages and other gases. In the Electronics segment, sales were up, mainly due to increasing demand for SiC epitaxial wafers. In the Inorganics segment, sales of graphite electrodes rose due to an increase in shipment volumes. Sales of ceramics also went up due partly to higher shipment volumes of abrasives. In the Aluminum segment, sales decreased due to the sale of the rolled product and aluminum can businesses in 2021. Sales in the Showa Denko Materials segment increased due to full-year consolidation. In the Others segment, sales fell, due mainly to SHOKO CO., LTD. being unconsolidated, a consequence of the transfer of SDK's shares in SHOKO CO., LTD.

As a result, consolidated sales from operations in Japan increased ¥226,905 million, or 42.8%, to ¥757,708 million (US$6,588 million).

Sales in China

Sales in China grew considerably, due mainly to the full-year consolidation of the Showa Denko Materials segment. Recovery in shipment volumes of graphite electrodes and higher shipment volumes of LIB materials also increased the Group's sales in China.

As a result, consolidated sales from operations in China rose ¥50,687 million, or 42.5%, from the previous year to ¥170,047 million (US$1,478 million).

Sales in Asia (excluding Japan and China)

Sales in the Petrochemicals segment in Asia were up due to higher market prices for olefin products, despite a fall in export volumes for olefin products caused by more shipments in the strong domestic market. In the Chemicals segment, sales of electronic chemicals improved because of higher shipment volumes of high purity gases for electronics resulting from a recovery in production in the semiconductor and display industries of East Asia. Sales of coating materials also rose due to higher shipment volumes. In the Electronics segment, sales of hard disk media grew due to an increase in shipment volumes. In the Inorganics segment, sales of graphite electrodes also rose, due to a recovery in demand for steel. In the Aluminum segment, sales fell, due mainly to the sale of the aluminum can business. Full-year consolidation of the Showa Denko Materials segment also increased sales figures for the Group in Asia.

As a result, consolidated sales from operations in Asia (excluding Japan and China) rose ¥81,273 million, or 38.4% over the previous year, to ¥292,947 million (US$2,547 million).

Sales in the Rest of the World

Sales in the rest of the world were up due mainly to an increase in sales in the Inorganics segment, the result of higher shipment volumes of graphite electrodes caused by a recovery of steel production in the European and US markets. Full-year consolidation of the Showa Denko Materials segment also significantly contributed to higher sales in the rest of the world.

As a result, consolidated sales from operations in the rest of the world increased ¥87,072 million, or 77.8% over the previous year, to ¥198,933 million (US$1,730 million).

Other Income (Expenses) and Net Incomes

The gap between interest expenses and interest and dividend income (or net financial expenses) deteriorated ¥3,158 million to the expenditure of ¥7,738 million (US$67 million), mainly the result of higher interest expenses.

We recorded a gain on equity from earnings of unconsolidated subsidiaries and affiliates, to which the equity method is applied, of ¥5,251 million (US$46 million), an increase of ¥4,006 million due mainly to a higher dividend from a synthetic resin production company caused by higher market prices for products, and the full-year contribution of Showa Denko Materials' unconsolidated subsidiaries and affiliates, to which the equity method is applied.

For foreign exchange gain (losses), the Group recorded foreign exchange gain of ¥4,281 million (US$37 million) in 2021, an improvement of ¥7,260 million from the previous year.

We recorded a loss of ¥3,733 million (US$32 million), net, on retirement and sales of noncurrent assets, lower by ¥3,751 million from the previous year.

Gain on sales of investment securities increased ¥2,879 million from the previous year, to ¥5,814 million (US$51 million).

We recorded impairment losses of ¥11,564 million (US$101 million), down ¥5,038 million from the previous year, due mainly to retiring a plant that produced thermal insulation parts in the Showa Denko Materials segment.

We also posted business restructuring expenses of ¥32,767 million (US$285 million), up ¥26,859 million from the previous year, mainly the result of the transfer of the energy storage devices and systems businesses.

As a result, other income/loss (non-operating and extraordinary income/loss) deteriorated by ¥15,460 million, year on year, to a net loss of ¥64,272 million (US$559 million).

The net result was that the Company recorded a net income before income taxes and non-controlling interests of ¥22,926 million (US$199 million), an improvement of ¥91,187 million from the previous year.

Consequently, the Company recorded a net loss attributable to owners of the parent of ¥12,094 million (US$105 million), an improvement of ¥64,210 million from the previous year.

Financial Position

Total Assets

Total assets at the end of the year amounted to ¥2,142,390 million (US$18,626 million), a decrease of ¥61,216 million from the level at December 31, 2020. Total assets fell, 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 a recovery in product sales, an increase in inventories due to rising prices for products and raw materials, and an increase in cash and deposits due to an increase in funds received from a public stock offering.

Cash and deposits increased ¥37,254 million from the end of the previous year to ¥236,237 million (US$2,054 million).

Net property, plant and equipment fell ¥67,598 million to ¥659,521 million (US$5,734 million).

Total investments and other assets fell ¥22,071 million to ¥372,572 million (US$3,239 million). Goodwill fell ¥47,434 million to ¥311,766 million (US$2,711 million).

Liabilities

Total liabilities dropped ¥161,588 million to ¥1,323,937 million (US$ 11,510 million), due mainly to a decrease in interest bearing debt, despite an increase in accounts payable–trade. Interest bearing debt fell significantly by ¥209,543 million to ¥850,603 million (US$ 7,395 million) due mainly to the repayment of this debt by using net cash provided by operating activities and cash provided by the sale of businesses.

Net Assets

Net assets at the end of the year amounted to ¥818,452 million (US$ 7,116 million), up ¥100,372 million from the end of 2020, due partly to an increase in foreign currency exchange adjustments and a higher capital stock and capital surplus resulting from a public stock offering to raise funds for investments in plants and equipment in advance of rapidly rising demand for semiconductor materials.

Capital Expenditures

Capital expenditures for the fiscal year under review rose by ¥9,595 million to ¥78,647 million (US$684 million) for the entire Group as a result of continued strict selection of investment projects to cope with the slowdown in demand caused by COVID-19, despite an increase of approximately ¥12,000 million in the Showa Denko Materials segment due to the full-year consolidation.

Cash Flows

Net cash provided by operating activities increased ¥5,997 million from the previous year to ¥115,283 million (US$1,002 million), due partly to a higher profit before income taxes.

Net cash provided by investing activities totaled ¥28,606 million (US$249 million), a decrease of ¥958,653 million from net cash used in investing activities in the previous fiscal year, which included ¥892,030 million for the purchase of investments in subsidiaries resulting in a change in the scope of consolidation, due to the impact of proceeds of ¥83,915 million from the business transfer.

As a result, free cash flow ended at the proceeds of ¥143,889 million (US$1,251 million), an improvement of ¥964,650 million. Net cash provided by financing activities fell ¥1,018,262 million to an expenditure of ¥121,741 million (US$1,058 million), due partly to the effect of an expenditure of ¥307,247 million for repaying long-term debt and proceeds of ¥702,163 million from borrowing of long-term debt in the previous year, although there were proceeds of ¥82,405 million resulting from issuing new shares and ¥99,539 million from issuing a corporate bond.

As a result, cash and cash equivalents at December 31, 2021 rose ¥37,011 million from the end of the previous year to ¥234,938 million (US$2,043 million), including the effect of exchange rate fluctuations.

Risk Factors

The Showa Denko Group faces risks, as explained below, that could adversely affect our future performance, financial position, and cash flows, and we are working to put in place an improved risk management system to minimize these risks.

The following covers those risks considered material as of March 30, 2022. This list is not exhaustive.

The Group will continue to monitor the impact of the novel coronavirus (COVID-19) on our operation.

1 Substantial fluctuations in the performances of individual businesses

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

(1) Petrochemicals

The Group purchases and imports a large amount of feedstock, including naphtha. When the price of naphtha or other types of feedstock fluctuates due to a change in crude oil prices, a change in the supply-demand balance, or a currency fluctuation, and when we cannot secure sufficient spreads between the manufacturing cost and selling prices of products, the Group's performance and financial position can be affected. Furthermore, earnings from petrochemicals largely depend on the supply-demand balance. Construction of large plants by competitors and the resultant oversupply as well as a sharp decrease in demand due to unfavorable changes in the Japanese or world economies can affect the Group's performance and financial position. In addition, the amount of investment and expenditure necessary for the Group to cope with global movement toward carbon neutrality that aims to mitigate climate change may be affected if there is any change in the schedule for implementation of necessary countermeasures.

To deal with these risks, the Group is stabilizing revenue, including by reviewing sales methods and by working to reduce costs.

(2) HD media

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

(3) Inorganics

The Group produces graphite electrodes in Asia, North America, and Europe, and sells those products globally. When the demand for graphite electrodes suddenly decreases due to unfavorable changes in the Japanese or world economies, deterioration in supply-demand balance may not allow us to secure sufficient spreads between the manufacturing cost and selling prices of products, and can affect the Group's performance and financial position.

In response to these risks, the Group is working to strengthen the revenue base through such initiatives as maintaining inventory at levels appropriate to market conditions and by further reducing costs.

(4) Aluminum

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

In response, the Group hedges against the risk of fluctuations in aluminum raw material prices by hedging on the LME and other currency exchanges, and we are working to build a more stable revenue structure by reducing costs and by taking other steps.

(5) Overseas operations

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

(6) Mergers, acquisitions, capital tie-ups, business reorganization and restructuring

The Group implements mergers, acquisitions, capital tie-ups, business reorganization and restructuring at home and overseas to expand the scope of businesses and improve profitability. The Group undertakes careful due diligence for companies being considered as acquisition targets, and scrupulously verifies post-merger plans to mitigate risk. However, if changes in the business environment for the Group or companies that the Group invests in effectively prevent the desired results from being achieved, this could have a negative impact on the Group's performance and financial position. The Group's performance and financial position could also be affected if the Group restructures businesses, such as withdrawing from unprofitable businesses or reorganizing affiliated companies.

2 Unexpected fluctuations in financial position and cash flows

(1) Substantial fluctuations in exchange rates

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

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

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

In the event that the financial results, financial position, and financial indicators, etc. originally expected are not achieved, credit ratings may be reduced, which could in turn negatively affect the refinancing of existing debt and the terms for new borrowing.

In response to these risks, we are working to strengthen the Group's financial standing, as well as to secure liquidity through commitment lines and other agreements with financial institutions, to smooth out fluctuations in repayments and redemptions, and to take an effective approach to fundraising that balances fixed and variable interest rates, among other factors.

(3) Employees' severance indemnities

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

(4) Securities

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

(5) Accounting for impairment of fixed assets

The Group may incur additional losses from the impairment of fixed assets including goodwill, intangible assets, and land, due to lower profitability resulting from aggravation in the business environment, due to a considerable reduction in the current prices of land and other fixed assets. These losses can affect the Group's performance and financial position.

Further, the takeover of Hitachi Chemical Company, Ltd. (now Showa Denko Materials Co., Ltd.) led to an increase in the amount of goodwill and intangible assets. A deterioration in the financial results of the Showa Denko Materials group, could result in the Company incurring impairment losses that could in turn negatively affect the business performance and financial position of the Showa Denko Group.

Looking at the impact of COVID-19, in the event that the spread of infection is prolonged, some businesses could incur impairment losses, which could negatively affect the business performance and financial position of the Showa Denko Group.

(6) Deferred tax assets

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

Also, regarding the impact of COVID-19, in the event that the spread of infection is prolonged, some businesses may need to revise their assumptions in relation to the recoverability of these deferred tax assets, which could negatively affect the business performance and financial position of the Showa Denko Group.

3 Specific regulations

The Group's businesses are subject to various restrictions as required by laws and regulations. The restrictions relate to industrial safety (such as the Law for Prevention of Disasters at Petroleum Complexes, Etc.; the Fire Service Law; and the High Pressure Gas Safety Law) and the environment and chemical substances (such as the Basic Environment Law; the Air Pollution Control Law; and the Law concerning the Examination and Regulation of Manufacture, Etc. of Chemical Substances). The Group observes these laws and regulations when conducting business. The Group shares information on laws and regulations that relate to manufacturing plants, and confirms the state of compliance when updating existing plants or building new ones. Nevertheless, in the event that the Group fails to observe any of the laws and regulations, the Group's activities could be restricted. In case stricter regulations are introduced, resulting in higher costs, the Group's performance and financial position can be affected.

4 Important lawsuits

While the Group makes best efforts to observe laws and agreements, the Group may be sued when conducting a wide range of businesses.

5 Others

(1) R&D

As a hybrid advanced material company combining midstream materials technology and downstream application technology, the Showa Denko Group focuses on achieving innovation through integration. The Group will continue to provide a broad range of solutions to the market, while focusing on research and development that strengthens existing businesses and creates new businesses. This will be accomplished by integrating three specific technologies: *chemistry to synthesize* for midstream materials, *chemistry to formulate* for downstream applications, and *chemistry to think* for evaluation/simulation, structural analysis, and computational science.

However, in case the actual results materially differ from original plans, the Group's performance and financial position could be affected.

(2) Intellectual property

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

(3) Quality assurance and product liability

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

In response to these risks, the Group implements procedures, such as maintaining facilities for reliable process management, installing measuring equipment, providing operating manuals, and training employees. In addition to building a system to prevent defective goods from being shipped, the Group maintains manufactured goods liability insurance policies both in Japan and overseas.

(4) Accidents and disasters

The Group is committed to securing steady and safe operations. The Group conducts regular inspections of all manufacturing facilities in an effort to minimize any risk factors pertaining to the suspension of operations or accidents due to problems with manufacturing facilities. In the event of injury or damage to property due to an accident, a large-scale natural disaster, a cyberattack, etc., the Group's reputation could be damaged. The Group may incur substantial costs in dealing with the situation and may lose business opportunities due to the suspension of production. This could affect the Group's performance and financial position.

In response to these risks, the Group has analyzed both internal and external accidents and disasters, created checklists of the lessons learned, and used them to identify risks and to compile educational materials. In addition to taking steps aimed at preventing accidents and minimizing damage when accidents do occur, the Group has prepared for cyberattacks by adopting comprehensive information management practices and by devising countermeasures to reduce the impact, if any incidents occur.

Furthermore, even when the Group's manufacturing facilities are not directly influenced, the Group's production activities may be restricted by trouble with procurement or disruption of supply chains due to accidents at suppliers' sites, a natural disaster, or a pandemic of infectious disease, or by a shortage of power supply. These factors could affect the Group's performance and financial position.

To minimize the impact of this type of damage at suppliers, the Purchasing Department has prepared a manual for gathering information for emergencies and for assessing the impact on the Group's production, and we hold BCP training sessions.

(5) Impact on the environment

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

In response to these risks, the Group has implemented environmental risk evaluations after performing exhaustive risk assessments at every business location, and we are promoting safety at environmental sites. In addition, we have implemented a systematic program of inspections and repairs to prevent environmental pollution caused by age-related deterioration.

Moreover, the need to respond to the demands of society in relation to environmental issues, which has been increasing steadily in recent years, as well as strengthened environmental laws and regulations could have a negative impact on the Group's results of operations and financial position.

(6) Infectious disease pandemics

If another global pandemic occurs, such as the one caused by the novel coronavirus, the operating results and financial position of the Group could be affected by suspended production at manufacturing plants and suspended activity at sales offices, etc.

In response to the spread of COVID-19, the Group has established a COVID-19 Countermeasures Headquarters to review information from Japan and overseas, deliver regular alerts to employees, and provide instruction on ways to counter infection. The Group CEO sent this message to all Group employees: (1) We have assigned the highest priority to the health of employees and of all employees at cooperating companies; (2) We will fulfill our social responsibility to provide goods that are indispensable to life in society; and (3) We are preparing for the growth of the Showa Denko Group after we have conquered COVID-19.

In addition, a business continuity plan (BCP) has been drawn up, and measures are being taken to minimize the impact of risks on our business operations.

(7) Impact of climate change

The Showa Denko Group uses petrochemical materials and fuels to produce various products and emits greenhouse gases (GHGs). On the other hand, the Group manufactures many kinds of products that contribute to energy conservation and the carbon cycle. It is becoming more and more important for the Group to contribute to its customers' effort to achieve carbon neutrality in order to strengthen business relations with them. In addition, the Group's costs including that of conforming to laws and regulations, capital investment, purchasing renewable energy, and preparation for large-scale natural disasters are expected to increase. Therefore, the Group continues making every effort to understand the physical, transitional, and business risks concerning climate change, and investigates countermeasures. The Group also continues to reduce its GHG emissions to 30% less than the level in 2013.

(8) Respect for human rights

In 2021, the Showa Denko Group formulated its Human Rights Policy, and started due diligence on human rights with the aim of grasping the risks of human rights violations in the Group and its supply chains. The Group will continue operating its business in a way that respects human rights. The Group will also continue identifying problems that have risks of human rights violation, dealing with them, and formulating remedies for human rights, thereby mitigating human-rights related business risks of the Group.

Consolidated Balance Sheets

Showa Denko K.K. and Consolidated Subsidiaries

As at December 31, 2021 and 2020

	Millions of yen		Thousands of U.S. dollars (Note 6)
ASSETS	**2021**	2020	**2021**
Current assets			
Cash and deposits (Notes 7, 8, and 12)	**¥ 236,237**	¥ 198,982	**$ 2,053,875**
Notes and accounts receivable (Notes 8, 11, and 12)	**319,546**	287,900	**2,778,181**
Allowance for doubtful accounts	**(1,426)**	(1,092)	**(12,398)**
Inventories (Note 12)	**203,879**	190,208	**1,772,548**
Other current assets (Notes 8 and 10)	**40,295**	46,645	**350,329**
Total current assets	**798,531**	722,644	**6,942,536**
Property, plant and equipment (Notes 12 and 15)			
Land (Note 20)	**242,556**	264,589	**2,108,816**
Buildings and structures	**343,574**	351,987	**2,987,084**
Machinery, equipment and vehicles	**955,138**	1,016,307	**8,304,101**
Leased assets (Note 17)	**30,429**	34,026	**264,554**
Construction in progress	**38,782**	38,980	**337,173**
	1,610,479	1,705,890	**14,001,727**
Less : Accumulated depreciation	**(950,958)**	(978,771)	**(8,267,762)**
Net property, plant and equipment	**659,521**	727,119	**5,733,965**
Investments and other assets			
Customer related assets	**141,141**	152,564	**1,227,100**
Investment securities (Notes 8, 9, and 12)	**103,798**	106,408	**902,434**
Long-term loans	**674**	741	**5,856**
Net defined benefit asset (Note 13)	**33,088**	21,184	**287,668**
Deferred tax assets (Note 14)	**15,207**	15,883	**132,208**
Other (Notes 8, 10, and 15)	**79,131**	105,609	**687,980**
Allowance for doubtful accounts	**(466)**	(7,747)	**(4,051)**
Total investments and other assets	**372,572**	394,643	**3,239,195**
Goodwill (Note 15)	**311,766**	359,200	**2,710,539**
Total assets	**¥ 2,142,390**	¥ 2,203,606	**$ 18,626,235**

See notes to financial statements.

LIABILITIES AND NET ASSETS	Millions of yen 2021	Millions of yen 2020	Thousands of U.S. dollars (Note 6) 2021
Current liabilities			
Short-term debt (Notes 8 and 12)	**¥ 74,451**	¥ 72,645	**$ 647,287**
Current portion of long-term debt (Notes 8, 12, and 21)	**72,857**	56,387	**633,425**
Notes and accounts payable (Notes 8, 11, and 12)	**239,897**	191,067	**2,085,702**
Income taxes payable	**17,180**	6,041	**149,364**
Provision for repairs	**4,848**	28	**42,152**
Provision for bonuses	**8,815**	8,815	**76,642**
Provision for bonuses for directors	**71**	—	**617**
Provision for stock payments (Note 4)	**39**	13	**336**
Provision for business structure improvement	**—**	1,748	**—**
Other current liabilities (Notes 8, 10, 12, and 21)	**70,492**	75,327	**612,869**
Total current liabilities	**488,650**	412,071	**4,248,394**
Noncurrent liabilities			
Long-term debt less current portion (Notes 8, 12, and 21)	**683,448**	906,365	**5,941,991**
Deferred tax liabilities (Note 14)	**60,144**	63,372	**522,900**
Provision for repairs	**96**	3,168	**835**
Provision for stock payments (Note 4)	**196**	204	**1,708**
Provision for business structure improvement	**812**	654	**7,058**
Net defined benefit liability (Note 13)	**17,523**	24,750	**152,345**
Deferred tax liabilities for land revaluation (Note 20)	**30,128**	30,241	**261,934**
Other noncurrent liabilities (Notes 8 and 10)	**42,941**	44,701	**373,333**
Total noncurrent liabilities	**835,287**	1,073,455	**7,262,102**
Contingent liabilities (Note 18)			
Net assets (Note 19)			
Shareholders' equity			
Capital stock			
Authorized, 330,000,000 shares			
Issued (2021): 184,901,292 shares	**182,146**	—	**1,583,604**
Issued (2020): 149,711,292 shares	**—**	140,564	**—**
Capital surplus	**119,772**	78,190	**1,041,317**
Retained earnings	**143,335**	165,572	**1,246,172**
Less: Treasury stock at cost (2021): 3,824,243 shares	**(11,655)**	—	**(101,331)**
Less: Treasury stock at cost (2020): 3,828,732 shares	**—**	(11,657)	**—**
Total shareholders' equity	**433,598**	372,669	**3,769,761**
Accumulated other comprehensive income			
Valuation difference on available-for-sale securities	**2,838**	3,728	**24,678**
Deferred gains or losses on hedges	**1,167**	908	**10,146**
Revaluation reserve for land (Note 20)	**28,928**	29,034	**251,504**
Foreign currency translation adjustments	**38,421**	(506)	**334,040**
Remeasurements of defined benefit plans (Note 13)	**9,036**	128	**78,564**
Total accumulated other comprehensive income	**80,391**	33,292	**698,932**
Non-controlling interests	**304,463**	312,119	**2,647,045**
Total net assets	**818,452**	718,080	**7,115,738**
Total liabilities and net assets	**¥ 2,142,390**	¥ 2,203,606	**$ 18,626,235**

Consolidated Statements of Operations

Showa Denko K.K. and Consolidated Subsidiaries

For the years ended December 31, 2021 and 2020

	Millions of yen		Thousands of U.S. dollars (Note 6)
	2021	2020	**2021**
Net sales	**¥ 1,419,635**	¥ 973,700	**$ 12,342,508**
Cost of sales (Notes 23 and 24)	**1,081,642**	814,378	**9,403,943**
Gross profit	**337,994**	159,322	**2,938,565**
Selling, general and administrative expenses (Notes 22 and 23)	**250,796**	178,771	**2,180,453**
Operating income (loss)	**87,198**	(19,449)	**758,112**
Other income (expenses)			
Interest and dividends income	**2,267**	2,405	**19,713**
Equity in earnings of unconsolidated subsidiaries and affiliates	**5,251**	1,245	**45,657**
Gain on sales of investment securities, net (Note 9)	**5,814**	2,934	**50,544**
Foreign exchange gain (loss)	**4,281**	(2,979)	**37,221**
Gain on sales of noncurrent assets, net	**1,104**	2,645	**9,602**
Interest expenses	**(10,006)**	(6,986)	**(86,993)**
Loss on retirement of noncurrent assets	**(4,838)**	(2,627)	**(42,062)**
Impairment loss (Note 15)	**(11,564)**	(16,602)	**(100,542)**
Environmental expenses (Note 27)	**(8,958)**	—	**(77,882)**
Business structuring expenses (Notes 15 and 29)	**(32,767)**	(5,908)	**(284,881)**
Financing expenses (Note 25)	**—**	(16,075)	**—**
Gain on sale of businesses (Note 26)	**15,123**	—	**131,478**
Loss on sale of businesses (Note 28)	**(12,078)**	—	**(105,008)**
Other, net	**(17,901)**	(6,864)	**(155,635)**
Total	**(64,272)**	(48,811)	**(558,787)**
Income (loss) before income taxes	**22,926**	(68,260)	**199,325**
Income taxes (Note 14)			
Current	**26,957**	6,891	**234,371**
Deferred	**(6,688)**	(10,051)	**(58,144)**
Net income (loss)	**2,657**	(65,101)	**23,098**
Net income attributable to non-controlling interests	**14,751**	11,203	**128,244**
Net loss attributable to owners of the parent	**¥ (12,094)**	¥ (76,304)	**$ (105,146)**

	Yen		U.S. dollars (Note 6)
Per share amounts			
Net loss attributable to owners of the parent : Basic	**¥ (77.40)**	¥ (523.06)	**$ (0.67)**
Net loss attributable to owners of the parent : Diluted	**(77.40)**	(523.06)	**(0.67)**
Cash dividends (applicable to the period)	**65.00**	65.00	**0.57**

Notes: Net income per share has been computed based on the average number of shares of common stock outstanding during the respective fiscal year.
See notes to financial statements.

Consolidated Statements of Comprehensive Income

Showa Denko K.K. and Consolidated Subsidiaries

For the years ended December 31, 2021 and 2020

	Millions of yen		Thousands of U.S. dollars (Note 6)
	2021	2020	**2021**
Net income (loss)	**¥ 2,657**	¥ (65,101)	**$ 23,098**
Other comprehensive income:			
Valuation difference on available-for-sale securities, net of tax	**(949)**	(6,101)	**(8,250)**
Deferred gains or losses on hedges, net of tax	**259**	474	**2,251**
Foreign currency translation adjustments	**39,074**	(4,770)	**339,713**
Remeasurements of defined benefit plans, net of tax	**8,927**	5,257	**77,610**
Share of other comprehensive income of unconsolidated subsidiaries and affiliates accounted for using equity method	**958**	54	**8,328**
Total other comprehensive income (Note 16)	**¥ 48,268**	¥ (5,087)	**$ 419,651**
Comprehensive income	**¥ 50,925**	¥ (70,188)	**$ 442,749**
Comprehensive income attributable to:			
Owners of the parent	**35,111**	(81,294)	**305,260**
Non-controlling interests	**15,814**	11,107	**137,489**

See notes to financial statements.

Consolidated Statements of Changes in Net Assets

Showa Denko K.K. and Consolidated Subsidiaries

For the years ended December 31, 2021 and 2020

	Thousands	Millions of yen										
	Number of shares of capital stock	Capital stock	Capital surplus	Retained earnings	Treasury stock	Valuation difference on available-for-sale securities	Deferred gains or losses on hedges	Revaluation reserve for land	Foreign currency translation adjustments	Remeasure-ments of defined benefit plans	Non-controlling interests	Total net assets
Balance as at December 31, 2019	149,711	¥ 140,564	¥ 78,912	¥ 249,246	¥ (11,664)	¥ 9,789	¥ 433	¥ 33,060	¥ 4,140	¥ (5,114)	¥ 20,067	¥ 519,433
Issuance of new shares	—	—	—	—	—	—	—	—	—	—	—	—
Dividends from surplus	—	—	—	(11,693)	—	—	—	—	—	—	—	(11,693)
Net loss attributable to owners of the parent	—	—	—	(76,304)	—	—	—	—	—	—	—	(76,304)
Purchase of treasury stock	—	—	—	—	(3)	—	—	—	—	—	—	(3)
Disposal of treasury stock	—	—	(0)	—	11	—	—	—	—	—	—	11
Increase by increase of consolidated subsidiaries	—	—	—	—	—	—	—	—	—	—	—	—
Decrease by decrease of consolidated subsidiaries	—	—	—	—	—	—	—	—	—	—	—	—
Change in treasury shares of the parent arising from transactions with non-controlling shareholders	—	—	(1,392)	—	—	—	—	—	—	—	—	(1,392)
Changes in liabilities for written put options over non-controlling interests	—	—	660	—	—	—	—	—	—	—	—	660
Change due to merger	—	—	10	—	—	—	—	—	—	—	—	10
Reversal of revaluation reserve for land	—	—	—	4,323	—	—	—	—	—	—	—	4,323
Net changes of items other than shareholders' equity	—	—	—	—	—	(6,061)	475	(4,026)	(4,646)	5,241	292,052	283,036
Balance as at December 31, 2020	149,711	¥ 140,564	¥ 78,190	¥ 165,572	¥ (11,657)	¥ 3,728	¥ 908	¥ 29,034	¥ (506)	¥ 128	¥ 312,119	¥ 718,080
Issuance of new shares	**35,190**	**41,583**	**41,583**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**83,165**
Dividends from surplus	**—**	**—**	**—**	**(9,500)**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**(9,500)**
Net loss attributable to owners of the parent	**—**	**—**	**—**	**(12,094)**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**(12,094)**
Purchase of treasury stock	**—**	**—**	**—**	**—**	**(6)**	**—**	**—**	**—**	**—**	**—**	**—**	**(6)**
Disposal of treasury stock	**—**	**—**	**0**	**—**	**7**	**—**	**—**	**—**	**—**	**—**	**—**	**7**
Increase by increase of consolidated subsidiaries	**—**	**—**	**—**	**45**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**45**
Decrease by decrease of consolidated subsidiaries	**—**	**—**	**—**	**(690)**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**(690)**
Change in treasury shares of the 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**
Net changes of items other than shareholders' equity	**—**	**—**	**—**	**—**	**—**	**(890)**	**259**	**(106)**	**38,928**	**8,909**	**(7,656)**	**39,443**
Balance as at December 31, 2021	**184,901**	**¥182,146**	**¥119,772**	**¥143,335**	**¥ (11,655)**	**¥ 2,838**	**¥ 1,167**	**¥ 28,928**	**¥ 38,421**	**¥ 9,036**	**¥304,463**	**¥ 818,452**

	Thousands	Thousands of U.S. dollars (Note 6)										
	Number of shares of capital stock	Capital stock	Capital surplus	Retained earnings	Treasury stock	Valuation difference on available-for-sale securities	Deferred gains or losses on hedges	Revaluation reserve for land	Foreign currency translation adjustments	Remeasure-ments of defined benefit plans	Non-controlling interests	Total net assets
Balance as at December 31, 2020	149,711	$ 1,222,079	$ 679,791	$ 1,439,509	$ (101,345)	$ 32,416	$ 7,895	$ 252,427	$ (4,402)	$ 1,112	$ 2,713,608	$ 6,243,090
Issuance of new shares	**35,190**	**361,525**	**361,525**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**723,050**
Dividends from surplus	**—**	**—**	**—**	**(82,598)**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**(82,598)**
Net loss attributable to owners of the parent	**—**	**—**	**—**	**(105,146)**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**(105,146)**
Purchase of treasury stock	**—**	**—**	**—**	**—**	**(49)**	**—**	**—**	**—**	**—**	**—**	**—**	**(49)**
Disposal of treasury stock	**—**	**—**	**0**	**—**	**63**	**—**	**—**	**—**	**—**	**—**	**—**	**64**
Increase by increase of consolidated subsidiaries	**—**	**—**	**—**	**394**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**394**
Decrease by decrease of consolidated subsidiaries	**—**	**—**	**—**	**(5,998)**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**(5,998)**
Change in treasury shares of the 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**
Net changes of items other than shareholders' equity	**—**	**—**	**—**	**—**	**—**	**(7,738)**	**2,251**	**(923)**	**338,442**	**77,452**	**(66,562)**	**342,921**
Balance as at December 31, 2021	**184,901**	**$1,583,604**	**$1,041,317**	**$1,246,172**	**$ (101,331)**	**$ 24,678**	**$ 10,146**	**$ 251,504**	**$334,040**	**$ 78,564**	**$2,647,045**	**$7,115,738**

See notes to financial statements.

Consolidated Statements of Cash Flows

Showa Denko K.K. and Consolidated Subsidiaries

For the years ended December 31, 2021 and 2020

	Millions of yen		Thousands of U.S. dollars (Note 6)
	2021	2020	**2021**
Cash flows from operating activities			
Income (loss) before income taxes	**¥ 22,926**	¥ (68,260)	**$ 199,325**
Adjustments for:			
Depreciation and amortization	**97,726**	68,643	**849,646**
Impairment loss	**11,564**	16,602	**100,542**
Amortization of goodwill	**17,720**	9,322	**154,058**
Increase (decrease) in net defined benefit liability	**4,038**	2,431	**35,107**
Interest and dividends income	**(2,267)**	(2,405)	**(19,713)**
Interest expenses	**10,006**	6,986	**86,993**
Financing expenses	**—**	16,075	**—**
Equity in (earnings) losses of unconsolidated subsidiaries and affiliates	**(5,251)**	(1,245)	**(45,657)**
Loss (gain) on sales and valuation of investment securities	**(5,101)**	(2,619)	**(44,348)**
Loss on retirement of noncurrent assets	**4,838**	2,627	**42,062**
Loss (gain) on sales of noncurrent assets	**(1,104)**	(2,645)	**(9,602)**
Loss (gain) on sales of businesses	**(3,045)**	—	**(26,474)**
Business structuring expenses	**32,767**	5,908	**284,878**
Decrease (increase) in notes and accounts receivable-trade	**(51,628)**	14,879	**(448,859)**
Decrease (increase) in inventories	**(43,739)**	70,713	**(380,274)**
Increase (decrease) in notes and accounts payable-trade	**72,694**	(22,744)	**632,008**
Other, net	**(34,230)**	13,272	**(297,587)**
Subtotal	**127,914**	127,540	**1,112,104**
Interest and dividends income received	**7,266**	6,546	**63,174**
Interest expenses paid	**(9,999)**	(5,371)	**(86,931)**
Income taxes (paid) refund	**(9,898)**	(19,429)	**(86,058)**
Net cash provided by (used in) operating activities	**115,283**	109,286	**1,002,289**
Cash flows from investing activities			
Payments into time deposits	**(1,666)**	(885)	**(14,486)**
Proceeds from withdrawal of time deposits	**1,507**	1,144	**13,101**
Purchase of property, plant and equipment	**(67,741)**	(64,500)	**(588,952)**
Proceeds from sales of property, plant and equipment	**2,223**	7,723	**19,327**
Purchase of investment securities	**(3,270)**	(286)	**(28,432)**
Proceeds from sales of investment securities	**9,318**	22,697	**81,009**
Purchase of investments in subsidiaries resulting in change in the scope of consolidation (Note 7)	**—**	(890,230)	**—**
Proceeds from sales of investments in subsidiaries resulting in change in scope of consolidation (Note 7)	**84,133**	—	**731,460**
Net decrease (increase) in short-term loans receivable	**(1,230)**	67	**(10,691)**
Payments of long-term loans receivable	**(246)**	(630)	**(2,139)**
Collection of long-term loans receivable	**14,271**	275	**124,078**
Other, net	**(8,693)**	(5,422)	**(75,571)**
Net cash provided by (used in) investing activities	**28,606**	(930,047)	**248,704**
Cash flows from financing activities			
Net increase (decrease) in short-term debt	**11,352**	(9,226)	**98,695**
Proceeds from long-term loans payable	**24,300**	702,163	**211,268**
Repayments of long-term loans payable	**(307,247)**	(44,134)	**(2,671,246)**
Proceeds from share issuance of bonds	**99,539**	—	**865,407**
Redemption of bonds	**(25,000)**	—	**(217,354)**
Proceeds from issuance of preferred stock	**82,405**	268,503	**716,437**
Purchase of treasury stock	**(7)**	(3)	**(58)**
Proceeds from sales of treasury stock	**0**	18	**2**
Cash dividends paid	**(9,479)**	(11,674)	**(82,416)**
Proceeds from stock issuance to non controlling shareholders	**29,766**	—	**258,790**
Cash dividends paid to non-controlling shareholders	**(16,117)**	(1,397)	**(140,123)**
Purchase of investments in subsidiaries without change in scope of consolidation	**(5,293)**	(1,987)	**(46,018)**
Other, net	**(5,960)**	(5,742)	**(51,822)**
Net cash provided by (used in) financing activities	**(121,741)**	896,521	**(1,058,437)**
Effect of exchange rate changes on cash and cash equivalents	**14,634**	434	**127,228**
Net increase (decrease) in cash and cash equivalents	**36,782**	76,194	**319,784**
Cash and cash equivalents at the beginning of the year	**197,928**	121,734	**1,720,811**
Increase in cash and cash equivalents resulting from newly consolidated subsidiaries	**229**	—	**1,991**
Cash and cash equivalents at the end of the year (Note 7)	**¥ 234,938**	¥ 197,928	**$ 2,042,585**

See notes to financial statements.

Notes to Financial Statements

Showa Denko K.K. and Consolidated Subsidiaries

1. BASIS OF REPORTING AND FINANCIAL STATEMENTS

The accompanying consolidated financial statements have been prepared in accordance with accounting principles and practices generally accepted in Japan, which are different in certain respects as to the application and disclosure requirements from International Financial Reporting Standards ("IFRS"), and restructured and translated into English from the consolidated financial statements which have been filed with the Kanto Local Finance Bureau as required by the Financial Instruments and Exchange Law of Japan.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

(a) Principles of Consolidation

The consolidated financial statements for the years ended December 31, 2021 and 2020 include the accounts of Showa Denko K.K. ("the Company") and its 124 and 151 significant subsidiaries, respectively (collectively "the Companies").

For the purposes of the consolidated financial statements, all significant intercompany transactions, account balances and unrealized profits among the Companies are eliminated and the portions thereof attributable to non-controlling interests are credited or charged to non-controlling interests.

The Company applies the "Practical Solution on Unification of Accounting Policies Applied to Foreign Subsidiaries, etc. for Consolidated Financial Statements" (ASBJ Practical Issues Task Force [PITF] No. 18, June 28, 2019) and makes necessary adjustments for the consolidated settlement of accounts of its foreign subsidiaries.

Showa Denko Singapore (Pte.) Ltd. is consolidated using its financial statements as of its fiscal year end, which falls on September 30, and necessary adjustments are made to its financial statement to reflect any significant transactions.

Of the consolidated subsidiaries, GMM Coatings Private Limited and 13 subsidiaries of Showa Denko Materials Co., Ltd. have business year ends on March 31. For these companies, financial statements based on the provisional settlement of accounts implemented on the date of consolidated settlement of accounts are used in the preparation of the consolidated financial statements.

The business year ends of all other consolidated subsidiaries are on December 31. From the fiscal year ended December 31, 2021, the business year ends of 26 subsidiaries of Showa Denko Materials Co., Ltd., have been changed from March 31 to December 31, the same date as the date of consolidated settlement of accounts. Accordingly, the performance for the twelve-month period from January 1, 2021 to December 31, 2021 for these companies has been included in the consolidated financial statements for the fiscal year ended December 31, 2021.

In the initial consolidation, assets and liabilities of subsidiaries including those attributable to non-controlling interests are recorded based on fair value in the accompanying consolidated financial statements.

Goodwill is amortized on a straight-line basis over a period during which the effect of such goodwill lasts but does not exceed 20 years from recognition. In addition, negative goodwill arising from business combinations prior to April 1, 2010 is amortized on a straight-line basis over a period during which the effect of such negative goodwill lasts but does not exceed 20 years from recognition.

(b) Investments in Unconsolidated Subsidiaries and Affiliates

The Company applied the equity method of accounting for investments in 1 unconsolidated subsidiary in 2021 and 2 in 2020, as well as 12 affiliates in 2021 and 11 in 2020.

All underlying intercompany profits obtained from transactions among the Companies and unconsolidated subsidiaries and affiliates to which the equity method is applied are eliminated in the consolidated financial statements.

(c) Translation of Foreign Currency Accounts

All receivables and payables denominated in foreign currencies at the balance sheet date are translated into Japanese yen at the current exchange rates.

The resulting exchange gains or losses are credited or charged to income.

The financial statements of certain consolidated foreign subsidiaries are translated into Japanese yen at the year-end rate for assets and liabilities, at historical rates for the other balance sheet accounts exclusive of the current year's net income, and at the average annual rate for revenue and expense accounts and net income.

Translation adjustments resulting from the process of translating the financial statements of foreign subsidiaries into Japanese yen are accumulated and reported as a component of net assets on the consolidated balance sheets.

(d) Cash and Cash Equivalents

Cash and cash equivalents in the consolidated statements of cash flows are composed of cash on hand, bank deposits available for withdrawal on demand, and short-term investments with original maturities of three months or less and minor risk of value fluctuation.

(e) Securities

Debt securities that are intended to be held to maturity ("held-to-maturity debt securities") are stated at amortized cost on the balance sheets. Available-for-sale securities with available fair market values are stated at fair market values. Unrealized gains and unrealized losses on these available-for-sale securities are reported, net of applicable income taxes, as a separate component of the net assets.

Realized gains or losses on the sale of the available-for-sale securities are computed using primarily the moving-average cost.

Available-for-sale securities with no available fair market values are stated primarily at the moving-average cost.

(f) Allowance for Doubtful Accounts

To provide for losses from bad debts, the allowance is provided according to the actual rate of default for ordinary receivables and in view of the probability of recovery for specific doubtful receivables.

(g) Inventories

Inventories are stated at the lower of cost or market, using principally the gross-average cost method. The carrying value on the consolidated balance sheets is stated by the devaluation method based on declines in profitability.

(h) Property, Plant and Equipment

Property, plant and equipment is stated at cost, in principle. Property, plant and equipment is depreciated using the straight-line method.

(i) Intangible Assets

The Company and some of the consolidated subsidiaries principally apply the straight-line method over 5 years to amortize intangible assets.

(j) Leased Assets

Leased assets in finance lease transactions that do not transfer ownership to the lessee are depreciated using the straight-line method on the assumption that the useful life is equal to the lease term and the residual value is equal to zero. For leases with a residual value guarantee, the contracted residual value is considered to be the residual value for financial accounting purposes.

Subsidiaries that have adopted IFRS have applied IFRS 16 "Leases." With the application of IFRS 16, lessees record all leases as assets and liabilities on their balance sheets, in principle. Capitalized right-of-use assets are depreciated using the straight-line method.

(k) Provision for Business Structure Improvement
The Company and some of the consolidated subsidiaries record the provision for business structure improvement on an accrual basis to provide for expenses and losses resulting from their restructuring programs.

(l) Provision for Bonuses
A provision for bonuses is provided at an amount estimated based on the bonus to be paid subsequent to the balance sheet date.

(m) Provision for bonuses for directors
A provision for bonuses for directors is provided at an amount estimated based on the bonus to be paid subsequent to the balance sheet date.

(n) Provision for Repairs
The Company and some of the consolidated subsidiaries provide a provision for repairs in an amount estimated to be necessary for the scheduled maintenance for certain production equipment.

(o) Provision for Stock Payments
To provide for the Company's share payments to its Directors (excluding outside Directors), Corporate Officers, and Councilors, the provision is based on the Director Share Payment Regulations.

(p) Accounting Policy for Retirement Benefits
(1) Method of attributing expected benefits to periods
The attribution of expected benefits to periods up to the current consolidated fiscal year, upon calculating the retirement benefit obligations, is done on the benefit formula basis.

(2) Method of amortization of actuarial gain or loss and past service costs
The actuarial gain or loss is amortized starting from the year after such an actuarial loss is determined on a straight-line basis over certain periods (mainly 12 years) within the average remaining service periods.

Past service costs are amortized on a straight-line basis over certain periods (mainly 12 years) within the average remaining service periods.

(3) Application of a simplified method to small businesses
For the calculation of liabilities concerning retirement benefits and retirement benefit expenses, some consolidated subsidiaries have adopted a simplified method, which deems term-end amounts payable for voluntary retirement related to retirement benefits as retirement benefit obligations.

(q) Significant Revenue and Expense Recognition Standards
Subsidiaries that have adopted IFRS have applied IFRS 15 "Revenue from Contracts with Customers," and recognize revenue in an amount that reflects the consideration which they expect to receive in exchange for goods or services at the time the control of the promised goods or services is transferred to the customer.

(r) Income Taxes
Income taxes consist of taxes on corporation, enterprises, and inhabitants. The provision for income taxes is computed based on the pretax income of the Company and each of its consolidated subsidiaries with certain adjustments required for consolidation and tax purposes. The asset and liability approach is used to recognize deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the carrying amounts and the tax bases of assets and liabilities. (Valuation allowances are recorded to reduce deferred tax assets based on the assessment of the realizability of the tax benefits.)

Application of the Consolidated Taxation System
The Company and certain domestic subsidiaries adopt the consolidated taxation system.

Application of Tax Effect Accounting for the Transition from the Consolidated Taxation System to the Group Tax Sharing System
With regard to the items subject to the transition to the group tax sharing system created under the "Act on Partial Revision of the Income Tax Act, etc." (Act No. 8 of 2020) and a review of the non-consolidated taxation system in line with the transition to the group tax sharing system, the Company and certain domestic subsidiaries have not applied the provisions of Paragraph 44 of the "Implementation Guidance on Tax Effect Accounting" (ASBJ Guidance No. 28, February 16, 2018) and have recorded the amounts of deferred tax assets and deferred tax liabilities based on the provisions of the tax laws before the revision, as allowed in the treatment of Paragraph 3 of the "Treatment of Tax Effect Accounting for the Transition from the Consolidated Taxation System to the Group Tax Sharing System" (ASBJ PITF No. 39, March 31, 2020).

(s) Derivative Financial Instruments and Hedge Accounting
The Company and certain subsidiaries state all derivative financial instruments at fair value and recognize changes in fair value as gains or losses unless the derivative financial instruments are used for hedging purposes.

If the derivative financial instruments meet certain hedging criteria, the Company and certain subsidiaries defer the recognition of gains or losses resulting from changes in the fair value of derivative financial instruments until the related gains or losses on hedged items are recognized.

However, when forward exchange contracts meet certain hedging criteria, the hedged items are stated by the forward exchange contract rate. If interest rate swap contracts meet certain hedging criteria, the net amount to be paid or received under the interest rate swap contracts is added to or deducted from the interest on the assets or liabilities for which the interest rate swap contracts were executed.

Subsidiaries that have adopted IFRS use fair value hedges and cash flow hedges.

(t) Reclassifications
Certain reclassifications have been made in the 2020 financial statements to conform to the presentation of 2021.

3. SIGNIFICANT ACCOUNTING ESTIMATES

Appropriateness of the Company's judgment concerning the identification of an impairment indicator for intangible fixed assets including goodwill recognized as a result of acquiring Showa Denko Materials Co., Ltd. as a consolidated subsidiary

(a) Amounts Recorded in the Consolidated Financial Statements for the Current Consolidated Fiscal Year
In the consolidated balance sheets for the current consolidated fiscal year, goodwill related to making Showa Denko Materials Co., Ltd. (hereinafter referred to as "SDMC") a consolidated subsidiary of ¥309,659 million (US$2,692,214 thousand), customer related assets of ¥139,799 million (US$1,215,434 thousand), and other intangible fixed assets of ¥44,017 million (US$382,693 thousand) have been recorded.

(b) Information on the Contents of Significant Accounting Estimates Related to Identified Items
The Companies use a larger unit that includes goodwill allocated to the asset group related to the business (hereinafter referred to as the "Asset Group Including Goodwill") to identify an indication of impairment of goodwill, decide whether to recognize impairment losses, and measure them.

Intangible fixed assets including goodwill recognized as the excess earnings potential of SDMC are amortized on a systematic basis. However, it is determined that an impairment indicator exists, if the business performance set forth in the original business plan developed when the Company acquired SDMC as its consolidated subsidiary has not been achieved, and therefore there have been, or are expected to be, events such as operating losses or continuous negative cash flows, a significant deterioration of the business environment and a change that may significantly decrease the recoverable amount. Whenever there is an impairment indicator for these intangible fixed assets including goodwill, they need to be tested for impairment by comparing the undiscounted future cash flows that are expected to be generated from the related Asset Group Including Goodwill with their carrying amounts. If the recognition of an impairment loss is deemed necessary, the carrying amount is reduced to the recoverable amount, and the resulting decrease in the carrying amount is measured as an impairment loss.

The Companies assessed the business results of the Asset Group Including Goodwill through this fiscal year and examined the business plans for the subsequent fiscal years, considering whether the aforementioned events had occurred or are expected to occur. As a result, the Companies determined that there was no impairment indicator for this fiscal year.

The business plan used in decisions on indication of impairment includes key assumptions such as sales increase associated with growth of the markets related to the Asset Group Including Goodwill. This assumption, which is affected by factors such as changes in the market environment, involves uncertainties, and is likely to have a significant impact on the evaluation of intangible fixed assets including goodwill in the consolidated financial statements for the following consolidated fiscal year. As long as the above assumption changes within a reasonable range, the Companies assessed that there is little possibility of an indication of impairment to occur in relation to the Asset Group Including Goodwill.

4. ADDITIONAL INFORMATION

(a) Board Benefit Trust (BBT)

Based on the resolution at the 107th ordinary general meeting of shareholders held on March 30, 2016, the Company introduced a new stock compensation plan called the Board Benefit Trust (BBT) ("the Scheme") for Directors and Corporate Officers on May 11, 2016.

Following the resolution of the Board of Directors on March 5, 2019, the Company decided to include its Councilors within the scope of the Scheme and revised the maximum amount of funds the Company will contribute to the trust, which are to be used by the trust to acquire shares in the company.

(1) Outline of the transaction

In the Scheme, the shares of the Company are granted to its Directors (excluding outside Directors) Corporate Officers, and Councilors pursuant to the Director Share Grant Regulations set forth by the Company.

The Company grants performance-linked points to its Directors, Corporate Officers, and Councilors every year, and grants shares of the Company to them based on the number of points granted when they resign from the Company. Provided that, however, with regard to a certain portion of the points, an amount of money corresponding to the prevailing market price of the Company's shares will be paid to any Director, Corporate Officer, or Councilor meeting the relevant requirements set forth in the Director Share Grant Regulations. The Company's shares that are granted to Directors, Corporate Officers, and Councilors, including those to be granted in the future, shall be acquired by the trust using the entrusted funds and separately managed as trusted assets.

For the accounting treatment related to this trust agreement, the Company applied the gross method in which the assets and liabilities of the trust are recorded as assets and liabilities in the balance sheet by referring to the Practical Solution on Transactions of Delivering the Company's Own Stock to Employees etc. through Trusts (ASBJ PITF No. 30, issued on March 26, 2015).

(2) Residual shares of the company in the trust

Residual shares of the Company in the trust have been recorded as treasury stock under net assets at the book value in the trust (excluding the amount of ancillary expenses). The book value and the number of such treasury stock were ¥305 million (US$2,648 thousand) and 271,000 shares at the end of the fiscal year ended December 31, 2021, and ¥312 million and 277,300 shares at the end of the fiscal year ended December 31, 2020, respectively.

(b) Accounting Estimates in Conjunction with the Spread of the COVID-19 pandemic

The worldwide COVID-19 pandemic has caused the Company's customers in certain businesses, specifically manufacturing, to suspend production or to reduce production volume. This, in turn, has affected the Companies' performance and financial condition. As it continues to be difficult to anticipate when the pandemic will end, accounting estimates are made on the valuation of noncurrent assets including goodwill and the recoverability of deferred tax assets on the assumption that the Companies' performance and financial conditions will recover to the levels prior to the pandemic in one to two years.

(c) Changes in Reportable Segments

In the current consolidated fiscal year, the Company operated in seven reportable segments, comprising the six segments of "Petrochemicals," "Chemicals," "Electronics," "Inorganics," "Aluminum," and "Others" added with the "Showa Denko Materials" segment, which is the business group of Showa Denko Materials Co., Ltd. with the Company's subsidiary HC Holdings K.K. being the parent company. In conjunction with the organization restructuring with the aim of accelerating integration of the Company and the Showa Denko Materials Co., Ltd. and promoting efficient management as the Showa Denko Group, decisions were made to review the Company's internal management classification. Accordingly, "Semiconductor and Electronic Materials," "Mobility," "Innovation Enabling Materials," and "Chemicals" will be the Company's four reportable segments from the following consolidated fiscal year.

The amounts of net sales, income or loss, and other items by reportable segments for the current consolidated fiscal year based on segments after the change are currently under calculation.

5. CHANGES IN ACCOUNTING POLICIES

(a) New Accounting Standards Not Yet Applied

(1) "Accounting Standard for Revenue Recognition" (ASBJ Statement No. 29, March 31, 2020. Accounting Standards Board of Japan), "Implementation Guidance on Accounting Standard for Revenue Recognition" (ASBJ Guidance No. 30, March 31, 2020. Accounting Standards Board of Japan), and "Implementation Guidance on Disclosures about Fair Value of Financial Instruments" (ASBJ Guidance No. 19, March 31, 2020. Accounting Standards Board of Japan)

(i) Overview

The International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) jointly developed a comprehensive accounting standard for revenue recognition, and published "Revenue from Contracts with Customers" (IFRS 15 at IASB, Topic 606 at FASB) in May 2014. Given that IFRS 15 will be applied to fiscal years starting on or after January 1, 2018 and Topic 606 will be applied to fiscal years starting on or after December 15, 2017, the Accounting Standards Board of Japan developed a comprehensive accounting standard for revenue recognition and published them together with implementation guidance. The basic policy of the Accounting Standards Board of Japan in developing the accounting standard for revenue recognition is to establish an accounting standard with the incorporation of the basic principles of IFRS 15 as a starting point from the perspective of comparability between financial statements, which is one of the benefits of seeking consistency with IFRS 15, and to add alternative treatments if there are any matters in Japanese practices as far as the comparability is not hindered.

(ii) Scheduled date of application

The standard will be applied from the beginning of the fiscal year 2022.

(iii) Impact of application

The impact of the application of the accounting standard and implementation guidance for revenue recognition on the consolidated financial statements is currently under review.

(2) "Accounting Standard for Fair Value Measurement" (ASBJ Statement No. 30, July 4, 2019), "Implementation Guidance on Accounting Standard for Fair Value Measurement" (ASBJ Guidance No. 31, July 4, 2019), "Accounting Standard for Measurement of Inventories" (ASBJ Statement No. 9, July 4, 2019), "Accounting Standard for Financial Instruments" (ASBJ Statement No. 10, July 4, 2019) and "Implementation Guidance on Disclosures about Fair Value of Financial Instruments" (ASBJ Guidance No. 19, March 31, 2020)

(i) Overview

"Accounting Standard for Fair Value Measurement" and "Implementation Guidance on Accounting Standard for Fair Value Measurement" (hereinafter referred to as "Fair Value Measurement Accounting Standards, etc.") were developed to increase the comparability with international accounting standards, and guidance and other rules were established with regard to the method for fair value measurement. Fair Value Measurement Accounting Standards, etc., will be applicable for fair values of the following items:

- Financial instruments included in "Accounting Standard for Financial Instruments"
- Inventories held for trading purposes included in "Accounting Standard for Measurement of Inventories"

In addition, "Implementation Guidance on Disclosures about Fair Value of Financial Instruments" was revised to include notes regarding the breakdown by level of fair values of financial instruments.

(ii) Scheduled date of application

The standard will be applied from the beginning of the fiscal year 2022.

(iii) Impact of application

The impact of the application on the consolidated financial statements is currently under review.

(3) "Practical Solution on the Accounting and Disclosure Under the Group Tax Sharing System" (ASBJ PITF No.42, August 12, 2021)

(i) Overview

Following the review of the consolidated taxation system in line with the transition to the group tax sharing system under the "Act on Partial Revision of the Income Tax Act, etc." (Act No. 8 of 2020), which was formed on March 27, 2020, the practical solution was issued by ASBJ with the aim of clarifying the treatment of the accounting and disclosure for corporate taxes and local corporate taxes as well as tax effect accounting when the group tax sharing system is applied.

(ii) Scheduled date of application

The practical solution will be applied from the beginning of the fiscal year 2023.

(iii) Impact of application

The impact of the application on the consolidated financial statements is currently under review.

(b) Changes in Presentation

Application of "Accounting Standard for Disclosure of Accounting Estimates"

The "Accounting Standard for Disclosure of Accounting Estimates" (ASBJ Statement No. 31, March 31, 2020) has been applied from the current consolidated fiscal year, and notes on accounting estimates are provided. These notes do not include details for the previous consolidated fiscal year in accordance with the provisional treatment stipulated in proviso of Paragraph 11 of this Accounting Standard.

6. JAPANESE YEN AND TRANSLATION INTO U.S. DOLLARS

The Companies' accounting records are maintained in yen. Yen amounts included in the financial statements are rounded to the nearest one million unit. Therefore, the total and subtotal amounts presented in the financial statements may not equal the exact sum of the individual balances. The U.S. dollar amounts appearing in the accompanying financial statements and notes thereto represent the arithmetical results of translating yen into U.S. dollars at the rate of ¥115.02 to US$1.00, the approximate rate of exchange as at December 31, 2021. The inclusion of such U.S. dollar amounts is solely for the convenience of readers; it does not carry with it any implication that yen amounts have been or could be converted into U.S. dollars at that rate.

7. CASH FLOW STATEMENTS

(a) Cash and Cash Equivalents

Cash and deposits as of December 31, 2021 and 2020 on the consolidated balance sheets and cash equivalents as at December 31, 2021 and 2020 on the consolidated statements of cash flows were reconciled as follows:

	Millions of yen		Thousands of U.S. dollars
	2021	2020	**2021**
Cash and deposits	**¥ 236,237**	¥ 198,982	**$ 2,053,875**
Original maturities more than three months	**(1,299)**	(1,055)	**(11,290)**
Cash and cash equivalents	**¥ 234,938**	¥ 197,928	**$ 2,042,585**

(b) Assets and Liabilities of Newly Consolidated Subsidiaries through the Acquisition of Shares

As of December 31, 2021

Not applicable.

As of December 31, 2020

A breakdown of the major assets and liabilities at the time of the initial consolidation of Showa Denko Materials Co., Ltd. and its 90 subsidiaries, obtained through a share acquisition, as well as the acquisition values and expenditures for the acquisition (net amount) were as follows:

	Millions of yen
Current assets	¥315,505
Noncurrent assets	604,006
Goodwill	365,123
Current liabilities	(159,969)
Noncurrent liabilities	(152,292)
Non-controlling interests	(8,333)
Acquisition value of shares of the acquired company	¥964,040
Cash and cash equivalents of the acquired company	(73,809)
Less: Expenditures for the acquisition	¥890,230

(c) Assets and Liabilities of Companies that Ceased to be Consolidated Subsidiaries of the Company due to Sale of Shares

As of December 31, 2021

(1) Transfer of investments in subsidiaries

A breakdown of the assets and liabilities at the time of the sale of shares in SHOKO CO., LTD. and its 4 subsidiaries, when they ceased to be consolidated subsidiaries due to the sale, the sale price of the shares, and proceeds from the sale were as follows:

	Millions of yen	Thousands of U.S. dollars
Current assets	¥ 42,918	$373,132
Noncurrent assets	6,344	55,158
Current liabilities	(21,179)	(184,137)
Noncurrent liabilities	(15,935)	(138,542)
Non-controlling interests	(7,155)	(62,208)
Investment accounts after sales of shares	(1,168)	(10,157)
Decrease in retained earnings due to exclusion from consolidation	(690)	(5,998)
Loss on sales of shares in subsidiaries and associates	(332)	(2,886)
Other	(287)	(2,494)
Sale price of shares in the sold company	¥ 2,515	$ 21,867
Cash and cash equivalents of the sold company	(2,297)	(19,972)
Less: Proceeds from sale of the sold company	¥ 218	$ 1,895

(2) Transfer of aluminum can business

A breakdown of assets and liabilities at the time of the sale due to the transfer of the aluminum can business, the sale price of the shares, and proceeds from the sale were as follows:

	Millions of yen	Thousands of U.S. dollars
Current assets	¥ 27,135	$235,919
Noncurrent assets	26,385	229,391
Current liabilities	(14,317)	(124,474)
Noncurrent liabilities	(584)	(5,074)
Non-controlling interests	(29,766)	(258,790)
Gain on sale of businesses	9,061	78,780
Other	184	1,600
Sale price of shares in the sold company	¥ 18,099	$157,351
Cash and cash equivalents of the sold company	(4,200)	(36,517)
Less: Proceeds from sale of the sold company	¥ 13,898	$120,834

(3) Transfer of aluminum rolling business

A breakdown of assets and liabilities at the time of the sale due to the transfer of the aluminum rolling business, the sale price of the shares, and proceeds from the sale were as follows:

	Millions of yen	Thousands of U.S. dollars
Current assets	¥ 8,999	$ 78,237
Noncurrent assets	9,514	82,720
Current liabilities	(978)	(8,503)
Noncurrent liabilities	(101)	(878)
Loss on sale of businesses	(10,345)	(89,937)
Other	(559)	(4,859)
Sale price of shares in the sold company	¥ 6,531	$ 56,780
Securities received as consideration	(2,312)	(20,099)
Cash and cash equivalents of the sold company	(1,944)	(16,902)
Less: Proceeds from sale of the sold company	¥ 2,275	$ 19,780

(4) Transfer of printed wiring board business

A breakdown of assets and liabilities at the time of the sale due to the transfer of the printed wiring board business, the sale price of the shares, and proceeds from the sale were as follows:

	Millions of yen	Thousands of U.S. dollars
Current assets	¥ 19,316	$167,936
Noncurrent assets	19,465	169,231
Current liabilities	(7,555)	(65,684)
Noncurrent liabilities	(2,787)	(24,231)
Accumulated other comprehensive income	2,466	21,440
Loss on sale of businesses	(1,733)	(15,067)
Other	(17)	(148)
Sale price of shares in the sold company	¥ 29,155	$253,478
Cash and cash equivalents of the sold company	(6,103)	(53,060)
Less: Proceeds from sale of the sold company	¥ 23,052	$200,417

(5) Transfer of energy storage devices and systems business

A breakdown of assets and liabilities at the time of the sale due to the transfer of the energy storage devices and systems business, the sale price of the shares, and proceeds from the sale were as follows:

	Millions of yen	Thousands of U.S. dollars
Current assets	¥ 57,524	$500,119
Noncurrent assets	31,698	275,585
Current liabilities	(36,280)	(315,421)
Noncurrent liabilities	(4,619)	(40,159)
Accumulated other comprehensive income	(3,650)	(31,733)
Gain on sale of businesses	4,289	37,289
Other	(198)	(1,721)
Sale price of shares in the sold company	¥ 48,764	¥423,958
Cash and cash equivalents of the sold company	(7,707)	(67,006)
Less: Proceeds from sale of the sold company	¥ 41,057	¥356,952

As of December 31, 2020

Not applicable.

8. FINANCIAL INSTRUMENTS

(a) Overview

(1) Management policy relating to financial instruments

The Companies finance necessary long-term funds by bank loans and bond issues following the capital investment plans and finance short-term operating funds by bank loans and commercial paper. Temporary excess funds are invested exclusively in financial instruments which have fixed returns and low risk of falling below par values. The Companies use derivative transactions to hedge the following risks and do not enter into derivative transactions for speculative purposes.

(2) Types of financial instruments and related risks

Operating receivables, such as notes and accounts receivable, are exposed to credit risk. Foreign-currency-denominated accounts receivable incurred through exports are exposed to foreign currency fluctuation risk. However, the Companies hedge the risk by utilizing forward exchange contracts, currency options, and currency swaps based on internal policies that set out foreign currency risk management principles.

Marketable securities and investment securities mainly consist of the stocks of partner companies to maintain and strengthen their business relationships and are exposed to market fluctuation risk.

Operating payables, such as notes and accounts payable-trade and other, are due within one year. Foreign-currency-denominated accounts payable incurred through imports of raw materials are exposed to foreign currency fluctuation risk. The Companies hedge the risk by utilizing forward exchange contracts following internal policies that set out the foreign currency risk management principles. Short-term debt and commercial paper are mainly used to finance short-term operating funds, and long-term debts and bonds are mainly used to finance equipment funds. Since some loans have financial covenants attached, they may affect liquidity risk related to financing. Variable interest rate loans are exposed to interest rate fluctuation risk. However, certain loans use interest rate swaps to hedge the risk.

The Companies utilize derivative transactions, such as forward exchange contracts, currency options, and currency swaps, to hedge the foreign currency fluctuation risk of operating receivables and payables denominated in foreign currencies and financing transactions denominated in foreign currencies. Interest rate swaps are utilized to hedge the interest rate fluctuation risk, and forward contracts and commodity swaps are utilized to hedge the market fluctuation risk.

(3) Risk management relating to financial instruments

(i) Credit risk management (risk of default by the counterparties)

The Company follows internal policies that set out accounts receivable management principles. The compliance department works with the sales division in each sector and monitors the customers' credit conditions periodically and reviews the sales policy checking the sales volume and balances. The Company takes measures to obtain information on and minimize the credit risk that may arise due to the deterioration in the financial condition of their customers. Consolidated subsidiaries monitor their customers' financial and credit conditions based on their internal policies.

The held-to-maturity debts are limited to only highly rated securities.

The Companies utilize derivative transactions only with creditworthy financial institutions and trading companies to minimize credit risk.

The maximum credit risk as of December 31, 2021 is disclosed as the balance sheet amount of financial instruments exposed to credit risk.

(ii) Market risk management (risk of fluctuations in foreign currency and interest rates)

For operating receivables and payables and loans denominated in foreign currencies, the Company and certain consolidated subsidiaries utilize forward exchange contracts, currency options, and currency swaps to hedge some of the foreign currency fluctuation risk, which is categorized by currency and maturity date. The Company and certain consolidated subsidiaries utilize currency swaps to hedge the interest rate fluctuation risk of loans.

For marketable securities and investment securities, the Companies regularly review the fair value and issuers' financial conditions, and review the Companies' portfolio on an ongoing basis, except for held-to-maturity debt securities, according to market conditions and the business relationships with counterparties.

The Company has internal management policies that set out the approval authorities and procedures of the derivative transactions.

The derivative transactions are carried out based on the appropriate approver set out in the internal policies. For currency-related derivative transactions, each division and the treasury department perform and manage transactions and report to the director in charge periodically. For interest-related derivative transactions, the treasury department performs and manages the transactions and reports to the director in charge periodically. For commodity-related derivative transactions, each division performs and manages the transactions, and reports to the director in charge periodically. Consolidated subsidiaries perform and manage derivative transactions based on their internal management standards.

(iii) Liquidity risk management (risk of default on payment due dates)

The Company manages liquidity risk by requiring the treasury department to prepare and update cash plans, based on the schedule for cash inflows and disbursements in each division. In addition, the Company signs commitment line contracts and makes other arrangements with financial institutions to secure the necessary liquidity. Consolidated subsidiaries manage their liquidity risk through similar procedures.

(4) Supplemental explanation on fair value of financial instruments

Along with the values being based on market prices, the fair value of financial instruments includes values that are reasonably calculated in case market prices do not exist. As the calculation of those values uses certain assumptions, those values may vary in the case of different assumptions being applied. Also, for the contract amount and others regarding derivative transactions described in Note 10. DERIVATIVE FINANCIAL INSTRUMENTS, the contract amount itself does not indicate market risk related to derivative transactions.

(b) Fair Value of Financial Instruments

As at December 31, 2021 and 2020, book value, fair value, and difference were as follows.

The financial instruments whose fair value is extremely difficult to determine are not included below.

Year ended December 31, 2021	Millions of yen		
	Book value	Fair value	Difference
(1) Cash and deposits	¥ 236,237	¥ 236,237	¥ —
(2) Notes and accounts receivable-trade	278,641	278,641	—
(3) Marketable securities and investment securities	19,738	19,738	—
Total assets	¥ 534,616	¥ 534,616	¥ —
(1) Notes and accounts payable-trade	¥ 207,745	¥ 207,745	¥ —
(2) Short-term debt	74,451	74,451	—
(3) Current portion of long-term debt	72,857	72,907	50
(4) Accounts payable-other	54,728	54,728	—
(5) Long-term debt less current portion	683,448	682,953	(495)
Total liabilities	¥1,093,229	¥1,092,784	¥(444)
Derivative transactions*	¥ 1,160	¥ 1,160	¥ —

Year ended December 31, 2020	Millions of yen		
	Book value	Fair value	Difference
(1) Cash and deposits	¥ 198,982	¥ 198,982	¥ —
(2) Notes and accounts receivable-trade	271,628	271,628	—
(3) Marketable securities and investment securities	27,576	27,576	—
Total assets	¥ 498,187	¥ 498,187	¥ —
(1) Notes and accounts payable-trade	¥ 164,356	¥ 164,356	¥ —
(2) Short-term debt	72,645	72,645	—
(3) Current portion of long-term debt	56,387	56,419	32
(4) Accounts payable-other	43,253	43,253	—
(5) Long-term debt less current portion	906,365	906,666	301
Total liabilities	¥1,243,006	¥1,243,339	¥333
Derivative transactions*	¥ 1,218	¥ 1,218	¥ —

Year ended December 31, 2021	Thousands of U.S. dollars		
	Book value	Fair value	Difference
(1) Cash and deposits	**$2,053,875**	**$2,053,875**	**$ —**
(2) Notes and accounts receivable-trade	**2,422,540**	**2,422,540**	**—**
(3) Marketable securities and investment securities	**171,607**	**171,607**	**—**
Total assets	**$4,648,023**	**$4,648,023**	**$ —**
(1) Notes and accounts payable-trade	**$1,806,167**	**$1,806,167**	**$ —**
(2) Short-term debt	**647,287**	**647,287**	**—**
(3) Current portion of long-term debt	**633,425**	**633,863**	**438**
(4) Accounts payable-other	**475,816**	**475,816**	**—**
(5) Long-term debt less current portion	**5,941,991**	**5,937,689**	**(4,302)**
Total liabilities	**$9,504,685**	**$9,500,821**	**$(3,864)**
Derivative transactions*	**$ 10,082**	**$ 10,082**	**$ —**

*Derivative assets and liabilities are on a net basis.

Notes: 1. Valuation method for financial instruments and information on marketable securities and derivative transactions

Assets

Cash and deposits and Notes and accounts receivable-trade

The book value is deemed to approximate the fair value since these are scheduled to be settled in a short period of time.

Marketable securities and investment securities

The fair value of these securities is based on the price on stock exchanges. Refer to Note 9. SECURITIES regarding the securities categorized by holding purposes.

Liabilities

Notes and accounts payable-trade, Short-term debt, Commercial paper (included in the above Short-term debt), and Accounts payable-other

The book value is deemed to approximate the fair value since these are scheduled to be settled in a short period of time.

Current portion of long-term debt and Long-term debt (included in the above Long-term debt less current portion)

The fair value is measured as the net present value of the estimated cash flows by discounting the principal and interest value using the interest rate applied to the new loans. Parts of the long-term loans are variable rate loans, and they are subject to special treatment of interest rate swaps (refer to Note 10. DERIVATIVE FINANCIAL INSTRUMENTS); the fair value is measured as the net present value of the estimated cash flows by discounting the total amount of principal and interest processed as interest rate swaps using the interest rate applied to the new loans

Current portion of bonds (included in the above Current portion of long-term debt) and Bonds (included in the above Long-term debt less current portion)

The fair value is based on the market prices.

Derivative transactions

Refer to Note 10. DERIVATIVE FINANCIAL INSTRUMENTS.

Notes: 2. Financial instruments for which fair value is extremely difficult to determine

	Millions of yen		Thousands of U.S. dollars
	2021	2020	**2021**
Non-listed equity securities	**¥ 84,063**	¥ 78,856	**$ 730,853**

These securities are not included in the above Marketable securities and investment securities, as it is extremely difficult to determine the fair value. As there was no quoted market value, estimating the future cash flows is deemed to be practically impossible.

Notes: 3. Redemption schedule for financial assets and securities with maturities

Year ended December 31, 2021	Millions of yen			
	Due in 1 year or less	Due after 1 year through 5 years	Due after 5 years through 10 years	Due after 10 years
Cash and deposits	**¥ 236,237**	**¥ —**	**¥ —**	**¥ —**
Notes and accounts receivable-trade	**278,641**	**—**	**—**	**—**
Total	**¥ 514,877**	**¥ —**	**¥ —**	**¥ —**

Year ended December 31, 2020	Millions of yen			
	Due in 1 year or less	Due after 1 year through 5 years	Due after 5 years through 10 years	Due after 10 years
Cash and deposits	¥ 198,982	¥ —	¥ —	¥ —
Notes and accounts receivable-trade	271,628	¥ —	¥ —	¥ —
Marketable securities and investment securities:				
Held-to-maturity debt securities				
Government and local bonds and others	20	—	—	—
Total	¥ 470,631	¥ —	¥ —	¥ —

Year ended December 31, 2021	Thousands of U.S. dollars			
	Due in 1 year or less	Due after 1 year through 5 years	Due after 5 years through 10 years	Due after 10 years
Cash and deposits	**$ 2,053,875**	**$ —**	**$ —**	**$ —**
Notes and accounts receivable-trade	**2,422,540**	**—**	**—**	**—**
Total	**$ 4,476,416**	**$ —**	**$ —**	**$ —**

Notes: 4. Scheduled maturities of bonds and long-term debt after December 31, 2021 and 2020

Year ended December 31, 2021	Millions of yen					
	Due in 1 year or less	Due after 1 year through 2 years	Due after 2 years through 3 years	Due after 3 years through 4 years	Due after 4 years through 5 years	Due after 5 years
(1) Short-term debt	**¥ 74,451**	**¥ —**	**¥ —**	**¥ —**	**¥ —**	**¥ —**
(2) Long-term debt	**72,858**	**54,461**	**80,488**	**185,284**	**68,770**	**294,500**
Total	**¥147,308**	**¥ 54,461**	**¥ 80,488**	**¥185,284**	**¥ 68,770**	**¥294,500**

Year ended December 31, 2020	Millions of yen					
	Due in 1 year or less	Due after 1 year through 2 years	Due after 2 years through 3 years	Due after 3 years through 4 years	Due after 4 years through 5 years	Due after 5 years
(1) Short-term debt	¥ 72,645	¥ —	¥ —	¥ —	¥ —	¥ —
(2) Long-term debt	56,387	75,338	55,765	49,186	355,825	370,323
Total	¥129,032	¥ 75,338	¥ 55,765	¥ 49,186	¥ 355,825	¥ 370,323

Year ended December 31, 2021	Thousands of U.S. dollars					
	Due in 1 year or less	Due after 1 year through 2 years	Due after 2 years through 3 years	Due after 3 years through 4 years	Due after 4 years through 5 years	Due after 5 years
(1) Short-term debt	**$ 647,287**	**$ —**	**$ —**	**$ —**	**$ —**	**$ —**
(2) Long-term debt	**633,434**	**473,494**	**699,770**	**1,610,885**	**597,896**	**2,560,424**
Total	**$ 1,280,720**	**$ 473,494**	**$ 699,770**	**$ 1,610,885**	**$ 597,896**	**$ 2,560,424**

9. SECURITIES

(a) Available-for-sale Securities

Year ended December 31, 2021	Millions of yen		
	Book value	Acquisition cost	Difference
Available-for-sale securities whose book value exceeds their acquisition cost			
Equity securities	**¥ 14,962**	**¥ 10,050**	**¥ 4,912**
Other	**183**	**164**	**20**
Available-for-sale securities whose book value is less than their acquisition cost			
Equity securities	**4,593**	**5,243**	**(650)**
Total	**¥ 19,738**	**¥ 15,456**	**¥ 4,283**

Year ended December 31, 2020	Millions of yen		
	Book value	Acquisition cost	Difference
Available-for-sale securities whose book value exceeds their acquisition cost			
Equity securities	¥ 20,549	¥ 11,951	¥ 8,599
Other	183	159	24
Available-for-sale securities whose book value is less than their acquisition cost			
Equity securities	6,824	8,986	(2,162)
Total	¥ 27,556	¥ 21,096	¥ 6,460

Year ended December 31, 2021	Thousands of U.S. dollars		
	Book value	Acquisition cost	Difference
Available-for-sale securities whose book value exceeds their acquisition cost			
Equity securities	**$ 130,081**	**$ 87,372**	**$ 42,709**
Other	**1,595**	**1,422**	**174**
Available-for-sale securities whose book value is less than their acquisition cost			
Equity securities	**39,931**	**45,580**	**(5,649)**
Total	**$ 171,607**	**$ 134,373**	**$ 37,234**

(b) Available-for-sale Securities Sold in the Years Ended December 31, 2021 and 2020:

Year ended December 31, 2021	Millions of yen		
	Sales	Gross gain	Gross loss
Equity securities	**¥ 7,402**	**¥ 4,727**	**¥ (154)**
Total	**¥ 7,402**	**¥ 4,727**	**¥ (154)**

Year ended December 31, 2020	Millions of yen		
	Sales	Gross gain	Gross loss
Equity securities	¥ 22,866	¥ 4,959	¥ (2,004)
Total	¥ 22,866	¥ 4,959	¥ (2,004)

Year ended December 31, 2021	Thousands of U.S. dollars		
	Sales	Gross gain	Gross loss
Equity securities	**$ 64,354**	**$ 41,099**	**$ (1,337)**
Total	**$ 64,354**	**$ 41,099**	**$ (1,337)**

(c) Impairment of securities

For the years ended December 31, 2021 and 2020, the Companies recorded an impairment loss of ¥713 million (US$6,196 thousand) on available-for-sale securities and ¥315 million on available-for-sale securities with fair market values, respectively.

Securities are deemed to have "substantially declined" when their fair values have declined 30% or more. When their fair values have declined 50% or more, the impairment losses are recorded on those securities. When their fair values have declined between 30% and 50%, the impairment losses are recorded on those securities unless such values are considered to be recoverable on an individual basis.

10. DERIVATIVE FINANCIAL INSTRUMENTS

(a) Derivative Transactions to Which Hedge Accounting is Not Applied

	Millions of yen								Thousands of U.S. dollars			
	2021				2020				**2021**			
	Contract amount	Contract amount over 1 year	Fair value	Valuation gain (loss)	Contract amount	Contract amount over 1 year	Fair value	Valuation gain (loss)	Contract amount	Contract amount over 1 year	Fair value	Valuation gain (loss)
Currency related:												
Forward exchange contracts:												
Selling												
U.S. Dollar	**¥ 9,099**	**¥ —**	**¥ (102)**	**¥ (102)**	¥ 939	¥ —	¥ 11	¥ 11	**$ 79,107**	**$ —**	**$ (888)**	**$ (888)**
Euro	**5,670**	**—**	**(69)**	**(69)**	9,540	—	(13)	(13)	**49,297**	**—**	**(602)**	**(602)**
Swiss Franc	**—**	**—**	**—**	**—**	1,506	—	(1)	(1)	**—**	**—**	**—**	**—**
Yuan Renminbi	**19**	**—**	**(0)**	**(0)**	—	—	—	—	**162**	**—**	**(3)**	**(3)**
Currency options:												
Buying and selling												
U.S. Dollar	**¥12,206**	**¥ —**	**¥ (151)**	**¥ (151)**	¥16,013	¥ —	¥ 98	¥ 98	**$106,121**	**$ —**	**$ (1,313)**	**$ (1,313)**

Notes: Fair value calculation method:
1. Fair values of forward exchange contracts are stated by the forward exchange rates.
2. Fair values of currency options are measured at the quoted price obtained from the financial institutions.
3. Currency options are zero-cost option contracts, and call options and put options are shown as a lump sum because they are included in integrated contract.

(b) Derivative Transactions to Which Hedge Accounting is Applied

	Millions of yen						Thousands of U.S. dollars		
	2021			2020			**2021**		
	Contract amount	Contract amount over 1 year	Fair value	Contract amount	Contract amount over 1 year	Fair value	Contract amount	Contract amount over 1 year	Fair value
(1) Currency related:									
Principle method									
Forward exchange contracts:									
Buying									
U.S. Dollar	**¥11,329**	**¥ —**	**¥ 309**	¥10,581	¥1,454	¥ 31	**$98,498**	**$ —**	**$ 2,684**
Euro	**—**	**—**	**—**	9	—	0	**—**	**—**	**—**
Selling									
U.S. Dollar	**7,643**	**—**	**(82)**	2,638	—	6	**66,449**	**—**	**(713)**
Euro	**—**	**—**	**—**	5	—	(0)	**—**	**—**	**—**
Allocation method									
Forward exchange contracts:									
Buying									
U.S. Dollar	**¥ 1,553**	**¥ —**	**¥ —**	¥ 9,951	¥ —	¥ —	**$13,504**	**$ —**	**$ —**
Euro	**32**	**—**	**—**	42	—	—	**278**	**—**	**—**
Selling									
U.S. Dollar	**8,167**	**—**	**—**	2,932	—	—	**71,006**	**—**	**—**
Euro	**754**	**—**	**—**	428	—	—	**6,559**	**—**	**—**
Yuan Renminbi	**38**	**—**	**—**	1,406	—	—	**330**	**—**	**—**
Currency swaps:									
Receipt U.S. Dollar									
Payment Yen	**¥ 2,000**	**¥ —**	**¥ —**	¥ 2,000	¥2,000	¥ —	**$17,388**	**$ —**	**$ —**
Cash flow hedge									
Forward exchange contracts:									
Selling									
U.S. Dollar	**¥ 3,419**	**¥ —**	**¥ (24)**	¥ 1,051	¥ —	¥ 22	**$29,725**	**$ —**	**$ (209)**
Fair value hedge									
Forward exchange contracts:									
Selling									
U.S. Dollar	**¥ 2,269**	**¥ —**	**¥ (31)**	¥ 1,578	¥ —	¥ 33	**$19,727**	**$ —**	**$ (270)**
Euro	**10,142**	**—**	**(90)**	—	—	—	**88,176**	**—**	**(782)**
Mexican Peso	**2,053**	**—**	**(38)**	1,787	—	(162)	**17,849**	**—**	**(330)**
(2) Interest rate related:									
Special method									
Interest rate swaps:									
Receipt-variable rate/Payment-fixed rate	**¥ 2,600**	**¥2,600**	**¥ —**	¥ 2,600	¥2,600	¥ —	**$22,605**	**$22,605**	**$ —**
(3) Commodity related:									
Principle method									
Aluminum forward contracts:									
Buying	**¥ 5,953**	**¥ —**	**¥1,469**	¥ 9,998	¥1,971	¥1,172	**$51,756**	**$ —**	**$12,771**
Selling	**1,235**	**—**	**(80)**	857	—	(10)	**10,737**	**—**	**(692)**
Cash flow hedge									
Commodity swaps:									
Buying	**¥ —**	**¥ —**	**¥ —**	¥ 2,067	¥ —	¥ 9	**$ —**	**$ —**	**$ —**
Commodity future contracts:									
Buying	**¥ 1,012**	**¥ —**	**¥ 37**	¥ 689	¥ 21	¥ 19	**$ 8,798**	**$ —**	**$ 322**
Selling	**267**	**—**	**(2)**	225	—	4	**2,321**	**—**	**(17)**

Notes: 1. The main items hedged by forward exchange contracts are accounts payable for buying, accounts receivable for selling and long-term debt by interest rate swaps.
The main items hedged by aluminum forward transactions are aluminum metal transactions.
The main items hedged by commodity swaps and commodity future contracts are copper and lead purchase transactions.

2. Fair value calculation method:
The fair values of forward exchange contracts are stated by the forward exchange rates. The fair values of currency swaps are measured at the quoted price obtained from the financial institutions. The fair values of aluminum forward transactions are stated by forward quotations of the London Metal Exchange.
The fair values of commodity swaps and commodity future contracts are measured at the quoted price obtained from the financial institutions.

3. The fair values of forward exchange contracts and currency swaps that meet the allocation method criteria are reflected in the fair values of accounts receivable, accounts payable and debts of their hedged items.

4. The fair values of interest rate swaps that meet the special treatment criteria are reflected in the fair values of long-term debt of their hedged item.

11. EFFECT OF YEAR-END DATE ON FINANCIAL STATEMENTS

The year-end date of 2021, December 31, 2021, was a bank holiday. Although notes receivable and payable maturing on this date were accordingly settled on January 4, 2022, the Companies accounted for those notes in their financial statements as if they had been settled on the maturity date.

Notes outstanding as at December 31, 2021 and 2020 dealt with in the above-mentioned manner were as follows:

	Millions of yen		Thousands of U.S. dollars
	2021	2020	**2021**
Notes receivable	**¥ 351**	¥1,068	**$3,055**
Notes payable	**—**	608	**—**

12. SHORT-TERM DEBT AND LONG-TERM DEBT

As at December 31, 2021 and 2020, the short-term debt of the Companies consisted of the following:

	Millions of yen		Thousands of U.S. dollars
	2021	2020	**2021**
Bank loans at the average interest rate of 0.54%	**¥ 59,451**	¥ 62,645	**$ 516,875**
Commercial paper	**15,000**	10,000	**130,412**
Total	**¥ 74,451**	¥ 72,645	**$ 647,287**

As at December 31, 2021 and 2020, the long-term debt of the Companies consisted of the following:

	Millions of yen		Thousands of U.S. dollars
	2021	2020	**2021**
0.630% bonds due 2021 (*1)	**¥ —**	¥ 15,000	**$ —**
0.734% bonds due 2022 (*1)	**10,000**	10,000	**86,941**
0.200% bonds due 2021 (*1)	**—**	10,000	**—**
0.500% bonds due 2026 (*1)	**7,000**	7,000	**60,859**
0.190% bonds due 2024 (*1)	**10,000**	10,000	**86,941**
0.430% bonds due 2029 (*1)	**10,000**	10,000	**86,941**
0.040% bonds due 2024 (*1)	**30,000**	—	**260,824**
0.200% bonds due 2026 (*1)	**20,000**	—	**173,883**
0.300% bonds due 2028 (*1)	**5,000**	—	**43,471**
0.550% bonds due 2031 (*1)	**45,000**	—	**391,236**
1.191% bonds due 2022 (*2)	**9,999**	9,994	**86,933**
0.375% bonds due 2027 (*2)	**19,945**	19,935	**173,405**
Loans principally from banks and insurance companies due 2023 to 2028 at the average interest rate of 0.90%	**589,360**	870,823	**5,123,981**
	756,304	962,752	**6,575,416**
Less: current portion	**(72,857)**	(56,387)	**(633,425)**
Total	**¥683,448**	¥ 906,365	**$ 5,941,991**

*1 Showa Denko K.K.
*2 Showa Denko Materials Co., Ltd.

The aggregate annual maturities of the noncurrent portion of long-term debt were as follows:

Years ending December 31	Millions of yen	Thousands of U.S. dollars
2023	**¥ 54,461**	**$ 473,494**
2024	**80,488**	**699,770**
2025	**185,284**	**1,610,885**
2026	**68,770**	**597,896**
2027 and thereafter	**294,500**	**2,560,424**
Total	**¥683,503**	**$ 5,942,469**

As at December 31, 2021 and 2020, the assets pledged as collateral for long-term debt were as follows:

	Millions of yen		Thousands of U.S. dollars
	2021	2020	**2021**
Assets pledged as collateral			
Cash and deposits	**¥ 5,471**	¥ 10,548	**$ 47,566**
Notes and accounts receivable-trade	**—**	1,486	**—**
Inventories	**—**	3,146	**—**
Investment securities	**—**	134	**—**
Property, plant and equipment, less accumulated depreciation	**114,013**	127,712	**991,249**
Total	**¥119,484**	¥143,026	**$ 1,038,814**

In addition to the above, the following assets that have been eliminated as intercompany transactions have been pledged as collateral.

	Millions of yen		Thousands of U.S. dollars
	2021	2020	**2021**
Investments in subsidiaries	**¥ 983,957**	¥ 977,437	**$ 8,554,660**
Loans receivable from subsidiaries and affiliates	**141,625**	57,041	**1,231,308**

As at December 31, 2021 and 2020, the liabilities with collateral were as follows:

	Millions of yen		Thousands of U.S. dollars
	2021	2020	**2021**
Secured short-term debt and long-term debt			
Short-term debt	**¥ —**	¥ 577	**$ —**
Long-term debt	**209,951**	392,917	**1,825,343**
Other debt	**121**	1,456	**1,052**
Total	**¥210,072**	¥ 394,950	**$ 1,826,395**

As at December 31, 2021 and 2020, the non-recourse liabilities were as follows.
The following amounts are included in the amounts stated as collateral assets and secured liabilities above:

	Millions of yen		Thousands of U.S. dollars
	2021	2020	**2021**
Long-term debt	**¥ 209,700**	¥ 392,400	**$ 1,823,161**
Other debt	**121**	1,404	**1,052**
Total	**¥ 209,821**	¥ 393,804	**$ 1,824,213**

As at December 31, 2021 and 2020, the assets corresponding to the non-recourse liabilities were as follows:

	Millions of yen		Thousands of U.S. dollars
	2021	2020	**2021**
Cash and deposits	**¥ 209,700**	¥ 10,548	**$ 1,823,161**

In addition to the above, the following assets that have been eliminated as intercompany transactions have been pledged as collateral.

	Millions of yen		Thousands of U.S. dollars
	2021	2020	**2021**
Investments in subsidiaries	**¥ 983,957**	¥ 977,437	**$ 8,554,660**
Loans receivable from subsidiaries and affiliates	**141,625**	57,041	**1,231,308**

13. RETIREMENT BENEFITS

(a) Defined benefit pension plan, including the plans using the simplified method

(1) Reconciliation of opening and closing balance of retirement benefit obligation for the years ended December 31, 2021 and 2020 was as follows:

	Millions of yen		Thousands of U.S. dollars
	2021	2020	**2021**
Balance of retirement benefit obligation at the beginning of the year	**¥192,099**	¥102,553	**$ 1,670,133**
Service cost	**6,768**	4,971	**58,843**
Interest cost	**932**	574	**8,107**
Actuarial gain and loss	**(4,285)**	393	**(37,257)**
Retirement benefits paid	**(12,444)**	(9,134)	**(108,188)**
Past service cost	**115**	138	**1,002**
Increase from changes in scope of consolidation	**112**	92,888	**974**
Decrease from changes in scope of consolidation	**(16,627)**	(163)	**(144,557)**
Other	**484**	(121)	**4,212**
Balance of the retirement benefit obligation at the end of the year	**¥167,155**	¥192,099	**$ 1,453,268**

(2) Reconciliation of opening and closing balance of plan assets for the years ended December 31, 2021 and 2020 was as follows:

	Millions of yen		Thousands of U.S. dollars
	2021	2020	**2021**
Balance of plan assets at the beginning of the year	**¥188,533**	¥ 92,827	**$ 1,639,133**
Expected return on plan assets	**2,257**	1,822	**19,623**
Actuarial gain and loss	**8,205**	5,780	**71,338**
Contribution from employer	**6,330**	5,201	**55,030**
Retirement benefits paid	**(11,233)**	(7,597)	**(97,660)**
Increase from changes in scope of consolidation	**—**	90,303	**—**
Decrease from changes in scope of consolidation	**(11,895)**	—	**(103,417)**
Other	**522**	197	**4,542**
Balance of plan assets at the end of the year	**¥182,719**	¥188,533	**$ 1,588,588**

(3) Reconciliation of the ending balance of retirement benefit obligations and plan assets, and the net defined benefit liability and the net defined benefit asset for the years ended December 31, 2021 and 2020 was as follows:

	Millions of yen		Thousands of U.S. dollars
	2021	2020	**2021**
Funded retirement benefit obligations	**¥ 164,088**	¥ 179,789	**$ 1,426,604**
Plan assets	**(182,719)**	(188,533)	**(1,588,588)**
	(18,631)	(8,744)	**(161,985)**
Unfunded retirement benefit obligations	**3,067**	12,309	**26,661**
Net amount of relevant liabilities and assets on the consolidated balance sheets	**(15,565)**	3,566	**(135,323)**
Net defined benefit liability	**17,523**	24,750	**152,345**
Net defined benefit asset	**(33,088)**	(21,184)	**(287,668)**
Net amount of relevant liabilities and assets on the consolidated balance sheets	**(15,565)**	3,566	**(135,323)**

(4) Retirement benefit expenses and the components of the amounts thereof for the years ended December 31, 2021 and 2020 were as follows:

	Millions of yen		Thousands of U.S. dollars
	2021	2020	**2021**
Service cost	**¥ 6,768**	¥ 4,971	**$ 58,843**
Interest cost	**932**	574	**8,107**
Expected return on plan assets	**(2,257)**	(1,822)	**(19,623)**
Amortization of actuarial gain and loss	**29**	2,131	**252**
Amortization of past service cost	**108**	134	**942**
Retirement benefit expenses related to the defined benefit pension plan	**¥ 5,581**	¥ 5,988	**$ 48,521**

(5) Remeasurements of defined benefit plans

The components of items (before tax) reported under remeasurements of defined benefit plans for the years ended December 31, 2021 and 2020 were as follows:

	Millions of yen		Thousands of U.S. dollars
	2021	2020	**2021**
Past service cost	**¥ 7**	¥ 5	**$ 59**
Actuarial gain and loss	**(12,852)**	(7,522)	**(111,740)**
Total	**¥(12,845)**	¥ (7,517)	**$(111,680)**

(6) Accumulated remeasurements of defined benefit plans

The components of items (before tax) reported under accumulated remeasurements of defined benefit plans for the years ended December 31, 2021 and 2020 were as follows:

	Millions of yen		Thousands of U.S. dollars
	2021	2020	**2021**
Unrecognized past service cost	**¥ (8)**	¥ (15)	**$ (71)**
Unrecognized actuarial gain and loss	**(12,806)**	46	**(111,341)**
Total	**¥ (12,815)**	¥ 31	**$ (111,412)**

(7) Matters regarding plan assets

(i) Major content of the plan assets

The percentages of major asset types that account for the total plan assets as of December 31, 2021 and 2020 were as follows:

	Ratio	
	2021	2020
Bonds	**48 %**	50 %
Stocks	**28**	27
General accounts of life insurance company	**9**	9
Cash and deposits	**7**	7
Other	**8**	7
Total	**100 %**	100 %

(ii) Method for setting the long-term rate of expected return on plan assets

To determine the long-term rate of expected return on plan assets, the current and anticipated long-term yield rates of various assets that constitute the plan assets as well as the current and projected distribution of plan assets, have been taken into account.

(8) Matters regarding the assumptions for actuarial calculations

Key assumptions for actuarial calculations as of December 31, 2021 and 2020 were as follows:

	Ratio	
	2021	2020
Discount rate	**Mainly 0.4%**	Mainly 0.5%
Long-term rate of expected return on plan assets	**Mainly 1.8%**	Mainly 1.8%

(b) Defined contribution pension plan

The amounts required to be contributed by consolidated subsidiaries for the years ended December 31, 2021 and 2020 were ¥1,819 million (US$15,815 thousand), and ¥1,697 million, respectively.

14. INCOME TAXES

(a) As at December 31, 2021 and 2020, significant components of deferred tax assets and liabilities were as follows:

	Millions of yen		Thousands of U.S. dollars
	2021	2020	**2021**
Deferred tax assets:			
Tax loss carryforwards (Note 2)	**¥ 24,589**	¥ 21,366	**$ 213,783**
Impairment loss	**16,674**	22,110	**144,962**
Write-down of marketable and investment securities	**12,509**	16,184	**108,754**
Depreciation and amortization	**9,542**	5,492	**82,962**
Net defined benefit liability	**6,977**	9,610	**60,660**
Loss on valuation of inventories	**2,466**	1,519	**21,444**
Provision for bonuses	**2,070**	2,046	**17,995**
Undetermined accrued liabilities	**1,946**	1,983	**16,917**
Provision for repairs	**1,508**	975	**13,111**
Allowance for doubtful accounts	**694**	4,053	**6,032**
Other	**14,965**	16,794	**130,108**
Subtotal of deferred tax assets	**93,940**	102,133	**816,730**
Valuation allowance related to tax loss carryforwards (Note 2)	**(14,464)**	(11,711)	**(125,754)**
Valuation allowance related to the total of deductible temporary differences	**(39,555)**	(48,431)	**(343,893)**
Total valuation allowance (Note 1)	**(54,019)**	(60,143)	**(469,647)**
Total deferred tax assets	**39,921**	41,990	**347,082**
Deferred tax liabilities:			
Amount of revaluation from the book value	**(58,505)**	(66,543)	**(508,648)**
Net defined benefit asset	**(9,608)**	(6,388)	**(83,535)**
Special depreciation reserve	**(7,880)**	(7,175)	**(68,510)**
Foreign subsidiaries' undistributed retained earnings	**(4,333)**	(5,520)	**(37,668)**
Valuation difference on available-for-sale securities	**(1,658)**	(1,853)	**(14,411)**
Deferred gains or losses on hedges	**(508)**	(384)	**(4,417)**
Other	**(2,368)**	(1,616)	**(20,586)**
Total deferred tax liabilities	**(84,859)**	(89,478)	**(737,776)**
Net deferred tax assets (liabilities)	**¥ (44,938)**	¥ (47,488)	**$ (390,693)**

Notes: 1. Valuation allowance decreased by ¥6,124 million (US$53,241 thousand). The main reason for this decrease was the decrease in valuation allowance and others related to the amount of deductible temporary differences, as a result of the exclusion from the scope of consolidation of SHOKO CO., LTD. and its four subsidiaries through a share transfer of SHOKO CO., LTD., and Showa Aluminum Can Corp. and its subsidiary Hanacans Joint Stock Company through a share transfer of Showa Aluminum Can Corp.

2. A breakdown of tax loss carryforwards and valuation allowance by expiry date as of December 31, 2021 and 2020 were as follows.

Year ended December 31, 2021	Millions of yen						
	Due in 1 year or less	Due after 1 year through 2 years	Due after 2 years through 3 years	Due after 3 years through 4 years	Due after 4 years through 5 years	Due after 5 years	Total
Tax loss carryforwards*1	**¥ 367**	**¥ 298**	**¥ 378**	**¥ 536**	**¥ 814**	**¥ 19,405**	**¥ 24,589**
Valuation allowance	**(210)**	**(141)**	**(221)**	**(380)**	**(90)**	**(10,101)**	**(14,464)**
Deferred tax assets	**157**	**157**	**157**	**157**	**724**	**9,304**	**10,126** *2

*1. Tax loss carryforwards are multiplied by the statutory effective tax rate.

*2. For the tax loss carryforwards of ¥24,589 million (US$213,784 thousand), the amount obtained by multiplying by the statutory tax rate, ¥10,126 million (US$88,035 thousand) was booked as deferred tax assets.

The Company does not recognize valuation allowances for the portion of the tax loss carryforwards deemed to be recoverable due to the prospect of future taxable income.

Year ended December 31, 2020	Millions of yen						
	Due in 1 year or less	Due after 1 year through 2 years	Due after 2 years through 3 years	Due after 3 years through 4 years	Due after 4 years through 5 years	Due after 5 years	Total
Tax loss carryforwards*1	¥ 95	¥ 2,095	¥ 2,450	¥ 489	¥ 278	¥ 15,959	¥ 21,366
Valuation allowance	(72)	(213)	(975)	(489)	(138)	(9,825)	(11,711)
Deferred tax assets	23	1,882	1,476	—	140	6,134	9,655*2

*1. Tax loss carryforwards are multiplied by the statutory effective tax rate.
*2. For the tax loss carryforwards of ¥21,366 million, the amount obtained by multiplying by the statutory tax rate, ¥9,655 million was booked as deferred tax assets.
The Company does not recognize valuation allowances for the portion of the tax loss carryforwards deemed to be recoverable due to the prospect of future taxable income.

Year ended December 31, 2021	Thousands of U.S. dollars						
	Due in 1 year or less	Due after 1 year through 2 years	Due after 2 years through 3 years	Due after 3 years through 4 years	Due after 4 years through 5 years	Due after 5 years	Total
Tax loss carryforwards	**$ 3,188**	**$ 2,589**	**$ 3,284**	**$ 4,661**	**$ 7,073**	**$ 168,708**	**$ 213,784**
Valuation allowance	**(1,826)**	**(1,228)**	**(1,922)**	**(3,300)**	**(780)**	**(87,818)**	**(125,749)**
Deferred tax assets	**1,362**	**1,362**	**1,362**	**1,362**	**6,292**	**80,890**	**88,035**

(b) Significant items in the reconciliation of the statutory tax rate with the effective tax rate as at December 31, 2021 and 2020 were as follows:

	2021	2020
Statutory tax rate	**30.6%**	— %
Transfer of business	**38.3**	—
Amortization of goodwill	**23.7**	—
Effect on the reexamination of recoverability	**20.6**	—
Differences of statutory tax rate in subsidiaries	**(11.0)**	—
Tax credit	**(10.2)**	—
Unrealized income on inventories	**(4.0)**	—
Permanently non-taxable dividends received	**(3.6)**	—
Foreign taxes	**1.9**	—
Other	**2.2**	—
Effective tax rate	**88.4%**	— %

Due to the recording of a loss before income taxes, significant items in the reconciliation of the statutory tax rate with the effective tax rate as at December 31, 2020 have been omitted.

15. IMPAIRMENT LOSS

As at December 31, 2021, major impairment losses on fixed assets were as follows:

Location	Major use	Asset category	Millions of yen	Thousands of U.S. dollars
Minato Ward, Tokyo Prefecture	Conductive paste technology for photovoltaic cells	Intangible asset	**¥ 1,543**	**$ 13,415**
Rhineland-Palatinate, Germany	Production facilities for thermal insulation parts	Leased asset, etc.	**9,101**	**79,125**
—	Energy storage devices and systems business	Goodwill, etc.	**30,069**	**261,422**
Other			**920**	**8,001**
Total			**¥ 41,633**	**$ 361,963**

The amount in the above table included ¥30,069 million (US$261,422 thousand) which was reported as business structuring expenses on the consolidated statements of operations.

16. CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

Reclassification adjustments and tax effects for components of other comprehensive income for the year ended December 31, 2021, were as follows:

	Millions of yen	Thousands of U.S. dollars
Valuation difference on available-for-sale securities		
Increase during the year	**¥ 2,202**	**$ 19,142**
Reclassification adjustments	**(3,629)**	**(31,552)**
Amount before income tax effect	**(1,427)**	**(12,410)**
Income tax effect	**479**	**4,161**
Total	**¥ (949)**	**$ (8,250)**
Deferred gains or losses on hedges		
Increase during the year	**¥ 831**	**$ 7,221**
Reclassification adjustments	**203**	**1,763**
Adjustments of acquisition cost of assets	**(661)**	**(5,746)**
Amount before income tax effect	**372**	**3,238**
Income tax effect	**(114)**	**(988)**
Total	**¥ 259**	**$ 2,251**
Foreign currency translation adjustments		
Increase during the year	**¥ 40,553**	**$ 352,572**
Reclassification adjustments	**(1,479)**	**(12,859)**
Amount before income tax effect	**39,074**	**339,713**
Income tax effect	**—**	**—**
Total	**¥ 39,074**	**$ 339,713**
Remeasurements of defined benefit plans, net of tax		
Increase during the year	**¥ 12,731**	**$ 110,686**
Reclassification adjustments	**114**	**994**
Amount before income tax effect	**12,845**	**111,680**
Income tax effect	**(3,919)**	**(34,071)**
Total	**¥ 8,927**	**$ 77,610**
Share of other comprehensive income of unconsolidated subsidiaries and affiliates accounted for using the equity method		
Increase during the year	**¥ 958**	**$ 8,328**
Reclassification adjustments	**—**	**—**
Total	**¥ 958**	**$ 8,328**
Total other comprehensive income	**¥ 48,268**	**$ 419,651**

17. LEASES

(a) Finance Leases as a Lessee
Finance lease transactions other than those involving transfer of ownership to the lessee and right-of-use assets of subsidiaries that have applied IFRS 16

(1) Type of leased assets
a) Tangible fixed assets: Principally office buildings
b) Intangible fixed assets: Principally software

(2) Method of depreciation
The depreciation method of leased assets is described in Note 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (j) Leased Assets.

(b) Operating Leases as a Lessee
As at December 31, 2021 and 2020, assets leased under non-capitalized operating leases were as follows:
Future minimum lease payments for the remaining lease periods:

	Millions of yen		Thousands of U.S. dollars
	2021	2020	**2021**
Due within 1 year	**¥ 215**	¥ 272	**$ 1,873**
Due over 1 year	**2,425**	2,582	**21,079**
Total	**¥2,640**	¥2,854	**$22,952**

(c) Operating Leases as a Lessor
As at December 31, 2021 and 2020, non-cancelable operating lease receivables for the remaining lease periods were as follows:
Future minimum lease receivables for the remaining lease periods:

	Millions of yen		Thousands of U.S. dollars
	2021	2020	**2021**
Due within 1 year	**¥1**	¥1	**$ 6**
Due over 1 year	**1**	—	**5**
Total	**¥1**	¥1	**$ 11**

18. CONTINGENT LIABILITIES

As at December 31, 2021 and 2020, the Companies were guarantors for the borrowings below. The guarantees were principally for unconsolidated subsidiaries, affiliates and others.

	Millions of yen		Thousands of U.S. dollars
	2021	2020	**2021**
Guarantees	**¥1,006**	¥758	**$8,745**

As the amounts include joint and several guarantors' portions as well as the Companies', the actual amounts that the Companies were contingently liable to pay were smaller than the above.

19. NET ASSETS

The Corporation Law of Japan (the "Law") provides that the entire amount paid for new shares may be credited to the stated capital, with the provision that, by resolution of the Board of Directors, up to one-half of such amount paid for new shares may be credited to additional paid-in capital, which is included in capital surplus.

The Law provides that an amount equal to 10% of cash appropriations of retained earnings shall be set aside as additional paid-in capital or a legal earnings reserve until the total of such reserve and additional paid-in capital equals 25% of the stated capital.

Additional paid-in capital and the legal earnings reserve may be used to eliminate or reduce a deficit, if any, or be capitalized by resolution at the ordinary general meeting of shareholders. All additional paid-in capital and the legal earnings reserve may be transferred to other capital surplus and retained earnings, respectively, which are potentially available for dividends. Additional paid-in capital and the legal earnings reserve are included in capital surplus and retained earnings, respectively.

The Law does not have a definition about the classification of paid-in capital between common stock and preferred stock. Accordingly, the Company states its capital in the total amount paid by issuing common stock and preferred stock.

The maximum amount that the Company can distribute as dividends is calculated based on the unconsolidated financial statements of the Company in accordance with Japanese laws and regulations.

20. REVALUATION RESERVE FOR LAND

The Company and some of its consolidated subsidiaries revalued the land they own for business in accordance with the Law concerning the Revaluation of Land. The difference between the revalued amount and the book value, after the deduction of applicable tax, is stated as a land revaluation reserve. The revaluation was conducted using methods stipulated in the ordinance for enforcement of the law, specifically, the method in Item 4 of Article 2 (Reasonable Adjustment of the Appraised Value Relating to Land Price Tax), and the method in Item 5 of Article 2 (Estimation by Experts). The excess of the carrying amount of the revalued land over the market value as at December 31, 2021 was ¥52,881 million (US$459,755 thousand).

21. FINANCIAL COVENANTS

As of December 31, 2021
Part of debt for the fiscal year ended December 31, 2021 contains certain financial covenants, mainly the maintenance of net assets and the maintenance of profits. There is no debt that is in contravention of the financial covenants as of the end of the fiscal year ended December 31, 2021.

As of December 31, 2020
Part of debt for the fiscal year ended December 31, 2020 contains certain financial covenants, mainly the maintenance of net assets and the maintenance of profits. There is no debt that is in contravention of the financial covenants as of the end of the fiscal year ended December 31, 2020.

22. SELLING, GENERAL AND ADMINISTRATIVE EXPENSES

Selling, general and administrative expenses for the years ended December 31, 2021 and 2020 were summarized as follows:

	Millions of yen		Thousands of U.S. dollars
	2021	2020	**2021**
Freight	**¥ 51,106**	¥ 34,585	**$ 444,320**
Employees' compensation	**49,834**	38,461	**433,263**
Experiment and research expenses	**28,619**	18,154	**248,813**
Depreciation	**27,616**	16,015	**240,099**
Other	**93,621**	71,556	**813,957**
Total	**¥250,796**	¥178,771	**$2,180,453**

Research and development expenses included in selling, general and administrative expenses for the years ended December 31, 2021 and 2020 were ¥35,385 million (US$307,643 thousand) and ¥28,307 million, respectively.

23. RESEARCH AND DEVELOPMENT

Research and development costs included in manufacturing costs, selling, general and administrative expenses for the years ended December 31, 2021 and 2020 were ¥46,750 million (US$406,448 thousand) and ¥34,379 million, respectively.

24. INVENTORY WRITE DOWNS

As at December 31, 2021 and 2020, inventory write-downs of ¥(19,941) million (US$(173,373) thousand) and ¥17,790 million, respectively, based on the lower of the cost or market method were deducted from the carrying value of inventories.

25. FINANCING EXPENSES

Year ended December 31, 2021
Not applicable.

Year ended December 31, 2020
Financing expenses include one-time expenses paid to financial institutions relating to the share acquisition of Hitachi Chemical Company, Ltd. (current Showa Denko Materials Co., Ltd.).

26. GAIN ON SALE OF BUSINESS

Year ended December 31, 2021
Gain on transfer of business relates to the transfer of the aluminum can business of the Companies.

Year ended December 31, 2020
Not applicable.

27. ENVIRONMENTAL EXPENSES

Year ended December 31, 2021
The expenditure is for the implementation of measures to prevent groundwater pollution at Kitakata Plant of the Company.

Year ended December 31, 2020
Not applicable.

28. LOSS ON SALE OF BUSINESS

Year ended December 31, 2021
Loss on transfer of business relates to the transfer of the aluminum rolling business of the Companies.

Year ended December 31, 2020
Not applicable.

29. BUSINESS STRUCTURING EXPENSES

Year ended December 31, 2021
Business structuring expenses principally consist of impairment loss on goodwill, etc., due to decisions made to transfer the energy storage devices and systems business of Showa Denko Materials Co., Ltd.

Year ended December 31, 2020
Business structuring expenses are expenses and losses expected in conjunction with the closing, etc., of manufacturing bases. The main component includes retirement-related expenses.

30. BUSINESS COMBINATION

(a) Transfer of Investments in Subsidiaries
(1) Overview of the business divestiture
(i) Name of the divestiture target company
SKT Holdings Ltd.,

(ii) Description of the divested business

- **Divested business**
  General trading business (SHOKO CO., LTD. (hereinafter referred to as "SHOKO") and its four subsidiaries)
- **Business description**
  Sale of chemicals, resins, metals and other industrial materials

(iii) Main reason for conducting the business divestiture
The Company has been considering measures to improve corporate value by resolving reform issues in mid-term business plans at SHOKO under a rapidly changing business environment. Under these circumstances, the Company received a proposal from iSigma Capital Corporation to improve corporate value at SHOKO. Upon careful consideration of the proposal, the Company has come to the conclusion that SHOKO can further accelerate growth and increase its corporate value through facilitating the development of customers and sales channels, expanding its product lineup, improving profitability by taking advantage of economies of scale, improving management efficiency, and so on, by utilizing the domestic and overseas networks and management know-how of iSigma Capital Corporation and its parent company, Marubeni Corporation, as well as its group companies. Therefore, the Company has determined to transfer the shares in SHOKO to SKT Holdings Ltd., through a tender offer.

Furthermore, a shareholder agreement has also been executed with iSigma Business Advancement Fund III Investment LLP in view of the fact that the Company will continue to hold a part of the shares in SHOKO after the tender offer. The Company has agreed on the business operations of SHOKO after this transaction, such as the appointment of certain candidates to become directors of SHOKO after this transaction, and the handling of the shares issued by SHOKO.

The transfer of applied shares held by the Company to SKT Holdings Ltd. made SHOKO cease to be one of the consolidated subsidiaries of the Company; however, the Company plans to continue the business relationship with SHOKO even after the transfer of the applied shares.

(iv) Business divestiture date
April 22, 2021 (date of share sale)
April 1, 2021 (deemed date of sale)

(v) Overview of the transaction including its legal form
Share transfer in exchange for cash

(2) Overview of accounting treatment
(i) Amount of transfer gain or loss
Loss on sales of shares in subsidiaries and associates:
¥332 million (US$2,886 thousand)

(ii) Appropriate book values of assets and liabilities related to the transferred business and their main breakdown

	Millions of yen	Thousands of U.S. dollars
Current assets	¥ 42,918	$ 373,132
Noncurrent assets	6,344	55,158
Total assets	¥ 49,262	$ 428,290
Current liabilities	¥ 21,179	$ 184,137
Noncurrent liabilities	15,935	138,542
Total liabilities	¥ 37,115	$ 322,679

(iii) Accounting treatment
The amount after deducting expenses related to the sale from the difference between the consolidated book value and the sale price of the shares in SHOKO and its subsidiaries that were held by the Company is recorded in other expenses on the consolidated statements of operations.

(3) Name of the reportable segment in which the divested business was included
Others segment

(4) Estimated amount of gains or losses related to the divested business recorded in the consolidated statements of operations for the current consolidated fiscal year

	Millions of yen	Thousands of U.S. dollars
Net sales	¥ 14,947	$ 129,955
Operating income	¥ 391	$ 3,402

(b) Transfer of Aluminum Can Business
(1) Overview of the business divestiture
(i) Name of the divestiture target company
Alpha Japan Acquisition Co., Ltd.

(ii) Description of the divested business

- **Divested business**
  The aluminum can business (including Showa Aluminum Can Corp., which is a wholly owned consolidated subsidiary of the Company (hereinafter referred to as "SAC"), and its subsidiary Hanacans Joint Stock Company (hereinafter referred to as "HAC"))
- **Business description**
  Manufacture and sale of aluminum cans for beverages

(iii) Main reason for conducting the business divestiture
In light of the rapidly changing business environment, the Company has been examining the optimal allocation of management resources and portfolio management to realize sustainable growth. After careful consideration of all available options, the Company reached the conclusion that the expansion of the aluminum can business and the aluminum rolling business would be best achieved through business partners that have specialized knowledge and management resources to enable future growth of these businesses together with the employees engaged in the respective business. Taking these factors into consideration, the Company decided to execute the transactions set forth in the master agreement with Apollo (a collective reference to a special-purpose company formed by funds managed by affiliates of Apollo Global Management, Inc.), which is one of the world's leading alternative investment managers and has a wealth of experience supporting aluminum-related industries for more than 20 years.

(iv) Business divestiture date
June 24, 2021 (date of share sale)
June 30, 2021 (deemed date of sale)

(v) Overview of the transaction including its legal form
For the aluminum can business of the Company, after an absorption-type company split (simple company split), in which SAC is the successor company, was conducted without consideration, all of the shares issued by SAC were transferred to Alpha Japan Acquisition Co., Ltd. in exchange for cash.

(2) Overview of accounting treatment
(i) Amount of transfer gain or loss
Gain on sale of businesses: ¥9,061 million (US$78,780 thousand)
* The final transfer price adjustment prescribed by the share transfer agreement has been completed, and this amount reflects such price adjustment.

(ii) Appropriate book values of assets and liabilities related to the transferred business and their main breakdown

	Millions of yen	Thousands of U.S. dollars
Current assets	¥ 27,135	$ 235,919
Noncurrent assets	26,385	229,391
Total assets	¥ 53,520	$ 465,309
Current liabilities	¥ 14,317	$ 124,474
Noncurrent liabilities	584	5,074
Total liabilities	¥ 14,901	$ 129,548

(iii) Accounting treatment
The amount after deducting expenses related to the sale from the difference between the consolidated book value and the sale price of the aluminum can business of the Company and the shares in SAC and HAC is recorded in recorded in gain on sale of businesses on the consolidated statements of operations.

(3) Name of the reportable segment in which the divested business was included
Aluminum segment

(4) Estimated amount of gains or losses related to the divested business recorded in the consolidated statements of operations for the current consolidated fiscal year

	Millions of yen	Thousands of U.S. dollars
Net sales	¥ 19,879	$ 172,832
Operating income	¥ 2,183	$ 18,978

(c) Transfer of Aluminum Rolling Business
(1) Overview of the business divestiture
(i) Name of the divestiture target company
Showa Aluminum Can Corp. (hereinafter referred to as "SAC")
Alpha Japan Acquisition Corporation
(hereinafter referred to as "Acqco")

(ii) Description of the divested business

- **Divested business**
  The aluminum rolling business (including Showa Denko Aluminum (Nantong) Co., Ltd., which is a wholly owned consolidated subsidiary of the Company (hereinafter referred to as "SDAN"))
- **Business description**
  Manufacture and sale of high-purity aluminum foil mainly to be used for electrolytic capacitors

(iii) Main reason for conducting the business divestiture

Details are as stated in (b) Transfer of Aluminum can Business.

(iv) Business divestiture date

August 2, 2021 (effective date of absorption-type merger, date of share sale)
July 1, 2021 (deemed date of sale)

(v) Overview of the transaction including its legal form

For the aluminum rolling business of the Company, after an absorption-type company split (simple company split), in which Showa Denko Sakai Aluminum Corp. (hereinafter referred to as "Sakai Aluminum") is the successor company, was conducted without consideration, an absorption-type merger, in which Sakai Aluminum is the disappearing company and SAC is the surviving company, was conducted. As consideration for shares in Sakai Aluminum, the Company received shares in Alpha Japan Holdings Co., Ltd. (hereinafter referred to as "Holdco"), which is the parent company of Acqco, and all of the shares issued by SDAN were transferred to Acqco in exchange for cash.

(2) Overview of accounting treatments

(i) Amount of transfer gain or loss

Loss on sale of businesses: ¥10,345 million (US$89,941 thousand)

* The final transfer price adjustment prescribed by the share transfer agreement has been completed, and this amount reflects such price adjustment.

(ii) Appropriate book values of assets and liabilities related to the transferred business and their main breakdown

	Millions of yen	Thousands of U.S. dollars
Current assets	¥ 8,999	$ 78,237
Noncurrent assets	9,514	82,720
Total assets	¥ 18,513	$160,957
Current liabilities	¥ 978	$ 8,503
Noncurrent liabilities	101	878
Total liabilities	¥ 1,079	$ 9,381

(iii) Accounting treatment

The amount after deducting expenses related to the sale from the sum of the difference between the book value of shares in Sakai Aluminum, to which the aluminum rolling business of the Company is divested, and the acquisition value of shares in Holdco and the difference between the consolidated book value and the sale price of the shares in SDAN is recorded in loss on sale of businesses on the consolidated statements of operations.

(3) Name of the reportable segment in which the divested business was included

Aluminum segment

(4) Estimated amount of gains or losses related to the divested business recorded in the consolidated statements of operations for the current consolidated fiscal year

	Millions of yen	Thousands of U.S. dollars
Net sales	¥ 12,671	$ 110,163
Operating income	¥ 2,013	$ 17,501

(d) Transfer of Printed Wiring Board Business

(1) Overview of the business divestiture

(i) Name of the divestiture target company

PTCJ-S Holdings Co., Ltd.

(ii) Description of the divested business

- **Divested business**
  The printed wiring board business
- **Business description**
  Manufacture and sale of printed wiring boards

(iii) Main reason for conducting the business divestiture

The Company made Showa Denko Materials Co., Ltd. its consolidated subsidiary in the second quarter of the previous fiscal year, and the two companies are scheduled to integrate in 2023. Preceding the integration, the Company is currently in the process of optimally allocating its management resources, reorganizing its business portfolio, and working to create innovations by combining the technologies of both companies to achieve sustainable growth. As part of this process, careful consideration was given to the printed wiring board business, and the Company reached the conclusion that the expansion of the printed wiring board business by fully leveraging its strengths, including its technological competitiveness and strong relationships with customers, would be best achieved through Polaris Capital Group, which has a wealth of investment experience and is well experienced in increasing the corporate value of its portfolio companies, and decided to transfer the printed wiring board business.

(iv) Business divestiture date

October 1, 2021 (date of share sale)

(v) Overview of the transaction including its legal form

Showa Denko Materials Co., Ltd. established two wholly owned companies and transferred the printed wiring board business held by Showa Denko Materials Co., Ltd. (including its shares in Yamagishi AIC Inc. (hereinafter referred to as "YGA") and Showa Denko Materials (Singapore) Pte. Ltd.) and the printed wiring board business held by Showa Denko Materials Electronics Co., Ltd. (hereinafter referred to as "SDME") (including its shares in YGA) by means of company splits (hereinafter, the company succeeding the printed wiring board business held by Showa Denko Materials Co., Ltd. is referred to as "NewCo", and the company succeeding the printed wiring board business held by SDME is referred to as "NewCo (SDME)"). Showa Denko Materials Co., Ltd. transferred all shares in the NewCo (Note) to PTCJ-S Holdings Co., Ltd. in exchange for cash.

Note: NewCo holds all shares in NewCo (SDME) after the company split where Showa Denko Materials Co., Ltd. transferred all of its shares in NewCo (SDME) to NewCo.

(2) Overview of accounting treatments

(i) Amount of transfer gain or loss

Loss on sale of businesses: ¥1,733 million (US$15,067 thousand)

(ii) Appropriate book values of assets and liabilities related to the transferred business and their main breakdown

	Millions of yen	Thousands of U.S. dollars
Current assets	¥ 19,316	$ 167,936
Noncurrent assets	19,465	169,231
Total assets	¥ 38,781	$ 337,167
Current liabilities	¥ 7,555	$ 65,684
Noncurrent liabilities	2,787	24,231
Total liabilities	¥ 10,342	$ 89,915

(iii) Accounting treatment
The difference between the consolidated book value and the transfer price of the transferred shares is recorded in loss on sale of businesses on the consolidated statements of operations.

(3) Name of the reportable segment in which the divested business was included
Showa Denko Materials segment

(4) Estimated amount of gains or losses related to the divested business recorded in the consolidated statements of operations for the current consolidated fiscal year

	Millions of yen	Thousands of U.S. dollars
Net sales	¥ 31,200	$ 271,257
Operating income	¥ 2,527	$ 21,972

(e) Transfer of Energy Storage Devices and Systems Business
(1) Overview of the business divestiture
(i) Name of the divestiture target company
Sustainable Battery Solutions, Inc. (hereinafter referred to as "SBS")

(ii) Description of the divested business
- **Divested business**
  The energy storage devices and systems business
- **Business description**
  Manufacture and sale of energy storage devices and system service business related thereto

(iii) Main reason for conducting the business divestiture
The Company made Showa Denko Materials Co., Ltd. its consolidated subsidiary in the second quarter of the previous fiscal year, and the two companies are scheduled to integrate in 2023. Preceding the integration, the Company is currently in the process of optimally allocating its management resources, reorganizing its business portfolio, and working to create innovations by combining the technologies of both companies to achieve sustainable growth. As part of this process, careful consideration was given to all available options for operation of the energy storage devices and systems business (hereinafter referred to as the "Business") of Showa Denko Materials Co., Ltd., a consolidated subsidiary of the Company. As a result, the Company reached the conclusion that the best option for stakeholders, including clients of the Business, daily end-users of the Companies' Business products, and employees engaged in the Business, is to promote the expansion of the Business through business partners that possess or have access to specialized knowledge and management resources for renewable energy and automobile industry that are relevant to the Business. The Company decided that the best business partner for this endeavor would be SBS, one of the leading investment companies in Japan, with experience in a considerable number of projects similar to the transaction, and with a variety of expertise. The Company therefore determined to promote the transaction with SBS.

(iv) Business divestiture date
December 1, 2021 (date of share sale)

(v) Overview of the transaction including its legal form
Showa Denko Materials Co., Ltd., the Company's consolidated subsidiary, had its newly established, wholly owned subsidiary (hereinafter referred to as "Japan NewCo") succeed the energy storage devices and systems business in which Showa Denko Materials Co., Ltd. had been engaged at its Saitama Works and Nabari Works through an absorption-type company split, and thereafter, transferred all shares of Japan NewCo and the directly or indirectly owned shares of Energy System Service Japan Co., Ltd., CSB Energy Technology Co., Ltd., Siam Magi Co., Ltd., Thai Energy Storage Technology Public Company Limited, Thai Nonferrous Metal Co., Ltd., 3K Products Company Limited, and Power Plas Company Limited to SBS, whose largest shareholders are the funds served by Advantage Partners Inc., in exchange for cash.

(2) Overview of accounting treatment
(i) Amount of transfer gain or loss
Gain on sale of businesses: ¥4,289 million (US$37,289 thousand)

(ii) Appropriate book values of assets and liabilities related to the transferred business and their main breakdown

	Millions of yen	Thousands of U.S. dollars
Current assets	¥ 57,524	$ 500,119
Noncurrent assets	31,698	275,585
Total assets	¥ 89,222	$ 775,704
Current liabilities	¥ 36,280	$ 315,421
Noncurrent liabilities	4,619	40,159
Total liabilities	¥ 40,899	$ 355,581

(iii) Accounting treatment
The difference between the consolidated book value and the transfer price of the transferred shares is recorded in gain on sale of businesses on the consolidated statements of operations.

(3) Name of the reportable segment in which the divested business was included
Showa Denko Materials segment

(4) Estimated amount of gains or losses related to the divested business recorded in the consolidated statements of operations for the current consolidated fiscal year

	Millions of yen	Thousands of U.S. dollars
Net sales	¥ 94,800	$ 824,204
Operating income	¥ 6,633	$ 57,668

31. SEGMENT INFORMATION

(a) Information about sales, operating income, assets, and other items by reportable segment

Year ended December 31, 2021	Millions of yen									
	Petrochemicals	Chemicals	Electronics	Inorganics	Aluminum	Showa Denko Materials	Others	Total	Adjustments	Consolidated
Sales										
Outside customers	**¥277,717**	**¥175,562**	**¥119,470**	**¥ 98,991**	**¥ 72,434**	**¥ 634,792**	**¥ 40,668**	**¥1,419,635**	**¥ —**	**¥1,419,635**
Inter-segment	**5,428**	**11,311**	**1,398**	**3,309**	**3,745**	**241**	**3,391**	**28,822**	**(28,822)**	**—**
Total	**283,145**	**186,873**	**120,868**	**102,300**	**76,179**	**635,033**	**44,059**	**1,448,458**	**(28,822)**	**1,419,635**
Operating income (loss)	**¥ 20,701**	**¥ 21,597**	**¥ 16,153**	**¥ 14,412**	**¥ 6,902**	**¥ 20,316**	**¥ (38)**	**¥ 100,043**	**¥ (12,845)**	**¥ 87,198**
Assets	**¥161,643**	**¥239,502**	**¥164,823**	**¥209,185**	**¥ 53,623**	**¥1,132,158**	**¥118,262**	**¥2,079,195**	**¥ 63,194**	**¥2,142,390**
Depreciation and amortization	**4,133**	**9,883**	**9,652**	**8,174**	**2,813**	**59,632**	**2,734**	**97,020**	**706**	**97,726**
Amortization of goodwill	**—**	**(9)**	**12**	**8**	**108**	**17,596**	**4**	**17,720**	**—**	**17,720**
Investments in unconsolidated subsidiaries and affiliates	**10,729**	**4,474**	**—**	**1,739**	**—**	**50,836**	**393**	**68,170**	**—**	**68,170**
Increase in property, plant and equipment and intangible assets	**2,686**	**9,985**	**14,759**	**8,265**	**3,872**	**35,165**	**3,587**	**78,320**	**327**	**78,647**

Notes: 1. Adjustments are as follows:

(1) Elimination of inter-segment transactions of ¥(530) million (US$(4,610) thousand) and total corporate expenses of ¥(12,315) million (US$(107,067) thousand) that were not allocated to any reportable segment were included in "Adjustments" for "Operating income" of ¥(12,845) million (US$(111,677) thousand). The total corporate expenses principally consist of the total corporate common research expenses that are not attributable to any reportable segment.

(2) Elimination of inter-segment receivables and payables and assets of ¥(54,205) million (US$(471,269) thousand) and total corporate assets of ¥117,400 million (US$1,020,688 thousand) that were not allocated to any reportable segment were included in "Adjustments" for "Assets" of ¥63,194 million (US$549,419 thousand). The total corporate assets principally consist of surplus funds of the Companies under management (in the form of cash and deposits), deferred tax assets and assets related to the total corporate common research and development expenses.

2. Amortization of negative goodwill was included in "Amortization of goodwill."

Year ended December 31, 2020	Millions of yen									
	Petrochemicals	Chemicals	Electronics	Inorganics	Aluminum	Showa Denko Materials	Others	Total	Adjustments	Consolidated
Sales										
Outside customers	¥184,173	¥139,517	¥ 96,296	¥ 77,158	¥ 73,559	¥ 302,687	¥100,310	¥ 973,700	¥ —	¥ 973,700
Inter-segment	9,213	16,251	1,119	5,741	6,626	55	6,991	45,996	(45,996)	—
Total	193,385	155,769	97,415	82,899	80,185	302,742	107,301	1,019,696	(45,996)	973,700
Operating income (loss)	¥ 4,927	¥ 13,481	¥ 9,133	¥ (32,300)	¥ 421	¥ (6,303)	¥ 1,199	¥ (9,443)	¥ (10,006)	¥ (19,449)
Assets	¥122,760	¥230,846	¥138,788	¥199,410	¥113,935	¥1,241,782	¥150,011	¥2,197,530	¥ 6,076	¥2,203,606
Depreciation and amortization	4,186	9,489	9,371	8,252	4,539	29,592	2,504	67,933	710	68,643
Amortization of goodwill	—	(60)	12	8	211	9,128	23	9,322	—	9,322
Investments in unconsolidated subsidiaries and affiliates	9,827	3,854	—	1,677	—	50,966	249	66,574	—	66,574
Increase in property, plant and equipment and intangible assets	5,088	11,397	8,305	8,074	9,666	267,087	2,694	312,312	700	313,011

Notes: 1. Adjustments are as follows:

(1) Elimination of inter-segment transactions of ¥198 million and total corporate expenses of ¥(10,204) million that were not allocated to any reportable segment were included in "Adjustments" for "Operating income" of ¥(10,006) million. The total corporate expenses consist of the expenses relating to the share acquisition of Hitachi Chemical Company, Ltd. (current Showa Denko Materials Co., Ltd.) of ¥(3,546) million and the total corporate common research expenses that are not attributable to any reportable segment of ¥(6,659) million.

(2) Elimination of inter-segment receivables and payables and assets of ¥(54,890) million and total corporate assets of ¥60,966 million that were not allocated to any reportable segment were included in "Adjustments" for "Assets" of ¥6,076 million. The total corporate assets principally consist of surplus funds of the Companies under management (in the form of cash and deposits), deferred tax assets and assets related to the total corporate common research and development expenses.

2. Amortization of negative goodwill was included in "Amortization of goodwill."

Year ended December 31, 2021	Thousands of U.S. dollars									
	Petrochemicals	Chemicals	Electronics	Inorganics	Aluminum	Showa Denko Materials	Others	Total	Adjustments	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	$ —	$ 12,342,508
Inter-segment	47,189	98,336	12,154	28,769	32,560	2,095	29,482	250,585	(250,585)	—
Total	2,461,703	1,624,699	1,050,845	889,409	662,314	5,521,066	383,057	12,593,093	(250,585)	12,342,508
Operating income (loss)	$ 179,976	$ 187,764	$ 140,438	$ 125,299	$ 60,006	$ 176,633	$ (326)	$ 869,789	$ (111,677)	$ 758,112
Assets	$1,405,345	$2,082,267	$1,432,994	$1,818,680	$ 466,204	$9,843,139	$1,028,188	$ 18,076,816	$ 549,419	$ 18,626,235
Depreciation and amortization	35,929	85,927	83,912	71,066	24,456	518,445	23,773	843,508	6,139	849,646
Amortization of goodwill	—	(75)	102	73	942	152,981	35	154,058	—	154,058
Investments in unconsolidated subsidiaries and affiliates	93,280	38,898	—	15,116	—	441,972	3,415	592,682	—	592,682
Increase in property, plant and equipment and intangible assets	23,355	86,810	128,316	71,858	33,664	305,733	31,186	680,923	2,845	683,768

(b) Information about geographical areas

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

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

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

Year ended December 31, 2021	Millions of yen			
	Japan	Asia	Others	Total
Property, plant and equipment	¥ 456,825	¥ 120,624	¥ 82,071	¥ 659,521

Year ended December 31, 2020	Millions of yen			
	Japan	Asia	Others	Total
Property, plant and equipment	¥ 495,516	¥ 143,439	¥ 88,164	¥ 727,119

Year ended December 31, 2021	Thousands of U.S. dollars			
	Japan	Asia	Others	Total
Property, plant and equipment	$ 3,971,704	$ 1,048,724	$ 713,537	$ 5,733,965

(c) Information about impairment loss on property, plant and equipment by reportable segment

Year ended December 31, 2021	Millions of yen								
	Petrochemicals	Chemicals	Electronics	Inorganics	Aluminum	Showa Denko Materials	Others	Elimination	Total
Impairment loss on assets	**¥ —**	**¥ 29**	**¥ 56**	**¥ 165**	**¥ 242**	**¥ 41,091**	**¥ 49**	**¥ —**	**¥ 41,633**

Year ended December 31, 2020	Millions of yen								
	Petrochemicals	Chemicals	Electronics	Inorganics	Aluminum	Showa Denko Materials	Others	Elimination	Total
Impairment loss on assets	¥ 93	¥ 2	¥ 244	¥ 9,049	¥ 8,802	¥ 288	¥ 66	¥ —	¥ 18,545

Year ended December 31, 2021	Thousands of U.S. dollars								
	Petrochemicals	Chemicals	Electronics	Inorganics	Aluminum	Showa Denko Materials	Others	Elimination	Total
Impairment loss on assets	**$ —**	**$ 252**	**$ 491**	**$ 1,438**	**$ 2,108**	**$ 357,248**	**$ 426**	**$ —**	**$ 361,963**

(d) Information about amortization of goodwill and unamortized balance by reportable segment

Year ended December 31, 2021	Millions of yen								
	Petrochemicals	Chemicals	Electronics	Inorganics	Aluminum	Showa Denko Materials	Others	Elimination	Total
Amortization	**¥ —**	**¥ 237**	**¥ 44**	**¥ 8**	**¥ 135**	**¥ 17,596**	**¥ 8**	**¥ —**	**¥ 18,028**
Unamortized balance	**—**	**3,104**	**111**	**13**	**—**	**309,659**	**—**	**—**	**312,886**

Year ended December 31, 2020	Millions of yen								
	Petrochemicals	Chemicals	Electronics	Inorganics	Aluminum	Showa Denko Materials	Others	Elimination	Total
Amortization	¥ —	¥ 248	¥ 44	¥ 8	¥ 265	¥ 9,128	¥ 26	¥ —	¥ 9,719
Unamortized balance	—	3,123	155	21	1,618	355,995	68	—	360,980

Year ended December 31, 2021	Thousands of U.S. dollars								
	Petrochemicals	Chemicals	Electronics	Inorganics	Aluminum	Showa Denko Materials	Others	Elimination	Total
Amortization	**$ —**	**$ 2,062**	**$ 385**	**$ 73**	**$ 1,175**	**$ 152,981**	**$ 66**	**$ —**	**$ 156,742**
Unamortized balance	**—**	**26,984**	**963**	**110**	**—**	**2,692,214**	**—**	**—**	**2,720,271**

Amortization of negative goodwill arose from business combinations prior to April 1, 2010 and its unamortized balance are as follows:

Year ended December 31, 2021	Millions of yen								
	Petrochemicals	Chemicals	Electronics	Inorganics	Aluminum	Showa Denko Materials	Others	Elimination	Total
Amortization	**¥ —**	**¥ 246**	**¥ 33**	**¥ —**	**¥ 27**	**¥ —**	**¥ 4**	**¥ —**	**¥ 309**
Unamortized balance	**—**	**918**	**195**	**—**	**—**	**—**	**6**	**—**	**1,119**

Year ended December 31, 2020	Millions of yen								
	Petrochemicals	Chemicals	Electronics	Inorganics	Aluminum	Showa Denko Materials	Others	Elimination	Total
Amortization	¥ —	¥ 308	¥ 33	¥ —	¥ 54	¥ —	¥ 4	¥ —	¥ 398
Unamortized balance	—	1,164	228	—	379	—	10	—	1,780

Year ended December 31, 2021	Thousands of U.S. dollars								
	Petrochemicals	Chemicals	Electronics	Inorganics	Aluminum	Showa Denko Materials	Others	Elimination	Total
Amortization	**$ —**	**$ 2,137**	**$ 283**	**$ —**	**$ 233**	**$ —**	**$ 31**	**$ —**	**$ 2,684**
Unamortized balance	**—**	**7,985**	**1,696**	**—**	**—**	**—**	**51**	**—**	**9,732**

Report of Independent Certified Public Accountants

KPMG

Independent auditor's report

To the Board of Directors of Showa Denko K.K.:

Opinion

We have audited the accompanying consolidated financial statements of Showa Denko K.K. ("the Company") and its consolidated subsidiaries (collectively referred to as "the Group"), which comprise the consolidated balance sheets as at December 31, 2021 and 2020, the consolidated statements of operations, statements of comprehensive income, statements of changes in net assets and statements of cash flows for the years then ended, and notes, comprising a summary of significant accounting policies and other explanatory information.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Group as at December 31, 2021 and 2020, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with accounting principles generally accepted in Japan.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in Japan. Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Consolidated Financial Statements* section of our report. We are independent of the Group in accordance with the ethical requirements that are relevant to our audit of the consolidated financial statements in Japan, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Appropriateness of the Company's judgment concerning the identification of an impairment indicator for intangible fixed assets including goodwill recognized as a result of acquiring Showa Denko Materials Co., Ltd. as a consolidated subsidiary

The key audit matter	How the matter was addressed in our audit
In the consolidated balance sheets of Showa Denko K.K. (hereinafter, the "Company"), intangible fixed assets of ¥522,489 million were recognized. As described in Note 3, "Significant accounting estimates, Judgment concerning the	The primary procedures we performed to assess the appropriateness of the Company's judgment as to whether there was an impairment indicator for intangible fixed assets including goodwill

identification of an impairment indicator for intangible fixed assets including goodwill recognized as a result of acquiring Showa Denko Materials Co., Ltd. as a consolidated subsidiary", included therein were goodwill of ¥309,659 million, customer related assets of ¥139,799 million, and other intangible fixed assets of ¥44,017 million related to the acquisition of Showa Denko Materials Co., Ltd. (hereinafter, "SDMC") as a consolidated subsidiary, which represented approximately 23.0% of total assets. The judgment concerning the identification of an impairment indicator for intangible fixed assets including goodwill was made in consideration of a larger unit where intangible fixed assets including goodwill were added to the asset groups related to the Company's businesses (hereinafter, the "Asset Group Including Goodwill"). Intangible fixed assets including goodwill recognized as the excess earnings potential of SDMC are amortized on a systematic basis. However, it is determined that an impairment indicator exists, if the business performance set forth in the original business plan developed when the Company acquired SDMC as its consolidated subsidiary has not been achieved, and therefore there have been, or are expected to be, events such as operating losses or continuous negative cash flows, a significant deterioration of the business environment and a change that may significantly decrease the recoverable amount. Whenever there is an impairment indicator for these intangible fixed assets including goodwill, they need to be tested for impairment by comparing the undiscounted future cash flows that are expected to be generated from the related Asset Group Including Goodwill with their carrying amounts. If the recognition of an impairment loss is deemed necessary, the carrying amount is reduced to the recoverable amount, and the resulting decrease in the carrying amount is measured as an impairment loss. The Company assessed the business results of the Asset Group Including Goodwill through this fiscal year and examined the business plans for the subsequent fiscal years, considering whether	recognized as a result of acquiring SDMC as a consolidated subsidiary included the following: **(1) Internal control testing** We tested the design and operating effectiveness of certain of the Company's internal controls relevant to judging whether there was an impairment indicator for intangible fixed assets including goodwill. In this assessment, we focused our testing on whether internal controls have been established and operate to examine the reliability of the business plans used for determining whether an impairment indicator exists. **(2) Assessment of the appropriateness of the judgment concerning the identification of an impairment indicator** In order to assess the appropriateness of the Company's judgment as to whether there was an impairment indicator for the Asset Group Including Goodwill, we inquired of management and the personnel responsible for the respective businesses. In addition, we: ● inspected the minutes of the board of directors and the documents for management meetings to understand SDMC's business environment; ● assessed the precision of management's estimates by analyzing the original business plan developed when SDMC became a consolidated subsidiary including the causes of variances with actual results; and ● assessed the consistency of the sales increase of the asset groups considered as key assumptions in the business plans with the growth forecast data published by external organizations for the key markets to which the asset groups belong.

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the aforementioned events had occurred or are expected to occur. As a result, the Company determined that there was no impairment indicator for this fiscal year. Key assumptions, such as sales increase associated with growth of the markets related to the Asset Group Including Goodwill, were included in the business plans used by the Company for assessing whether an impairment indicator existed and involved uncertainty as management's significant judgment was required. We, therefore, determined that our assessment of the appropriateness of the judgment concerning the identification of an impairment indicator for intangible fixed assets including goodwill recognized as a result of acquiring SDMC as a consolidated subsidiary was the most significant in our audit of the consolidated financial statements for this fiscal year, and accordingly, a key audit matter.	

Responsibilities of Management and Corporate Auditors and the Audit and Supervisory Board for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with accounting principles generally accepted in Japan, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern in accordance with accounting principles generally accepted in Japan and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Corporate auditors and the Audit and Supervisory board are responsible for overseeing the directors' performance of their duties with regard to the design, implementation and maintenance of the Group's financial reporting process.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with auditing standards generally accepted in Japan will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of our audit in accordance with auditing standards generally accepted in Japan, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, while the objective of the audit is not to express an opinion on the effectiveness of the Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate whether the presentation and disclosures in the consolidated financial statements are in accordance with accounting standards generally accepted in Japan, the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with corporate auditors and the Audit and Supervisory board regarding, among other matters, the planned scope and timing of the audit, significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide corporate auditors and the Audit and Supervisory board with a statement that we have complied with relevant ethical requirements regarding independence, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with corporate auditors and the Audit and Supervisory board, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Convenience Translation

The U.S. dollar amounts in the accompanying consolidated financial statements with respect to the year ended December 31, 2021 are presented solely for convenience. Our audit also included the translation of yen amounts into U.S. dollar amounts and, in our opinion, such translation has been made on the

Report of Independent Certified Public Accountants

basis described in Note 6 to the consolidated financial statements.

Interest required to be disclosed by the Certified Public Accountants Act of Japan

We do not have any interest in the Group which is required to be disclosed pursuant to the provisions of the Certified Public Accountants Act of Japan.

Michitaka Shishido

Designated Engagement Partner

Certified Public Accountant

Noriaki Sakurai

Designated Engagement Partner

Certified Public Accountant

Daio Aida

Designated Engagement Partner

Certified Public Accountant

KPMG AZSA LLC

Tokyo Office, Japan

April 12, 2022

Notes to the Reader of Independent Auditor's Report:
This is a copy of the Independent Auditor's Report and the original copies are kept separately by the Company and KPMG AZSA LLC.

Corporate Data

Investor Information

Head Office

Showa Denko K.K.

13-9, Shiba Daimon 1-chome, Minato-ku, Tokyo 105-8518, Japan
URL: https://www.sdk.co.jp/english
Phone: +81-3-5470-3235
E-mail: sdk_prir@showadenko.com

Ordinary General Meeting

The Ordinary General Meeting of Shareholders was held on March 30, 2022.

Shareholders (Top 10)

(As of December 31, 2021)

Shareholder	Number of Shares Held (in thousands)	Rate of Shareholding (%)
The Master Trust Bank of Japan Ltd. (T)	26,121	14.40
Custody Bank of Japan, Ltd. (T)	8,757	4.83
KOREA SECURITIES DEPOSITORY - SAMSUNG	7,017	3.87
Fukoku Mutual Life Insurance Company	4,517	2.49
STATE STREET BANK CLIENT OMNIBUS OM04	3,834	2.11
JAPAN SECURITIES FINANCE CO., LTD.	3,200	1.76
SMBC Nikko Securities Inc.	2,807	1.55
BNYM AS AGT/CLTS NON TREATY JASDEC	2,805	1.55
The Dai-ichi Life Insurance Company Limited	2,700	1.49
Meiji Yasuda Life Insurance Company	2,512	1.39

Note: Each rate of shareholding was calculated after deducting the number of treasury shares (3,553 thousand) from the number of shares outstanding.

Number of Shares Outstanding

184,901,292 as of December 31, 2021

Number of Shareholders

88,110 as of December 31, 2021

Classification of Stock

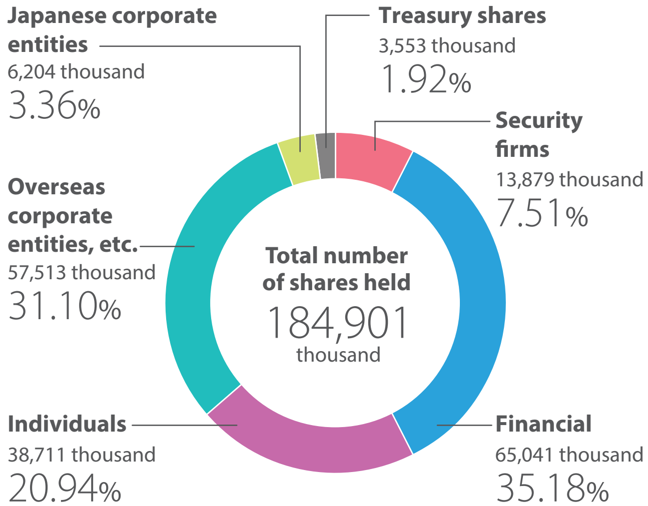
All stock issued by Showa Denko is common stock.

Stock Transfer Agent

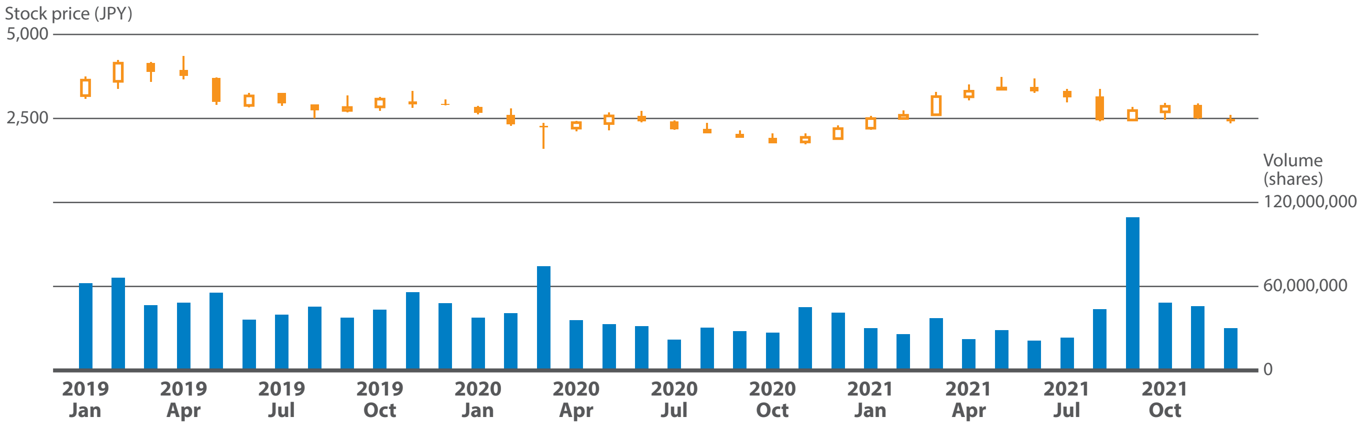
Mizuho Trust & Banking Co., Ltd.
3-3, Marunouchi 1-chome, Chiyoda-ku, Tokyo 100-8241, Japan

Shareholders by Sector

(As of December 31, 2021)



Stock Price and Trading Volume



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