

NGK INSULATORS, LTD. and Consolidated Subsidiaries

Consolidated Financial Statements
for the Year Ended March 31, 2020, and
Independent Auditor's Report

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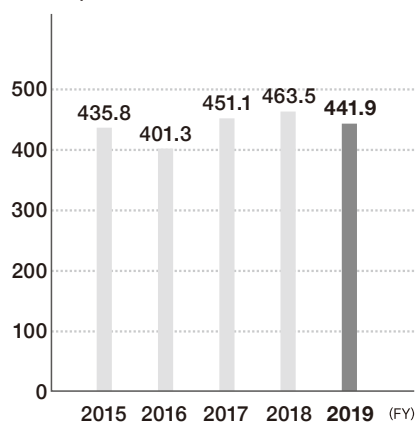
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Financial Highlights

The following data includes financial results of consolidated subsidiaries
(21 domestic, 36 overseas companies as of March 31, 2020)

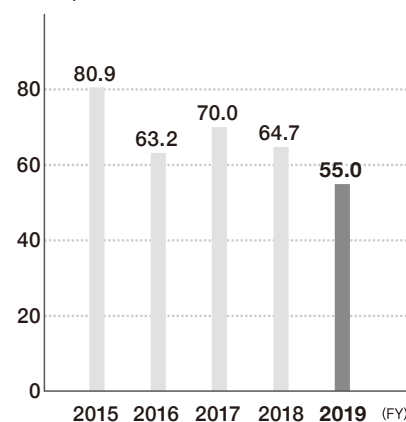
Net Sales

(Billions of yen)



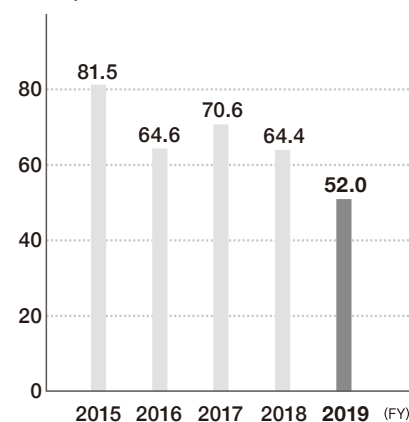
Operating Income

(Billions of yen)



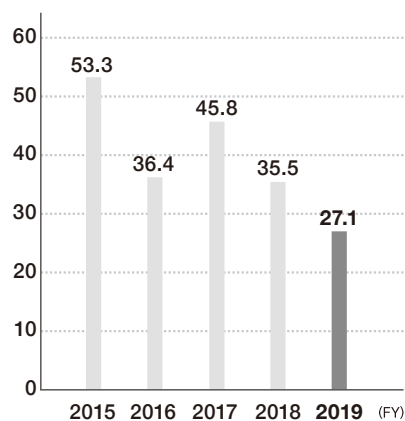
Ordinary Income

(Billions of yen)



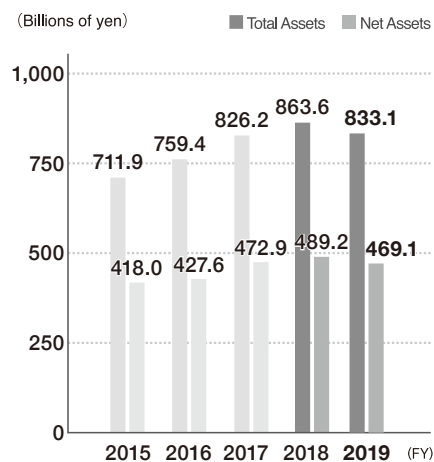
Net Income

(Billions of yen)



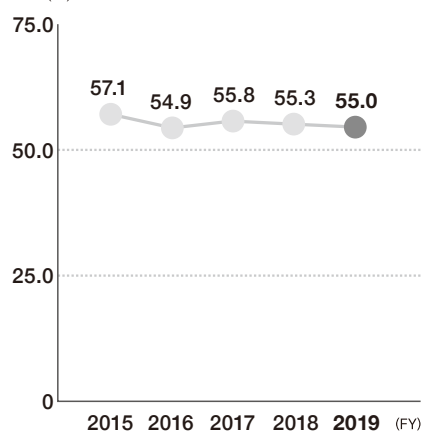
Total Assets / Net Assets

(Billions of yen)



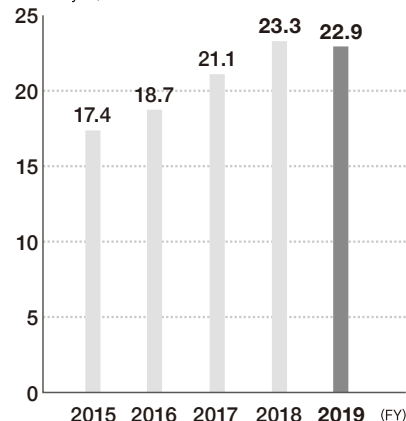
Equity Ratio

(%)

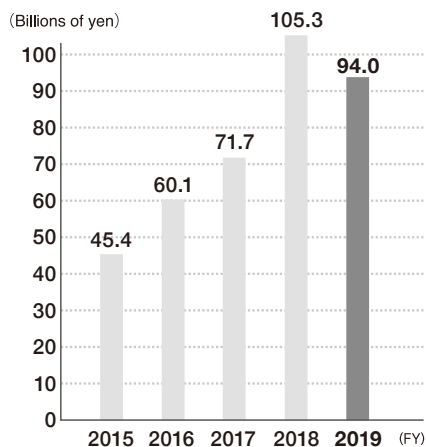


Research and Development Expenses

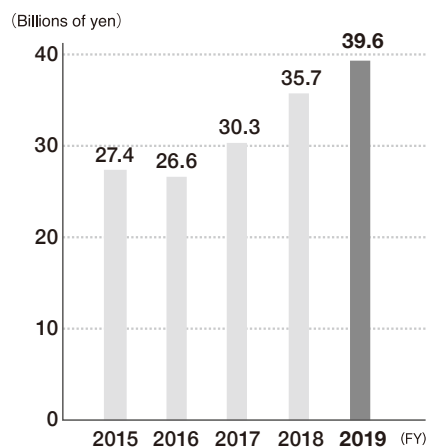
(Billions of yen)



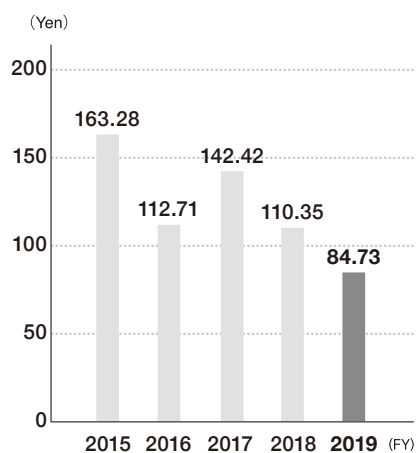
Capital Expenditures



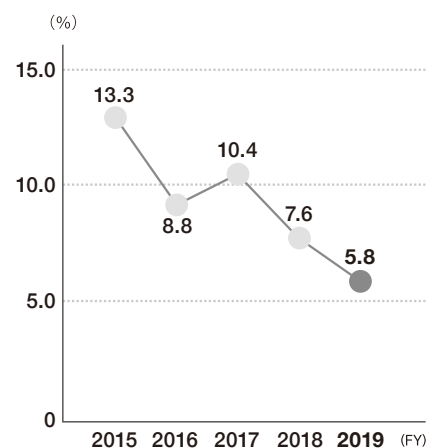
Depreciation and Amortization



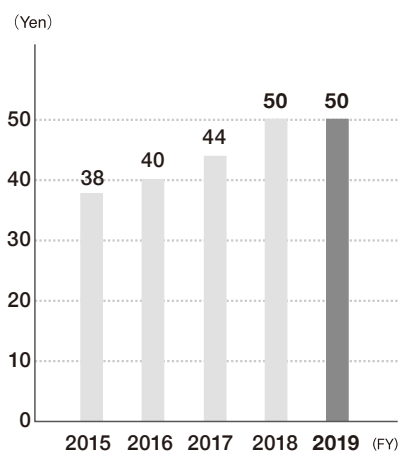
Net Income per share



Return on Equity



Dividends



Stock Price

FY	2015	2016	2017	2018	2019
Highest(Yen)	3,345	2,578	2,563	2,131	1,994
Lowest(Yen)	1,904	1,800	1,768	1,400	1,168

NGK INSULATORS, LTD. AND CONSOLIDATED SUBSIDIARIES
**CONSOLIDATED BALANCE SHEET
MARCH 31, 2020**

ASSETS	Millions of Yen		Thousands of U.S. Dollars (Note 1)
	2020	2019	2020
CURRENT ASSETS:			
Cash and cash equivalents (Note 13)	¥ 94,691	¥ 123,984	\$ 868,727
Time deposits (Note 13)	1,869	4,149	17,145
Marketable securities (Notes 3 and 13)	14,617	36,029	134,099
Notes and accounts receivable:			
Trade notes and accounts (Note 13)	101,378	106,414	930,073
Other	15,101	14,052	138,543
Allowance for doubtful accounts	(153)	(125)	(1,407)
Total	116,326	120,341	1,067,209
Inventories (Note 4)	157,390	148,032	1,443,943
Prepaid expenses and other current assets	13,482	10,835	123,693
Total current assets	398,375	443,370	3,654,816
PROPERTY, PLANT AND EQUIPMENT (Note 5)			
Land	29,451	30,919	270,194
Buildings and structures	213,221	197,447	1,956,152
Machinery and equipment	527,626	480,933	4,840,606
Construction in progress	45,376	58,145	416,290
Other	2,286	-	20,974
Total	817,960	767,444	7,504,216
Accumulated depreciation	(458,552)	(441,382)	(4,206,897)
Net property, plant and equipment	359,408	326,062	3,297,319
INVESTMENTS AND OTHER ASSETS:			
Investment securities (Notes 3 and 13)	33,971	48,751	311,658
Investments in unconsolidated subsidiaries and associated companies	16,026	21,109	147,025
Intangible assets	3,460	3,701	31,747
Net defined benefit assets (Note 7)	6,387	7,468	58,594
Deferred tax assets (Note 10)	12,766	10,442	117,122
Other assets	2,693	2,733	24,707
Total investments and other assets	75,303	94,204	690,853
TOTAL	¥ 833,086	¥ 863,636	\$ 7,642,988

(Continued)

NGK INSULATORS, LTD. AND CONSOLIDATED SUBSIDIARIES
**CONSOLIDATED BALANCE SHEET
MARCH 31, 2020**

LIABILITIES AND EQUITY	Millions of Yen		Thousands of U.S. Dollars (Note 1)
	2020	2019	2020
CURRENT LIABILITIES:			
Short-term borrowings (Notes 6 and 13)	¥ 6,407	¥ 4,231	\$ 58,782
Current portion of long-term debt (Notes 6 and 13)	9,219	29,198	84,576
Notes and accounts payable:			
Trade notes and accounts (Note 13)	42,690	51,032	391,652
Other	16,775	22,180	153,895
Total	59,465	73,212	545,547
Accrued expenses	19,836	21,492	181,986
Provision for NAS Battery safety measures	1,657	2,029	15,203
Provision for loss related to competition law	1,146	1,178	10,512
Income taxes payable (Notes 10 and 13)	12,226	11,731	112,163
Other current liabilities	4,334	4,716	39,759
Total current liabilities	114,290	147,787	1,048,528
LONG-TERM LIABILITIES:			
Long-term debt (Notes 6 and 13)	218,774	195,994	2,007,100
Net defined benefit liability (Note 7)	21,012	20,935	192,774
Provision for product warranties	899	1,632	8,245
Deferred tax liabilities (Note 10)	1,998	1,869	18,330
Other long-term liabilities	6,994	6,174	64,170
Total long-term liabilities	249,677	226,604	2,290,619
CONTINGENT LIABILITIES (Note 15)			
EQUITY (Note 8):			
Common stock:			
Authorized — 735,030 thousand shares			
Issued — 322,212 thousand shares and 327,560 thousand shares at March 31, 2020 and 2019, respectively	69,849	69,849	640,818
Capital surplus	70,199	71,978	644,032
Stock acquisition rights (Note 9)	829	923	7,605
Retained earnings (Note 17)	345,689	343,324	3,171,457
Treasury stock — at cost: 5,668 thousand shares and 5,780 thousand shares at March 31, 2020 and 2019, respectively (Note 8.c)	(11,264)	(12,122)	(103,341)
Accumulated other comprehensive income			
Unrealized gain on available-for-sale securities	11,337	21,260	104,006
Deferred loss on derivatives under hedge accounting	(462)	(136)	(4,238)
Foreign currency translation adjustments	(21,390)	(11,057)	(196,240)
Defined retirement benefit plans	(5,406)	(5,580)	(49,597)
Total	459,381	478,439	4,214,502
Noncontrolling interests	9,738	10,806	89,339
Total equity	469,119	489,245	4,303,841
TOTAL	¥ 833,086	¥ 863,636	\$ 7,642,988

See notes to consolidated financial statements.

(Concluded)

NGK INSULATORS, LTD. AND CONSOLIDATED SUBSIDIARIES
**CONSOLIDATED STATEMENT OF INCOME
YEAR ENDED MARCH 31, 2020**

	Millions of Yen		Thousands of U.S. Dollars (Note 1)
	2020	2019	2020
NET SALES	¥ 441,956	¥ 463,505	\$ 4,054,642
COST OF SALES (Note 11)	313,459	323,224	2,875,769
Gross profit	128,497	140,281	1,178,873
SELLING, GENERAL AND ADMINISTRATIVE EXPENSES (Note 11)	73,496	75,575	674,279
Operating income	55,001	64,706	504,594
OTHER INCOME (EXPENSES):			
Interest and dividends income	1,813	1,942	16,630
Interest expense	(3,025)	(2,763)	(27,752)
Loss on sales of and disposals of property, plant and equipment — net	(230)	(352)	(2,106)
Equity in earnings of unconsolidated subsidiary and associated company	1,352	1,565	12,402
Reversal of provision for product warranties	661	95	6,060
Foreign exchange loss	(3,072)	(736)	(28,181)
Gain on sales of investment securities — net	4,081	676	37,442
Impairment loss on fixed assets (Note 5)	(12,559)	(10,935)	(115,219)
Provision of reserve for loss related to competition law (Note 15.b)	-	(389)	-
Loss on liquidation of subsidiaries	(352)	(1,425)	(3,226)
Loss on the dissolution of a subsidiary	-	(2,961)	-
Subsidy income	591	-	5,422
Other — net	(425)	1,025	(3,901)
Other expenses — net	(11,165)	(14,258)	(102,429)
INCOME BEFORE INCOME TAXES	43,836	50,448	402,165
INCOME TAXES (Note 10):			
Current	15,816	13,824	145,099
Refund	(426)	-	(3,905)
Deferred	1,956	1,013	17,947
Total income taxes	17,346	14,837	159,141
NET INCOME	26,490	35,611	243,024
NET (LOSS) INCOME ATTRIBUTABLE TO NONCONTROLLING INTERESTS	(645)	104	(5,921)
NET INCOME ATTRIBUTABLE TO OWNERS OF THE PARENT	¥ 27,135	¥ 35,507	\$ 248,945
	Yen		U.S. Dollars
PER SHARE OF COMMON STOCK (Notes 2.x and 17):			
Basic net income	¥ 84.73	¥ 110.35	\$ 0.777
Diluted net income	84.60	110.17	0.776
Cash dividends applicable to the year	50.00	50.00	0.459

See notes to consolidated financial statements.

NGK INSULATORS, LTD. AND CONSOLIDATED SUBSIDIARIES

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME
YEAR ENDED MARCH 31, 2020

	Millions of Yen		Thousands of U.S. Dollars (Note 1)
	2020	2019	2020
NET INCOME	¥ 26,490	¥ 35,611	\$ 243,024
OTHER COMPREHENSIVE LOSS (Note 16):			
Unrealized loss on available-for-sale securities	(9,927)	(3,453)	(91,075)
Deferred loss on derivatives under hedge accounting	(314)	(110)	(2,885)
Foreign currency translation adjustments	(10,505)	(3,046)	(96,376)
Share of other comprehensive income in associated companies	82	106	760
Defined retirement benefit plans	(100)	2,056	(918)
Total other comprehensive loss	(20,764)	(4,447)	(190,494)
COMPREHENSIVE INCOME	¥ 5,726	¥ 31,164	\$ 52,530
TOTAL COMPREHENSIVE INCOME ATTRIBUTABLE TO:			
Owners of parent	¥ 6,727	¥ 31,276	\$ 61,711
Noncontrolling interests	(1,001)	(112)	(9,181)

See notes to consolidated financial statements.

NGK INSULATORS, LTD. AND CONSOLIDATED SUBSIDIARIES

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY
YEAR ENDED MARCH 31, 2020

	Thousands					
	Outstanding Number of Common Stock	Common Stock	Capital Surplus	Stock Acquisition Rights	Retained Earnings	Treasury Stock
Balance at April 1, 2018	321,766	¥ 69,849	¥ 71,948	¥ 858	¥ 322,622	¥ (12,153)
Cumulative effects of accounting change	-	-	-	-	640	-
Net income attributable to owners of the parent	-	-	-	-	35,507	-
Cash dividends, ¥48 per share	-	-	-	-	(15,445)	-
Purchase of treasury stock	(3)	-	-	-	-	(5)
Disposal of treasury stock	18	-	(6)	-	-	36
Change in the parent's ownership interest due to transactions with noncontrolling interests	-	-	36	-	-	-
Net change in the year	-	-	-	65	-	-
Balance at March 31, 2019	321,781	69,849	71,978	923	343,324	(12,122)
Cumulative effects of accounting change	-	-	-	-	242	-
Net income attributable to owners of the parent	-	-	-	-	27,135	-
Cash dividends, ¥50 per share	-	-	-	-	(16,090)	-
Purchase of treasury stock	(5,351)	-	-	-	-	(10,004)
Disposal of treasury stock	114	-	(72)	-	-	233
Cancellation of treasury stock	-	-	(1,707)	-	(8,922)	10,629
Net change in the year	-	-	-	(94)	-	-
Balance at March 31, 2020	316,544	¥ 69,849	¥ 70,199	¥ 829	¥ 345,689	¥ (11,264)

	Common Stock	Capital Surplus	Stock Acquisition Rights	Retained Earnings	Treasury Stock
Balance at March 31, 2019	\$ 640,818	\$ 660,353	\$ 8,470	\$ 3,149,759	\$ (111,212)
Cumulative effect of accounting change	-	-	-	2,221	-
Net income attributable to owners of the parent	-	-	-	248,945	-
Cash dividends, \$0.46 per share	-	-	-	(147,617)	-
Purchase of treasury stock	-	-	-	-	(91,782)
Disposal of treasury stock	-	(663)	-	-	2,144
Cancellation of treasury stock	-	(15,658)	-	(81,851)	97,509
Net change in the year	-	-	(865)	-	-
Balance at March 31, 2020	\$ 640,818	\$ 644,032	\$ 7,605	\$ 3,171,457	\$ (103,341)

See notes to consolidated financial statements.

Millions of Yen

Accumulated Other Comprehensive Income						
Unrealized Gain on Available-for-Sale Securities	Deferred Loss on Derivatives under Hedge Accounting	Foreign Currency Translation Adjustments	Defined Retirement Benefit Plans	Total	Noncontrolling Interests	Total Equity
¥ 24,659	¥ (31)	¥ (7,991)	¥ (7,920)	¥ 461,841	¥ 11,022	¥ 472,863
-	-	-	-	640	(30)	610
-	-	-	-	35,507	-	35,507
-	-	-	-	(15,445)	-	(15,445)
-	-	-	-	(5)	-	(5)
-	-	-	-	30	-	30
-	-	-	-	36	-	36
(3,399)	(105)	(3,066)	2,340	(4,165)	(186)	(4,351)
21,260	(136)	(11,057)	(5,580)	478,439	10,806	489,245
-	-	-	-	242	-	242
-	-	-	-	27,135	-	27,135
-	-	-	-	(16,090)	-	(16,090)
-	-	-	-	(10,004)	-	(10,004)
-	-	-	-	161	-	161
-	-	-	-	-	-	-
(9,923)	(326)	(10,333)	174	(20,502)	(1,068)	(21,570)
¥ 11,337	¥ (462)	¥ (21,390)	¥ (5,406)	¥ 459,381	¥ 9,738	¥ 469,119

Thousands of U.S. Dollars (Note 1)

Accumulated Other Comprehensive Income						
Unrealized Gain on Available-for-Sale Securities	Deferred Loss on Derivatives under Hedge Accounting	Foreign Currency Translation Adjustments	Defined Retirement Benefit Plans	Total	Noncontrolling Interests	Total Equity
\$ 195,048	\$ (1,251)	\$ (101,435)	\$ (51,197)	\$ 4,389,353	\$ 99,135	\$ 4,488,488
-	-	-	-	2,221	-	2,221
-	-	-	-	248,945	-	248,945
-	-	-	-	(147,617)	-	(147,617)
-	-	-	-	(91,782)	-	(91,782)
-	-	-	-	1,481	-	1,481
-	-	-	-	-	-	-
(91,042)	(2,987)	(94,805)	1,600	(188,099)	(9,796)	(197,895)
\$ 104,006	\$ (4,238)	\$ (196,240)	\$ (49,597)	\$ 4,214,502	\$ 89,339	\$ 4,303,841

NGK INSULATORS, LTD. AND CONSOLIDATED SUBSIDIARIES

CONSOLIDATED STATEMENT OF CASH FLOWS YEAR ENDED MARCH 31, 2020

	Millions of Yen		Thousands of U.S. Dollars (Note 1)
	2020	2019	2020
OPERATING ACTIVITIES:			
Income before income taxes	¥ 43,836	¥ 50,448	\$ 402,165
Adjustments for:			
Income taxes — paid	(15,032)	(18,407)	(137,909)
Depreciation and amortization	39,580	35,729	363,118
Impairment loss on fixed assets	12,559	10,935	115,219
Gain on sales of investment securities — net	(4,081)	(676)	(37,442)
Changes in assets and liabilities:			
Decrease (increase) in notes and accounts receivable — trade	2,520	(3,595)	23,120
Increase in inventories	(13,966)	(18,193)	(128,128)
Increase in other current assets	(2,410)	(6,352)	(22,110)
Decrease in net defined benefit assets	469	1,821	4,302
(Decrease) increase in notes and accounts payable — trade	(6,752)	5,454	(61,942)
(Decrease) increase in other current liabilities	(6,781)	1,996	(62,214)
Other — net	3,259	2,065	29,901
Total adjustments	9,365	10,777	85,915
Net cash provided by operating activities	53,201	61,225	488,080
INVESTING ACTIVITIES:			
Purchases of marketable securities	(34,749)	(68,000)	(318,798)
Proceeds from sales and redemption of marketable securities	54,532	62,220	500,296
Proceeds from sales and redemption of investment securities	12,662	831	116,164
Purchases of property, plant and equipment	(93,799)	(102,826)	(860,537)
Decrease (increase) in time deposits	2,239	(807)	20,537
Other — net	(1,716)	(1,161)	(15,741)
Net cash used in investing activities	(60,831)	(109,743)	(558,079)
FINANCING ACTIVITIES:			
Increase (decrease) in short-term borrowings — net	2,409	(1,919)	22,099
Proceeds from long-term debt	34,559	31,853	317,054
Repayments of long-term debt	(28,980)	(10,845)	(265,873)
Purchase of treasury stock	(10,004)	(5)	(91,782)
Cash dividends	(16,090)	(15,445)	(147,617)
Other — net	(690)	(75)	(6,326)
Net cash (used in) provided by financing activities	(18,796)	3,564	(172,445)
FOREIGN CURRENCY TRANSLATION ADJUSTMENTS ON CASH AND CASH EQUIVALENTS	(2,867)	(980)	(26,299)
NET DECREASE IN CASH AND CASH EQUIVALENTS	(29,293)	(45,934)	(268,743)
CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR	123,984	169,918	1,137,470
CASH AND CASH EQUIVALENTS, END OF YEAR	¥ 94,691	¥ 123,984	\$ 868,727

See notes to consolidated financial statements.

NGK INSULATORS, LTD. AND CONSOLIDATED SUBSIDIARIES

Notes to Consolidated Financial Statements Year Ended March 31, 2020

1. BASIS OF PRESENTATION OF CONSOLIDATED FINANCIAL STATEMENTS

The accompanying consolidated financial statements have been prepared in accordance with the provisions set forth in the Japanese Financial Instruments and Exchange Act and its related accounting regulations and in accordance with accounting principles generally accepted in Japan ("Japanese GAAP"), which are different in certain respects as to the application and disclosure requirements of International Financial Reporting Standards("IFRS").

In preparing these consolidated financial statements, certain reclassifications and rearrangements have been made to the consolidated financial statements issued domestically in order to present them in a form which is more familiar to readers outside Japan. In addition, certain reclassifications have been made in the 2019 consolidated financial statements to conform to the classifications used in 2020.

The consolidated financial statements are stated in Japanese yen, the currency of the country in which NGK INSULATORS, Ltd. (the "Company") is incorporated and operates. The translations of Japanese yen amounts into U.S. dollar amounts are included solely for the convenience of readers outside Japan and have been made at the rate of ¥109 to \$1, the approximate rate of exchange at March 31, 2020. Such translations should not be construed as representations that the Japanese yen amounts could be converted into U.S. dollars at that or any other rate.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

- a. Consolidation*—The consolidated financial statements as of March 31, 2020 and 2019, include the accounts of the Company and its 55 significant subsidiaries (together, the "Group").

Under the control and influence concepts, those companies in which the Company, directly or indirectly, is able to exercise control over operations are fully consolidated, and those companies over which the Group has the ability to exercise significant influence are accounted for by the equity method.

Investments in one unconsolidated subsidiary and one associated company are accounted for by the equity method.

Investments in the remaining unconsolidated subsidiaries and associated company are stated at cost. If the equity method of accounting had been applied to the investments in these companies, the effect on the accompanying consolidated financial statements would not be material.

The excess of the cost of acquisition over the fair value of the net assets of an acquired subsidiary at the date of acquisition is amortized over a period of five years.

All significant intercompany balances and transactions have been eliminated in consolidation. All material unrealized profit included in assets resulting from transactions within the Group is also eliminated. The fiscal years of subsidiaries are not necessarily the same as that of the Company. Eight foreign consolidated subsidiaries in China and Mexico, etc. have different fiscal years. Those subsidiaries prepared provisional financial information at March 31 for the consolidation.

- b. *Unification of Accounting Policies Applied to Foreign Subsidiaries for the Consolidated Financial Statements***— Under Accounting Standards Board of Japan ("ASBJ") Practical Issues Task Force ("PITF") No. 18, "Practical Solution on Unification of Accounting Policies Applied to Foreign Subsidiaries for the Consolidated Financial Statements," the accounting policies and procedures applied to a parent company and its subsidiaries for similar transactions and events under similar circumstances should in principle be unified for the preparation of the consolidated financial statements. However, financial statements prepared by foreign subsidiaries in accordance with either International Financial Reporting Standards ("IFRS") or generally accepted accounting principles in the United States of America ("US GAAP") tentatively may be used for the consolidation process, except for the following items that should be adjusted in the consolidation process so that net income is accounted for in accordance with Japanese GAAP, unless they are not material: (a) amortization of goodwill; (b) scheduled amortization of actuarial gain or loss of pensions that has been recorded in equity through other comprehensive income; (c) expensing capitalized development costs of R&D; (d) cancellation of the fair value model of accounting for property, plant and equipment and investment properties and incorporation of the cost model of accounting; and (e) recording a gain or loss through profit or loss on the sale of an investment in an equity instrument for the difference between the acquisition cost and selling price, and recording impairment loss through profit or loss for other-than-temporary declines in the fair value of an investment in an equity instrument, where a foreign subsidiary elects to present in other comprehensive income subsequent changes in the fair value of an investment in an equity instrument.
- c. *Unification of Accounting Policies Applied to Foreign Associated Companies for the Equity Method***— ASBJ Statement No. 16, "Accounting Standard for Equity Method of Accounting for Investments," requires adjustments to be made to conform the associate's accounting policies for similar transactions and events under similar circumstances to those of the parent company when the associate's financial statements are used in applying the equity method, unless it is impracticable to determine such adjustments. In addition, financial statements prepared by foreign associated companies in accordance with either IFRS or US GAAP tentatively may be used in applying the equity method if the following items are adjusted so that net income is accounted for in accordance with Japanese GAAP, unless they are not material: (a) amortization of goodwill; (b) scheduled amortization of actuarial gain or loss of pensions that has been recorded in equity through other comprehensive income; (c) expensing capitalized development costs of R&D; (d) cancellation of the fair value model of accounting for property, plant and equipment and investment properties and incorporation of the cost model of accounting; and (e) recording a gain or loss through profit or loss on the sale of an investment in an equity instrument for the difference between the acquisition cost and selling price, and recording impairment loss through profit or loss for other-than-temporary declines in the fair value of an investment in an equity instrument, where a foreign associate elects to present in other comprehensive income subsequent changes in the fair value of an investment in an equity instrument.
- d. *Business Combinations***— Business combinations are accounted for using the purchase method. Acquisition-related costs, such as advisory fees or professional fees, are accounted for as expenses in the periods in which the costs are incurred. If the initial accounting for a business combination is incomplete by the end of the reporting period in which the business combination occurs, an acquirer shall report in its financial statements provisional amounts for the items for which the accounting is incomplete. During the measurement period, which shall not exceed one year from the acquisition, the acquirer shall retrospectively adjust the provisional amounts recognized at the acquisition date to reflect new information obtained about facts and circumstances that existed as of the acquisition date and that would have affected the measurement of the amounts recognized as of that date. Such adjustments shall be recognized as if the accounting for the business combination had been completed at the acquisition date. A parent's ownership interest in a subsidiary might change if the parent purchases or sells ownership interests in its subsidiary. The carrying amount of

noncontrolling interest is adjusted to reflect the change in the parent's ownership interest in its subsidiary while the parent retains its controlling interest in its subsidiary. Any difference between the fair value of the consideration received or paid and the amount by which the noncontrolling interest is adjusted is accounted for as capital surplus as long as the parent retains control over its subsidiary.

- e. Cash Equivalents*—Cash equivalents are short-term investments that are readily convertible into cash and that are exposed to insignificant risk of changes in value.

Cash equivalents include time deposits, certificates of deposit, and investment trusts that represent short-term investments, all of which mature or become due within three months of the date of acquisition.

- f. Inventories*—Inventories are stated at the lower of cost, determined principally by the average method for finished products, work in process, and raw materials, or net selling value (see Note 4). Write-downs of inventories in the amounts of ¥106 million (\$976 thousand) and ¥239 million for the years ended March 31, 2020 and 2019, respectively, were included in cost of sales. Costs of contracts in progress are stated at cost, determined by the specific identification method.
- g. Allowance for Doubtful Accounts*—To provide for the loss from doubtful accounts, the allowance for doubtful accounts is calculated using the historical rate of actual losses for normal receivables and the estimated nonrecoverable amount for specific doubtful receivables after considering the recoverability of each account.
- h. Marketable and Investment Securities*—Marketable and investment securities are classified and accounted for, depending on management's intent, as follows: (1) held-to-maturity debt securities, for which there is the positive intent and ability to hold to maturity, are reported at amortized cost; and (2) available-for-sale securities, which are not classified as held-to-maturity debt securities, are reported at fair value, with unrealized gains and losses, net of applicable taxes, reported in a separate component of equity.

Nonmarketable available-for-sale securities are stated at cost, determined by the moving-average method. For other-than-temporary declines in fair value, investment securities are reduced to net realizable value by a charge to income.

- i. Property, Plant and Equipment*—Property, plant, and equipment are stated at cost. Depreciation of property, plant and equipment of the Company and its consolidated subsidiaries is computed by the straight-line method.

The range of useful lives is principally from 10 to 50 years for buildings and structures and from 3 to 12 years for machinery and equipment.

- j. Long-Lived Assets*—The Group reviews its long-lived assets for impairment whenever events or changes in circumstance indicate the carrying amount of an asset or asset group may not be recoverable. An impairment loss is recognized if the carrying amount of an asset or asset group exceeds the sum of the undiscounted future cash flows expected to result from the continued use and eventual disposition of the asset or asset group. The impairment loss would be measured as the amount by which the carrying amount of the asset exceeds its recoverable amount, which is the higher of the discounted cash flows from the continued use and eventual disposition of the asset, or the net selling price at disposition.

Intangible assets are depreciated by the straight-line method.

- k. Retirement and Pension Plans*—Net defined benefit liability (asset) is accounted for based on the projected benefit obligations and plan assets at the balance sheet date. The projected benefit obligations are attributed to periods on a benefit-formula basis. Actuarial gains and losses and past service costs that are yet to be recognized in profit or loss are recognized within equity (accumulated other comprehensive income) after adjusting for tax effects.

Actuarial gains and losses are amortized and charged to expense on a straight-line basis over 10 years within the expected average remaining service period of the employees from the consolidated fiscal year following the year when they occur. Past service costs are amortized and charged to expense on a straight-line basis, mainly over 10 years, within the expected average remaining service period of the employees.

In some consolidated subsidiaries in the United States, the costs of postretirement benefits other than pension plans are allocated to each period based on the estimated service period of employees, and are included in net defined benefit liability because they are similar to retirement benefits.

Certain domestic consolidated subsidiaries apply the simplified method to state the liability based on the amount that would be paid if employees retired at the consolidated balance sheet date.

- l. Stock Options*—The cost of employee stock options is measured based on the fair value at the date of grant and recognized as compensation expenses over the vesting period as consideration for receiving goods or services. In the consolidated balance sheet, the stock options are presented as stock acquisition rights as a separate component of equity until exercised.
- m. Research and Development Costs*—Research and development costs are charged to income as incurred.
- n. Provision for Product Warranties Costs*—The Company and some consolidated subsidiaries estimate and accrue the costs of warranty repair for products sold in reserve for future expenses.
- o. Provision for NAS Battery Safety Measures*—In September 2011, Company-manufactured NAS® (sodium-sulfur) batteries used for storing electricity caught fire. The Company, in connection with this incident, reserved an allowance as "Provision for NAS Battery safety measures" for anticipated future expenses related to safety measures necessary to expand the NAS battery business, to the extent that such amount can be reasonably estimated.
- p. Provision for Loss Related to Competition Law*—The Company estimated and recorded an allowance for estimated losses related to competition law.
- q. Revenue Recognition*—The Group recognizes revenue mainly upon the delivery of products, based on the contract terms and other relevant factors. Effective April 1, 2018, foreign consolidated subsidiaries, which apply IFRS, adopted IFRS 15, Revenue from Contracts with Customers. Effective April 1, 2019, foreign consolidated subsidiaries, which apply US GAAP, adopted Topic 606, Revenue from Contracts with Customers. The effect of the adoption was immaterial to the consolidated financial statements for the year ended March 31, 2020.
- r. Construction Contracts*—Construction revenue and construction costs are recognized by the percentage-of-completion method if the outcome of a construction contract can be estimated reliably. When total construction revenue, total construction costs, and the stage of completion of the contract at the balance sheet date can be reliably measured, the outcome of a construction contract is deemed to be estimated reliably. If the outcome of a construction contract cannot be reliably estimated, the completed-contract method should be applied. When it is probable that the total construction costs will exceed total construction revenue, an estimated loss on the contract should be immediately recognized by providing for a loss on such construction contracts.
- s. Income Taxes*—The provision for current income taxes is computed based on the pretax income included in the consolidated statement of income. 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. Deferred taxes are measured by applying currently enacted income tax rates to the temporary differences.

- t. Leases**—Foreign consolidated subsidiaries, which apply IFRS, recognize all leases as both assets and liabilities on their balance sheets in principle. Effective April 1, 2019, these subsidiaries adopted IFRS16, Leases. The effect of the adoption was immaterial to the consolidated financial statements for the year ended March 31, 2020. The Group applied the modified retrospective approach.
- u. Foreign Currency Transactions**—All short-term and long-term monetary receivables and payables denominated in foreign currencies are translated into Japanese yen at the exchange rates at the balance sheet date. The foreign exchange gains and losses from translation are recognized in the consolidated statement of income to the extent that they are not hedged by forward exchange contracts.
- v. Foreign Currency Financial Statements**—The balance sheet accounts of the consolidated foreign subsidiaries are translated into Japanese yen at the current exchange rate as of the balance sheet date except for equity, which is translated at the historical rate. Differences arising from such translation are shown as "Foreign currency translation adjustments" under accumulated other comprehensive income in a separate component of equity. Revenue and expense accounts of consolidated foreign subsidiaries are translated into yen at the average exchange rate.
- w. Derivatives and Hedging Activities**—The Group uses derivative financial instruments to manage its exposures to fluctuations in foreign exchange and interest rates. Foreign exchange forward contracts, interest rate and currency swaps, and interest rate swaps are utilized by the Group to reduce foreign currency exchange and interest rate risks. The Group does not enter into derivatives for trading or speculative purposes.

Derivative financial instruments are classified and accounted for as follows: (1) all derivatives are recognized as either assets or liabilities and measured at fair value, and gains or losses on derivative transactions are recognized in the consolidated statement of income; and (2) for derivatives used for hedging purposes, if such derivatives qualify for hedge accounting because of high correlation and effectiveness between the hedging instruments and the hedged items, gains or losses on derivatives are deferred until maturity of the hedged transactions.

Foreign currency forward contracts employed to hedge foreign exchange exposures for export sales and import purchases are measured at fair value and the unrealized gains/losses are recognized in income. Forward contracts applied for forecasted (or committed) transactions are also measured at fair value but the unrealized gains/losses are deferred until the underlying transactions are completed.

Interest rate swaps which qualify for hedge accounting and meet specific matching criteria are not remeasured at market value, but the differential paid or received under the swap agreements is recognized and included in interest expense.

Long-term debt denominated in foreign currencies for which currency and interest rate swaps are used to hedge the foreign currency and interest rate fluctuations is also translated at the contracted rate and the differential paid or received under the swap agreements is recognized and included in interest expense when currency and interest swaps meet the above criteria.

- x. **Per Share Information**—Basic net income per share is computed by dividing net income attributable to common shareholders by the weighted-average number of common shares outstanding for the period, retroactively adjusted for stock splits.

Diluted net income per share reflects the potential dilution that could occur if securities were exercised or converted into common stock. Diluted net income per share of common stock assumes full exercise of outstanding stock acquisition rights.

Cash dividends per share presented in the accompanying consolidated statement of income are dividends applicable to the respective fiscal years, including dividends to be paid after the end of the year.

y. **New Accounting Pronouncements**

Revenue recognition—The International Accounting Standards Board issued IFRS 15, Revenue from Contracts with Customers, together with the introduction of Topic 606 into the Financial Accounting Standards Board's Accounting Standards Codification. IFRS 15 is effective for annual reporting periods beginning after January 1, 2018, and Topic 606 is effective for annual reporting periods beginning after December 15, 2018. These are comprehensive accounting standards regarding revenue recognition. These require the entities to recognize revenue at the estimated transaction price when the entity satisfies a performance obligation.

In response to said issuance, on March 30, 2018, the ASBJ issued ASBJ Statement No. 29, "Accounting Standard for Revenue Recognition," and ASBJ Guidance No. 30, "Implementation Guidance on Accounting Standard for Revenue Recognition", which were revised on March 31, 2020. These establish a comprehensive framework for recognizing revenue from contracts with customers.

The main purpose for developing the accounting standards regarding revenue recognition by the ASBJ, was to enhance the comparability between financial statements under IFRS 15 and under ASBJ Statement No. 29 and Guidance No. 30; the accounting standards fundamentally incorporate the basic policies of IFRS 15, where there are items which should be considered according to business practices in Japan, and alternative policies will be added to the extent that difference between IFRS 15 and ASBJ Statement No. 29 and Guidance No. 30 is immaterial.

The Company and subsidiaries in Japan expect to apply ASBJ Statement No. 29, "Accounting Standard for Revenue Recognition," and ASBJ Guidance No. 30, "Implementation Guidance on Accounting Standard for Revenue Recognition." for annual periods beginning on or after April 1, 2021, and are in the process of measuring the effects of applying the accounting standard and guidance in future applicable periods.

Fair value measurement — On July 4, 2019, the ASBJ issued ASBJ Statement No. 30, "Accounting Standard for Fair Value Measurement," ASBJ Guidance No. 31, "Implementation Guidance on Accounting Standard for Fair Value Measurement," ASBJ Statement No.9, "Accounting Standard for Valuation of Inventories," and ASBJ No. 10, "Accounting Standard for Financial Instruments," and on March 31, 2020, the ASBJ issued ASBJ Guidance No. 19, "Disclosure of Fair Value of Financial Instruments," These are established for developing accounting standards for fair value of financial instruments, valuation of inventories for trading purposes, and the disclosure of fair value of financial instruments by fair value hierarchy. The Group expects to apply the standards and guidance for annual periods beginning on or after April 1, 2021, and are in the process of measuring the effects of applying the accounting standard and guidance in future applicable periods.

Accounting estimates – On March 31, 2020, the ASBJ issued ASBJ Statement No. 31, “Accounting Standard for Disclosure of Accounting Standard for Accounting Estimates”. The disclosure of the accounting estimates that will have significant impact on the financial statements in the following year will be disclosed. The Group expects to apply the standard for annual period beginning April 1, 2020.

Leases—The Financial Accounting Standards Board issued Topic 842, Leases. The standard requires lessees to recognize all leases as both assets and liabilities on their balance sheets in principle. There are no significant changes in the accounting standards for lessors. Topic 842 is in effect for annual reporting periods beginning on or after April 1, 2021. The effects of applying Topic 842 are in the process of being measured.

Accounting Changes and Error Corrections — Disclosure of the Accounting Principles under ASBJ Statement No. 24, "Accounting Standard for Accounting Changes and Error Corrections," and ASBJ Guidance No. 24, "Guidance on Accounting Standard for Accounting Changes and Error Corrections" require the following accounting treatments: (1) Changes in Accounting Policies—When a new accounting policy is applied following revision of an accounting standard, the new policy is applied retrospectively unless the revised accounting standard includes specific transitional provisions, in which case the entity shall comply with the specific transitional provisions. (2) Changes in Presentation—When the presentation of financial statements is changed, prior-period financial statements are reclassified in accordance with the new presentation. (3) Changes in Accounting Estimates—A change in an accounting estimate is accounted for in the period of the change if the change affects that period only, and is accounted for prospectively if the change affects both the period of the change and future periods. (4) Corrections of Prior-Period Errors—When an error in prior-period financial statements is discovered, those statements are restated. On March 31, 2020, the ASBJ revised ASBJ Statement No. 24. The revised accounting standards enhances the disclosure of the accounting principles and procedures that are not stipulated in the related accounting standards. The Group expect to apply the accounting standard for annual periods beginning on April 1, 2020.

z. Changes in presentations

(Consolidated statement of income) “Reversal of provision for product warranties” was previously included in “other –net” and “reversal of allowance for doubtful accounts” was previously separately disclosed under the other income (expense) of the consolidated statement of income for the year ended March 31, 2019. Since the amount of “reversal of provision for product warranties” increased and “reversal of allowance for doubtful accounts” decreased during the year ended March 31, 2020, “reversal of provision for product warranties” for the year ended March 31, 2019 is now separately disclosed and “reversal of allowance for doubtful accounts” for the year ended March 31, 2019 is included in the “other-net” under the other income (expenses). As a result, “reversal of allowance for doubtful accounts” of ¥33 million and “other-net” of ¥1,087 million for the year ended March 31, 2019 were reclassified to “other net” of ¥1,025 million and “reversal of provision for product warranties” of ¥95 million, respectively.

(Consolidated statement of cash flows) “Decrease of provision for NAS battery safety measures,” “increase of provision for loss related to competition law,” and “equity in earnings of unconsolidated subsidiary and associated company” were previously separately disclosed under operating activities of the consolidated statement of cash flows for the year ended March 31, 2019. Since these amounts decreased during the year ended March 31, 2020, these amounts for the year ended March 31, 2019 are now included in the “other-net” under operating activities. As a result, “decrease of provision for NAS battery safety measures” of ¥532 million, “increase of provision for loss related to competition law” of ¥3 million, and “equity in earnings of unconsolidated subsidiary and associated company” of ¥1,565 million for the year ended March 31, 2019 were reclassified to “other-net” under operating activities.

“Purchase of treasury stock” was previously included in “other-net” under financing activities of the consolidated statement of cash flows for the year ended March 31, 2019. Since the amount of “purchase of treasury stock” increased during the year ended March 31, 2020, “purchase of treasury stock” is now separately disclosed. As a result, “other-net” of ¥80 million for the year ended March 31, 2019 was reclassified to “purchase of treasury stock” of ¥5 million and “other-net” of ¥75 million under financing activities.

3. MARKETABLE AND INVESTMENT SECURITIES

Marketable and investment securities as of March 31, 2020 and 2019, consisted of the following:

	Millions of Yen		Thousands of U.S. Dollars
	2020	2019	2020
Current:			
Investment trusts and other	¥ 9,617	¥ 16,786	\$ 88,227
Debt securities	5,000	19,243	45,872
Total	¥ 14,617	¥ 36,029	\$ 134,099
Noncurrent:			
Equity securities and other	¥ 33,971	¥ 48,751	\$ 311,658
Debt securities	—	—	—
Total	¥ 33,971	¥ 48,751	\$ 311,658

The costs and aggregate fair values of marketable and investment securities at March 31, 2020 and 2019, were as follows:

	Millions of Yen			
March 31, 2020	Cost	Unrealized Gains	Unrealized Losses	Fair Value
Securities classified as:				
Available-for-sale:				
Equity securities	¥ 16,230	¥ 17,832	¥ 2,150	¥ 31,912
Investment trusts and other	9,571	284	238	9,617
Held-to-maturity:				
Debt securities	5,000	—	0	5,000

	Millions of Yen			
March 31, 2019	Cost	Unrealized Gains	Unrealized Losses	Fair Value
Securities classified as:				
Available-for-sale:				
Equity securities	¥ 17,385	¥ 30,591	¥ 1,311	¥ 46,665
Investment trusts and other	16,148	720	82	16,786
Held-to-maturity:				
Debt securities	19,243	5	4	19,244

	Thousands of U.S. Dollars			
March 31, 2020	Cost	Unrealized Gains	Unrealized Losses	Fair Value
Securities classified as:				
Available-for-sale:				
Equity securities	\$ 148,897	\$ 163,595	\$ 19,724	\$ 292,768
Investment trusts and other	87,806	2,603	2,181	88,228
Held-to-maturity:				
Debt securities	45,872	—	2	45,870

Proceeds from sales of available-for-sale securities (including marketable securities and investment securities) for the years ended March 31, 2020 and 2019, were ¥4,805 million (\$44,086 thousand) and ¥832 million, respectively. Realized gains on these sales, computed on the moving-average cost basis, were ¥3,672 million (\$ 33,684 thousand) and ¥676 million for the years ended March 31, 2020 and 2019, respectively. Realized losses on these sales, computed on the moving-average cost basis, were ¥73 million (\$ 672 thousand) and ¥1 million for the years ended March 31, 2020 and 2019, respectively.

4. INVENTORIES

Inventories at March 31, 2020 and 2019, consisted of the following:

	Millions of Yen		Thousands of U.S. Dollars
	2020	2019	2020
Finished products	¥ 64,125	¥ 56,747	\$ 588,307
Work in process	17,293	14,981	158,649
Raw materials and supplies	75,078	75,406	688,786
Cost of contracts in progress	894	898	8,201
Total	¥ 157,390	¥ 148,032	\$ 1,443,943

5. LONG-LIVED ASSETS

The Group reviewed its long-lived assets for impairment as of March 31, 2020. As a result, the Group recognized an impairment loss of ¥12,559 million (\$115,219 thousand) as other expense mainly in the following groups which deteriorated in profitability or in the groups which included idle assets. The carrying amounts of the relevant assets were written down to their recoverable value for the year ended March 31, 2020. The recoverable values of those assets were measured at their net selling values or the values in use, whichever were higher. Their net selling values were based on appraisal values assessed by a third party and the values in use calculated by discounting future cash flows with a discount rate of 9.4%. The Group calculates the discounted future cash flows assuming the recovery in global car sales and production for the period subsequent to the year ending March 31, 2022 while sales and production in the Ceramics business will continue to decline due to the spread of COVID-19 during for the year ending March 31, 2021 based on the market report of the independent research organization.

Groups	Asset Category	Location	Millions of Yen	Thousands of U.S. Dollars
			2020	2020
Ceramics business	Buildings and structures, Machinery and equipment, Construction in progress and other	Thailand	¥ 9,687	\$ 88,876
Package business	Buildings and structures, Machinery and equipment, Construction in progress and other	Japan and Malaysia	2,249	20,632
Industrial	Machinery	China	311	2,852

The Group recognized impairment losses for the year ended March 31, 2020, as follows:

	Millions of Yen	Thousands of U.S. Dollars
	2020	2020
Buildings and structures	¥ 2,867	\$ 26,301
Machinery and equipment	4,948	45,394
Construction in progress	3,279	30,085
Land	471	4,319
Other	994	9,120
Total	<u>¥ 12,559</u>	<u>\$ 115,219</u>

The Group reviewed its long-lived assets for impairment as of March 31, 2019. As a result, the Group recognized an impairment loss of ¥10,935 million as other expense mainly in the following groups which deteriorated in profitability or included assets to be disposed of and the carrying amounts of the relevant assets were written down to their recoverable value for the year ended March 31, 2019. The recoverable value of those assets were measured at their net selling values, based on appraisal values assessed by a third party.

Groups	Asset category	Location	Millions of Yen
			2019
Package business	Buildings and structures, Machinery and equipment, and other	Japan and Malaysia	¥ 5,494
Insulator business	Buildings and structures, Machinery and equipment, and other	Japan and China	3,134
Other	Buildings and structures and Land	Japan	1,708

The Group recognized impairment losses for the year ended March 31, 2019 as follows:

	Millions of Yen
	2019
Buildings and structures	¥ 2,081
Machinery and equipment	6,051
Construction in progress	265
Land	1,476
Other	1,062
Total	<u>¥ 10,935</u>

6. SHORT-TERM BORROWINGS AND LONG-TERM DEBT

Short-term borrowings at March 31, 2020 and 2019, consisted of notes to banks. The weighted-average interest rates on short-term borrowings as of March 31, 2020 and 2019, were 1.8%.

Long-term debt at March 31, 2020 and 2019, consisted of the following:

	Millions of Yen		Thousands of U.S. Dollars
	2020	2019	2020
Borrowings from banks and other financial institutions due serially through 2036, with weighted-average interest rates of 1.6% (2020) and 1.2% (2019)	¥ 202,993	¥ 200,192	\$ 1,862,318
Unsecured 0.657% yen bonds due July 27, 2032	10,000	10,000	91,743
Unsecured 0.860% yen bonds due July 26, 2038	15,000	15,000	137,615
Total	227,993	225,192	2,091,676
Less: portion due within one year	(9,219)	(29,198)	(84,576)
Long-term debt, less current portion	¥ 218,774	¥ 195,994	\$ 2,007,100

Annual maturities of long-term debt at March 31, 2020, were as follows:

Year Ending March 31	Millions of Yen	Thousands of U.S. Dollars
2021	¥ 9,219	\$ 84,576
2022	20,898	191,723
2023	19,880	182,383
2024	31,132	285,613
2025	35,306	323,909
2026 and thereafter	<u>111,558</u>	<u>1,023,472</u>
Total	<u>¥227,993</u>	<u>\$ 2,091,676</u>

7. RETIREMENT AND PENSION PLANS

The Company and certain consolidated subsidiaries have severance payment plans for employees.

The Company and certain domestic subsidiaries have unfunded lump-sum payment plans, defined benefit pension plans, smaller enterprise retirement allowance mutual aid plans, and specific retirement allowance mutual aid plans.

Furthermore, additional retirement benefits that are not included in net defined benefit liability are paid in certain cases.

Some of the domestic subsidiaries participate in multiemployer contributory funded plans, and the plans are accounted for as if the plans were defined contribution plans in cases where the plan assets attributable to the contributions by the subsidiaries cannot be rationally determined.

Certain U.S. subsidiaries have defined benefit plans and defined contribution plans. The simplified calculation method was applied to measure the liability and the cost of defined benefit plans and lump-sum payment plans in immaterial domestic subsidiaries.

a. Defined Benefit Pension Plans

- (1) The changes in defined benefit obligation for the years ended March 31, 2020 and 2019 (except for the plans to which the simplified method was applied), were as follows:

	Millions of Yen		Thousands of U.S. Dollars
	2020	2019	2020
Balance at beginning of year	¥ 90,348	¥ 92,093	\$ 828,881
Current service cost	3,557	3,533	32,635
Interest cost	645	763	5,914
Actuarial losses	(83)	390	(757)
Benefits paid	(3,614)	(3,649)	(33,159)
Past service cost	(135)	—	(1,237)
Decrease associated with abolishment of retirement benefit plans	(25)	(3,463)	(227)
Others	(101)	681	(932)
Balance at end of year	¥ 90,592	¥ 90,348	\$ 831,118

Note: "Decrease associated with abolishment of retirement benefit plans" accounts for the abolishment of the retirement benefit plan of the Company's subsidiary in the U.S.

- (2) The changes in plan assets for the years ended March 31, 2020 and 2019 (except for the plans to which the simplified method was applied), were as follows:

	Millions of Yen		Thousands of U.S. Dollars
	2020	2019	2020
Balance at beginning of year	¥ 78,996	¥ 81,050	\$ 724,738
Expected return on plan assets	931	1,065	8,544
Actuarial losses	(1,117)	(1)	(10,246)
Contributions from the employer	2,515	2,986	23,075
Benefits paid	(3,233)	(3,271)	(29,663)
Decrease associated with abolishment of retirement benefit plans	—	(3,352)	—
Others	(12)	519	(119)
Balance at end of year	¥ 78,080	¥ 78,996	\$ 716,329

Note: "Decrease associated with abolishment of retirement benefit plans" accounts for the abolishment of the retirement benefit plan of the Company's subsidiary in the U.S.

- (3) The changes in net defined benefit liability, where the simplified method was applied to measure the liability, for the years ended March 31, 2020 and 2019, were as follows:

	Millions of Yen		Thousands of U.S. Dollars
	2020	2019	2020
Balance at beginning of year	¥ 2,115	¥ 2,051	\$ 19,400
Pension costs	281	321	2,579
Benefits paid	(222)	(203)	(2,032)
Contributions to pension plans	(62)	(54)	(568)
Balance at end of year	¥ 2,112	¥ 2,115	\$ 19,379

- (4) Reconciliation between the asset and the liability recorded in the consolidated balance sheet and the balances of defined benefit obligation and plan assets as of March 31, 2020 and 2019, were as follows:

	Millions of Yen		Thousands of U.S. Dollars
	2020	2019	2020
Funded defined benefit obligation	¥ 74,291	¥ 77,524	\$ 681,574
Plan assets	(78,968)	(79,919)	(724,479)
	(4,677)	(2,395)	(42,905)
Unfunded defined benefit obligation	19,302	15,862	177,085
Net liability arising from defined benefit obligation	¥ 14,625	¥ 13,467	\$ 134,180

	Millions of Yen		Thousands of U.S. Dollars
	2020	2019	2020
Net defined benefit liability	¥ 21,012	¥ 20,935	\$ 192,774
Net defined benefit asset	(6,387)	(7,468)	(58,594)
Net liability arising from defined benefit obligation	¥ 14,625	¥ 13,467	\$ 134,180

- (5) The components of net periodic benefit costs for the years ended March 31, 2020 and 2019, were as follows:

	Millions of Yen		Thousands of U.S. Dollars
	2020	2019	2020
Service cost	¥ 3,557	¥ 3,533	\$ 32,635
Interest cost	645	763	5,914
Expected return on plan assets	(931)	(1,065)	(8,544)
Recognized actuarial losses	960	2,610	8,808
Amortization of past service cost	(214)	(235)	(1,965)
Benefit costs measured by the simplified method	281	321	2,579
Other	(50)	(1)	(459)
Net periodic benefit costs	¥ 4,248	¥ 5,926	\$ 38,968

Note: In addition to the above, the Company recognized "Loss on liquidation of subsidiaries" under other expenses for the years ended March 31, 2020 and 2019. This loss includes the abolishment of the retirement benefit plan of the Company's consolidated subsidiary in the U.S.

- (6) Amounts recognized in other comprehensive income (before income tax effect) in respect of defined retirement benefit plans for the years ended March 31, 2020 and 2019, were as follows:

	Millions of Yen		Thousands of U.S. Dollars
	2020	2019	2020
Actuarial (gains) losses	¥ (100)	¥ 3,096	\$ (911)
Prior service cost	(79)	(235)	(728)
Net periodic benefit costs	¥ (179)	¥ 2,861	\$ (1,639)

- (7) Amounts recognized in accumulated other comprehensive income (before income tax effect) in respect of defined retirement benefit plans as of March 31, 2020 and 2019, were as follows:

	Millions of Yen		Thousands of U.S. Dollars
	2020	2019	2020
Unrecognized actuarial gains	¥ (9,004)	¥ (8,905)	\$ (82,607)
Unrecognized past service cost	1,434	1,513	13,155
Total	¥ (7,570)	¥ (7,392)	\$ (69,452)

- (8) Plan assets

a. Components of plan assets

Plan assets as of March 31, 2020 and 2019, consisted of the following:

	2020	2019
Assets in an insurer's general account	41 %	40 %
Equity investments	12 %	14 %
Debt investments	34 %	36 %
Cash and cash equivalents	1 %	1 %
Others	12 %	9 %
Total	100 %	100 %

b. Method of determining the expected rate of return on plan assets

The expected rate of return on plan assets is determined considering the long-term rates of return which are expected currently and in the future from the various components of the plan assets.

(9) Assumptions used for the years ended March 31, 2020 and 2019, were set forth as follows:

	2020	2019
Discount rate	Primarily 0.6%	Primarily 0.6%
Expected rate of return on plan assets	Primarily 1.0%	Primarily 1.0%
Expected rate of future salary increase	Primarily 3.4%—4.6%	Primarily 3.4%—4.6%

b. Funded Status of the Multiemployer Contributory Funded Pension Plans

Some subsidiaries participate in a multiemployer plan where the amount of plan assets corresponding to the contributions made by the subsidiaries cannot be reasonably calculated. Therefore, it is accounted for using the same method as a defined contribution plan.

The contributions to said multiemployer plan, which are accounted for using the same method as a defined contribution plan, were ¥103 million (\$946 thousand) and ¥106 million for the years ended March 31, 2020 and 2019, respectively.

(1) The funded status of the multiemployer plan as of March 31, 2020 and 2019, were as follows:

	Millions of Yen		Thousands of U.S. Dollars
	2020	2019	2020
Plan assets	¥ 127,217	¥ 130,909	\$ 1,167,128
Sum of actuarial liabilities of pension plan and minimum actuarial reserve	(141,569)	(146,380)	(1,298,795)
Net balance	¥ (14,352)	¥ (15,472)	\$ (131,667)

The net balance above is mainly a result of the following:

	Millions of Yen		Thousands of U.S. Dollars
	2020	2019	2020
Prior service cost	¥ 16,887	¥ 18,835	\$ 154,924
Retained earnings	(828)	4,850	(7,599)
General reserve	3,363	(1,487)	30,856

Prior service cost under the plan is amortized on a straight-line basis over 20 years.

(2) The contribution ratios of the Group in the multiemployer plan for the years ended March 31, 2020 and 2019, were 2.0%.

c. Defined Contribution Pension Plans

The Group's contributions to defined contribution pension plan funds for the years ended March 31, 2020 and 2019, were ¥268 million (\$2,458 thousand) and ¥254 million, respectively.

8. EQUITY

Japanese companies are subject to the Companies Act of Japan (the "Companies Act"). The significant provisions in the Companies Act that affect financial and accounting matters are summarized below:

a. Dividends

Under the Companies Act, companies can pay dividends at any time during the fiscal year in addition to the year-end dividend upon resolution at the shareholders' meeting. Additionally, for companies that meet certain criteria including (1) having a Board of Directors, (2) having independent auditors, (3) having an Audit & Supervisory Board, and (4) the term of service of the directors being prescribed as one year rather than the normal two-year term by its articles of incorporation, the Board of Directors may declare dividends (except for dividends-in-kind) at any time during the fiscal year if the company has prescribed so in its articles of incorporation. However, the Company does not meet all the above criteria.

Semiannual interim dividends may also be paid once a year upon resolution by the Board of Directors if the articles of incorporation of the company so stipulate. The Companies Act provides certain limitations on the amounts available for dividends or the purchase of treasury stock. The limitation is defined as the amount available for distribution to the shareholders, but the amount of net assets after dividends must be maintained at no less than ¥3 million.

b. Increases/Decreases and Transfer of Common Stock, Reserve, and Surplus

The Companies Act requires that an amount equal to 10% of dividends must be appropriated as a legal reserve (a component of retained earnings) or as additional paid-in capital (a component of capital surplus), depending on the equity account charged upon the payment of such dividends, until the aggregate amount of legal reserve and additional paid-in capital equals 25% of the common stock. Under the Companies Act, the total amount of additional paid-in capital and legal reserve may be reversed without limitation. The Companies Act also provides that common stock, legal reserve, additional paid-in capital, other capital surplus, and retained earnings can be transferred among the accounts within equity under certain conditions upon resolution of the shareholders.

c. Treasury Stock and Treasury Stock Acquisition Rights

The Companies Act also provides for companies to purchase treasury stock and dispose of such treasury stock by resolution of the Board of Directors. The amount of treasury stock purchased cannot exceed the amount available for distribution to the shareholders, which is determined by a specific formula. Under the Companies Act, stock acquisition rights are presented as a separate component of equity. The Companies Act also provides that companies can purchase both treasury stock acquisition rights and treasury stock. Such treasury stock acquisition rights are presented as a separate component of equity or deducted directly from stock acquisition rights.

9. STOCK OPTIONS

The stock options outstanding as of March 31, 2020 were as follows:

Stock Option Scheme	Persons Originally Granted	Number of Options Originally Granted	Date of Grant	Exercise Price	Exercise Period
2005 Stock Option Scheme	12 directors 2 full-time audit and supervisory board members 10 officers	Common shares 180,000 shares	August 5, 2005	¥1 (\$0.01)	From August 5, 2005 to June 30, 2035
2006 Stock Option Scheme (2-1)	12 directors 2 full-time audit and supervisory board members	Common shares 113,000 shares	August 11, 2006	¥1 (\$0.01)	From August 12, 2006 to June 30, 2036
2006 Stock Option Scheme (2-2)	10 officers	Common shares 41,000 shares	August 11, 2006	¥1 (\$0.01)	From August 12, 2006 to June 30, 2036
2007 Stock Option Scheme	12 directors 10 officers	Common shares 62,000 shares	August 30, 2007	¥1 (\$0.01)	From August 31, 2007 to June 30, 2037
2008 Stock Option Scheme	11 directors 9 officers	Common shares 57,000 shares	August 13, 2008	¥1 (\$0.01)	From August 14, 2008 to June 30, 2038
2009 Stock Option Scheme	12 directors 10 officers	Common shares 62,000 shares	August 17, 2009	¥1 (\$ 0.01)	From August 18, 2009 to June 30, 2039
2010 Stock Option Scheme	12 directors 11 officers	Common shares 64,000 shares	August 16, 2010	¥1 (\$0.01)	From August 17, 2010 to June 30, 2040
2011 Stock Option Scheme	11 directors 11 officers	Common shares 62,000 shares	August 15, 2011	¥1 (\$0.01)	From August 16, 2011 to June 30, 2041

Stock Option Scheme	Persons Originally Granted	Number of Options Originally Granted	Date of Grant	Exercise price	Exercise Period
2012 Stock Option Scheme	10 directors 14 officers	Common shares 66,000 shares	August 15, 2012	¥1 (\$0.01)	From August 16, 2012 to June 30, 2042
2013 Stock Option Scheme	9 directors 16 officers	Common shares 61,000 Shares	August 16, 2013	¥1 (\$0.01)	From August 17, 2013 to June 30, 2043
2014 Stock Option Scheme	10 directors 13 officers	Common shares 57,000 Shares	August 19, 2014	¥1 (\$0.01)	From August 20, 2014 to June 30, 2044
2015 Stock Option Scheme	10 directors 10 officers	Common shares 52,000 Shares	August 18, 2015	¥1 (\$0.01)	From August 19, 2015 to June 30, 2045
2016 Stock Option Scheme	10 directors 13 officers	Common shares 60,000 Shares	August 16, 2016	¥1 (\$0.01)	From August 17, 2016 to June 30, 2046
2017 Stock Option Scheme	10 directors 12 officers	Common shares 58,000 Shares	August 16, 2017	¥1 (\$0.01)	From August 17, 2017 to June 30, 2047
2018 Stock Option Scheme	9 directors 13 officers	Common shares 55,000 Shares	July 12, 2018	¥1 (\$0.01)	From July 13, 2018 to June 30, 2048
2019 Stock Option Scheme	9 directors 15 officers	Common shares 61,000 Shares	July 9, 2019	¥1 (\$0.01)	From July 10, 2019 to June 30, 2049

The stock option activity is as follows:

	2005 Stock Option	2006 Stock Option (2-1)	2006 Stock Option (2-2) (Shares)	2007 Stock Option	2008 Stock Option
<u>For the year ended March 31, 2019</u>					
<u>Non-vested</u>					
April 1, 2018					
—Outstanding	-	-	-	-	-
Granted	-	-	-	-	-
Canceled	-	-	-	-	-
Vested	-	-	-	-	-
March 31, 2019					
—Outstanding	-	-	-	-	-
<u>Vested</u>					
April 1, 2018					
—Outstanding	32,000	21,000	4,000	13,000	19,000
Vested	-	-	-	-	-
Exercised	-	-	-	-	2,000
Canceled	-	-	-	-	-
March 31, 2019					
—Outstanding	32,000	21,000	4,000	13,000	17,000
<u>For the year ended March 31, 2020</u>					
<u>Non-vested</u>					
March 31, 2019					
—Outstanding	-	-	-	-	-
Granted	-	-	-	-	-
Canceled	-	-	-	-	-
Vested	-	-	-	-	-
March 31, 2020					
—Outstanding	-	-	-	-	-
<u>Vested</u>					
March 31, 2019					
—Outstanding	32,000	21,000	4,000	13,000	17,000
Vested	-	-	-	-	-
Exercised	20,000	16,000	-	5,000	7,000
Canceled	-	-	-	-	-
March 31, 2020					
—Outstanding	12,000	5,000	4,000	8,000	10,000
Exercise price	¥1	¥1	¥1	¥1	¥1
	(\$0.01)	(\$0.01)	(\$0.01)	(\$0.01)	(\$0.01)
Average stock price at exercise	¥1,727	¥1,761	N/A	¥1,591	¥1,717
	(\$15.84)	(\$16.16)		(\$14.60)	(\$15.75)
Fair value price at grant date	-	¥1,506	¥1,506	¥3,658	¥1,434
		(\$13.82)	(\$13.82)	(\$33.56)	(\$13.16)

	2009 Stock Option	2010 Stock Option	2011 Stock Option	2012 Stock Option	2013 Stock Option
			(Shares)		
<u>For the year ended March 31, 2019</u>					
<u>Non-vested</u>					
April 1, 2018					
— Outstanding	-	-	-	-	-
Granted	-	-	-	-	-
Canceled	-	-	-	-	-
Vested	-	-	-	-	-
March 31, 2019					
— Outstanding	-	-	-	-	-
<u>Vested</u>					
April 1, 2018					
— Outstanding	28,000	34,000	36,000	41,000	42,000
Vested	-	-	-	-	-
Exercised	3,000	-	3,000	2,000	2,000
Canceled	-	-	-	-	-
March 31, 2019					
— Outstanding	25,000	34,000	33,000	39,000	40,000
<u>For the year ended March 31, 2020</u>					
<u>Non-vested</u>					
March 31, 2019					
— Outstanding	-	-	-	-	-
Granted	-	-	-	-	-
Canceled	-	-	-	-	-
Vested	-	-	-	-	-
March 31, 2020					
— Outstanding	-	-	-	-	-
<u>Vested</u>					
March 31, 2019					
— Outstanding	25,000	34,000	33,000	39,000	40,000
Vested	-	-	-	-	-
Exercised	15,000	16,000	6,000	7,000	10,000
Canceled	-	-	8,000	8,000	-
March 31, 2020					
— Outstanding	10,000	18,000	19,000	24,000	30,000
Exercise price	¥1	¥1	¥1	¥1	¥1
	(\$0.01)	(\$0.01)	(\$0.01)	(\$0.01)	(\$0.01)
Average stock price at exercise	¥1,634	¥1,649	¥1,660	¥1,541	¥1,441
	(\$14.99)	(\$15.13)	(\$15.23)	(\$14.14)	(\$13.22)
Fair value price at grant date	¥2,072	¥1,289	¥1,100	¥923	¥1,276
	(\$19.01)	(\$11.83)	(\$10.09)	(\$8.47)	(\$11.71)

	2014 Stock Option	2015 Stock Option	2016 Stock Option	2017 Stock Option	2018 Stock Option
			(Shares)		
<u>For the year ended March 31, 2019</u>					
<u>Non-vested</u>					
April 1, 2018					
— Outstanding	-	-	-	-	-
Granted	-	-	-	-	55,000
Canceled	-	-	-	-	-
Vested	-	-	-	-	55,000
March 31, 2019					
— Outstanding	-	-	-	-	-
<u>Vested</u>					
April 1, 2018					
— Outstanding	52,000	52,000	60,000	58,000	-
Vested	-	-	-	-	55,000
Exercised	5,000	-	-	-	-
Canceled	-	-	-	-	-
March 31, 2019					
— Outstanding	47,000	52,000	60,000	58,000	55,000
<u>For the year ended March 31, 2020</u>					
<u>Non-vested</u>					
March 31, 2019					
— Outstanding	-	-	-	-	-
Granted	-	-	-	-	-
Canceled	-	-	-	-	-
Vested	-	-	-	-	-
March 31, 2020					
— Outstanding	-	-	-	-	-
<u>Vested</u>					
March 31, 2019					
— Outstanding	47,000	52,000	60,000	58,000	55,000
Vested	-	-	-	-	-
Exercised	4,000	6,000	2,000	-	-
Canceled	-	-	-	-	-
March 31, 2020					
— Outstanding	43,000	46,000	58,000	58,000	55,000
Exercise price	¥1	¥1	¥1	¥1	¥1
	(\$0.01)	(\$0.01)	(\$0.01)	(\$0.01)	(\$0.01)
Average stock price at exercise	¥1,512	¥1,502	¥1,568	N/A	N/A
	(\$13.87)	(\$13.78)	(\$14.39)		
Fair value price at grant date	¥2,510	¥2,850	¥2,060	¥1,897	¥1,725
	(\$23.03)	(\$26.15)	(\$18.90)	(\$17.40)	(\$15.83)

**2019
Stock
Option**

(Shares)

For the year ended March 31, 2019

Non-vested

April 1, 2018

— Outstanding

Granted

Canceled

Vested

March 31, 2019

— Outstanding

Vested

April 1, 2018

— Outstanding

Vested

Exercised

Canceled

March 31, 2019

— Outstanding

For the year ended March 31, 2020

Non-vested

March 31, 2019

— Outstanding -

Granted 61,000

Canceled -

Vested 61,000

March 31, 2020

— Outstanding -

Vested

March 31, 2019

— Outstanding -

Vested 61,000

Exercised -

Canceled -

March 31, 2020

— Outstanding 61,000

Exercise price ¥1

(\$0.01)

Average stock price at exercise N/A

Fair value price ¥1,362
at grant date (\$12.50)

The Assumptions Used to Measure the Fair Value of the 2019 Stock Option

Estimate method:	Black-Scholes option-pricing model
Volatility of stock price:	30.46%
Estimated remaining outstanding period:	Four and a half years
Estimated dividend:	¥50 per share
Risk-free interest rate:	(0.232%)

10. INCOME TAXES

The Company and its domestic subsidiaries are subject to Japanese national and local income taxes which, in the aggregate, resulted in normal effective statutory tax rates of approximately 30.6% and 30.5% for the years ended March 31, 2020 and 2019.

The tax effects of significant temporary differences and tax loss carryforwards which resulted in deferred tax assets and liabilities at March 31, 2020 and 2019, were as follows:

	Millions of Yen		Thousands of U.S. Dollars
	2020	2019	2020
Deferred tax assets:			
Inventories	¥ 8,483	¥ 8,311	\$ 77,824
Accounts payable and accrued expenses	3,013	3,383	27,641
Enterprise taxes payable	587	574	5,386
Property, plant and equipment	13,277	11,764	121,810
Pension and severance cost	6,271	5,987	57,534
Tax loss carryforwards	8,240	5,269	75,595
Investment securities	1,289	1,248	11,823
Tax deduction of foreign subsidiaries	1,241	2,527	11,388
Provision for NAS Battery safety measures	507	620	4,647
Provision for loss related to competition law	350	360	3,214
Provision for product warranties	373	456	3,421
Other	4,070	3,293	37,342
Total	47,701	43,792	437,625
Less: valuation allowance (Note)	(18,699)	(14,117)	(171,553)
Offset with deferred tax liabilities	(16,236)	(19,233)	(148,950)
Net deferred tax assets	¥ 12,766	¥ 10,442	\$ 117,122
Deferred tax liabilities:			
Unrealized gain on available-for-sale securities	¥ 4,274	¥ 8,335	\$ 39,215
Deferred gains on sales of property	1,081	964	9,921
Undistributed earnings of foreign subsidiaries	6,005	6,150	55,090
Fixed asset	3,203	1,945	29,382
Net defined benefit asset	1,943	2,014	17,827
Securities contributed to retirement benefit trust	1,274	1,418	11,686
Other	454	276	4,160
Total	18,234	21,102	167,281
Offset with deferred tax assets	(16,236)	(19,233)	(148,951)
Net deferred tax liabilities	¥ 1,998	¥ 1,869	\$ 18,330

Note: Valuation allowance increased by ¥4,582 million (\$42,037 thousand) mainly due to recognizing ¥1,938 million (\$17,779 thousand) in connection with impairment loss on fixed assets of the consolidated subsidiary, NGK Ceramics (Thailand) CO., LTD., ¥640 million (\$5,867 thousand) in connection with tax loss carryforward of NGK Ceramics (Thailand) CO., LTD., and ¥1,273 million (\$11,681 thousand) in connection with tax loss carryforward of the consolidated subsidiary, NGK Electronics Device, INC.

A reconciliation between the normal effective statutory tax rates and the actual effective tax rates reflected in the accompanying consolidated statement of income for the year ended March 31, 2020, with the corresponding figures for 2019, is as follows:

	<u>2020</u>		<u>2019</u>
Normal effective statutory tax rate	30.6 %		30.5 %
Expenses not deductible for income tax purposes	2.4		1.4
Income excluded from income tax, such as dividends received	(1.6)		(0.2)
Change in valuation allowance	11.1		8.4
Undistributed earnings of foreign subsidiaries	(0.3)		0.7
Lower income tax rates applicable to income in certain foreign countries	(0.2)		(1.0)
Tax credit of foreign subsidiaries	(0.7)		(1.0)
Tax credit of research and development costs	(4.2)		(3.6)
Equity in earnings of unconsolidated subsidiaries and associated companies	(0.9)		(0.9)
Effect of liquidation of subsidiaries	—		(6.6)
Sales of shares of subsidiaries and associates	2.8		—
Expire of tax loss carryforward	0.5		1.4
Other — net	0.1		0.3
Actual effective tax rate	<u>39.6 %</u>		<u>29.4 %</u>

Notes: Regarding filing action for the revocation of correction based on transfer pricing taxation

With regard to the transactions between the Company and its subsidiary in Poland from the fiscal year ended March 31, 2007 through the fiscal year ended March 31, 2010, the Company received a correction (approximately ¥6.2 billion in tax penalties) based on transfer pricing taxation issued by the Nagoya Regional Taxation Bureau in March 2012. The Company filed an action with the Tokyo District Court for the revocation of correction in December 2016, and it is still under examination.

Following the correction abovementioned, also with regard to the transactions between the Company and its subsidiary in Poland from the fiscal year ended March 31, 2011 through the fiscal year ended March 31, 2015, the Company received a correction based on transfer pricing taxation from the Nagoya Regional Taxation Bureau in June 2017, and made a payment of approximately ¥8.5 billion in tax penalties, including local taxes. A request for re-examination was submitted to the Nagoya National Tax Tribunal in July 2018 to request a cancellation of the correction, and the Company received a written verdict that partially rescinded the correction in July 2019. However, it went only so far as to refund approximately ¥0.4 billion of corporate taxes and local taxes, etc. at this stage. Because the Company takes the position that the entire amount should be rescinded, it filed an action with the Tokyo District Court for the revocation of correction in December 2019.

In light of the above, the Company estimated tax amounts for the said period based on the premise that it would be subject to the said correction for fiscal years subsequent to March 31, 2016 and recognized the amounts in the consolidated financial statements.

Notes: Refund of income taxes

The Company received a tax refunded following the receipt of a written verdict issued by the Nagoya National Tax Tribunal in July 2019, which partially rescinded the correction based on transfer pricing taxation on tax penalties paid by the Company with respect to transactions between the Company and its subsidiary in Poland.

11. RESEARCH AND DEVELOPMENT COSTS

Research and development costs charged to income were ¥22,929 million (\$210,357 thousand) and ¥23,271 million for the years ended March 31, 2020 and 2019, respectively, which included consigned research costs of ¥1,109 million (\$10,174 thousand) and ¥1,898 million for the years ended March 31, 2020 and 2019, respectively.

12. LEASES

The minimum rental commitments under noncancelable operating leases at March 31, 2020, were as follows:

	Millions of Yen	Thousands of U.S. Dollars
Due within one year	¥ 228	\$ 2,090
Due after one year	416	3,820
Total	¥ 644	\$ 5,910

13. FINANCIAL INSTRUMENTS AND RELATED DISCLOSURES

(1) Group policy for financial instruments

The Group raises funds through borrowings from banks or other financial institutions. Temporary excess funds are invested mainly in low-risk financial assets. It is the Group's policy to use derivatives not for speculation, but for hedging the risks from operating receivables, payables, and borrowings.

(2) Nature and extent of risks arising from financial instruments and risk management for financial instruments

The credit risks from receivables, such as trade notes and trade accounts, are managed by each business unit according to the characteristics of the customers. Although receivables in foreign currencies are exposed to the market risk of fluctuation in foreign currency exchange rates, a certain percentage of the position, net of payables in foreign currencies, is hedged by using forward foreign currency contracts.

Marketable and investment securities, which consist mainly of held-to-maturity bonds and the capital stocks of customers or suppliers, are exposed to market risk. The risk is insignificant with respect to the held-to-maturity bonds because investments in bonds are limited to highly rated bonds. To manage the risk, the market price and the financial position of the issuers are reviewed constantly. Moreover, with respect to those other than held-to-maturity, the portfolio is constantly reviewed considering market circumstances and relationships with the issuers.

Payment terms of almost all trade payables, including notes and accounts, are less than four months.

The borrowings from banks, other financial institutions, and debenture bonds are principally raised for capital investment, and their maximum maturities do not exceed 18 years and 4 months after the balance sheet date.

Derivatives consist of forward currency contracts, which are for hedging currency risks from the trade receivables and payables denominated in foreign currencies; currency and interest rate swaps, which are for hedging foreign exchange risks from the borrowings denominated in foreign currencies and interest rate risk; and interest rate swaps, which are for reducing cash outflow from interest payments of borrowings. The Company's management believes that the credit risks from those transactions are not significant because the transactions are entered into only with highly rated financial institutions. Derivative transactions are strictly managed complying with internal policies for approval and reporting. For more details about hedge accounting, including hedging instruments, hedged items, hedge policies, and hedge effectiveness, please see Note 2.w.

(3) Supplemental remarks on fair values of financial instruments

The contract or notional amounts of derivatives that are shown in Note 14 do not represent the amounts exchanged by the parties and do not measure the Group's exposure to credit or market risk.

(a) Fair values of financial instruments

March 31, 2020	Millions of yen		
	Carrying Amount	Fair Value	Unrealized Gain/Loss
Cash and cash equivalents	¥ 94,691	¥ 94,691	-
Time deposits	1,869	1,869	-
Notes and accounts receivable:			
Trade notes and accounts	101,378	101,364	¥ (14)
Marketable and investment securities	62,078	67,786	5,708
Short-term borrowings	(6,407)	(6,407)	-
Notes and accounts payable:			
Trade notes and accounts	(42,690)	(42,690)	-
Income taxes payable	(12,226)	(12,226)	-
Long-term debt, including current portion	(227,993)	(232,756)	(4,763)
Derivatives	(465)	(465)	-

March 31, 2019	Millions of yen		
	Carrying Amount	Fair Value	Unrealized Gain/Loss
Cash and cash equivalents	¥ 123,984	¥ 123,984	-
Time deposits	4,149	4,149	-
Notes and accounts receivable:			
Trade notes and accounts	106,414	106,373	¥ (41)
Marketable and investment securities	103,327	106,096	2,769
Short-term borrowings	(4,231)	(4,231)	-
Notes and accounts payable:			
Trade notes and accounts	(51,032)	(51,032)	-
Income taxes payable	(11,731)	(11,731)	-
Long-term debt, including current portion	(225,192)	(230,937)	(5,745)
Derivatives	(141)	(141)	-

March 31, 2020	Thousands of U.S. Dollars		
	Carrying Amount	Fair Value	Unrealized Gain/Loss
Cash and cash equivalents	\$ 868,727	\$ 868,727	-
Time deposits	17,145	17,145	-
Notes and accounts receivable:			
Trade notes and accounts	930,073	929,940	\$ (133)
Marketable and investment securities	569,527	621,889	52,362
Short-term borrowings	(58,782)	(58,782)	-
Notes and accounts payable:	(391,652)	(391,652)	-
Trade notes and accounts			
Income taxes payable	(112,163)	(112,163)	-
Long-term debt, including current portion	(2,091,676)	(2,135,374)	(43,698)
Derivatives	(4,264)	(4,264)	-

Cash and cash equivalents and time deposits

The carrying values of cash and cash equivalents and time deposits approximate fair value because of their short maturities.

Notes and accounts receivable

The fair values of the majority of receivables are measured at the carrying amount because of their short maturities, while those of some receivables are measured at the amount to be received at maturity discounted at the Group's assumed discount rate determined considering credit risks.

Marketable and investment securities

The fair values of the majority of marketable and investment securities are measured at the quoted market price. The carrying amount of some securities represents the fair value because the fair value approximates such carrying amount. The fair value information for the marketable and investment securities by classification is included in Note 3.

Notes and accounts payable, short-term borrowings, and income taxes payable

The fair values of these financial instruments approximate the carrying amount because of their short maturities.

Long-term debt, including current portion

The fair values of long-term debt, including the current portion, are determined by discounting the cash flows related to the debt at the Group's assumed corporate borrowing rate.

Some of the long-term debt with floating interest rates and related interest rate swaps and currency swaps are accounted for together, and the fair values of such debt are measured by discounting the total cash flows from the payables and hedging swaps at the Group's assumed corporate borrowing rate.

Derivatives

The fair value information for derivatives is included in Note 14.

(b) Financial instruments with fair values that cannot be reliably determined

	Millions of Yen		Thousands of U.S. Dollars
	2020	2019	2020
Investments in equity instruments that do not have a quoted market price in an active market			
Stock of associated companies	¥ 476	¥ 476	\$ 4,365
Other	2,059	2,086	18,890

(4) Maturity analysis for financial assets and securities with contractual maturities

Millions of Yen				
March 31, 2020	Due in one year or less	Due after one year through five years	Due after five years through 10 years	Due after 10 years
Cash and cash equivalents	¥ 94,691	-	-	-
Notes and accounts receivable:				
Trade notes and accounts	101,246	¥ 132	-	-
Held-to-maturity securities				
Debt securities	5,000	-	-	-
Available-for-sale securities				
Investment trusts and other	5,000	-	-	-
Total	¥ 205,937	¥ 132	-	-

Thousands of U.S. Dollars				
March 31, 2020	Due in one year or less	Due after one year through five years	Due after five years through 10 years	Due after 10 years
Cash and cash equivalents	\$ 868,727	-	-	-
Notes and accounts receivable:				
Trade notes and accounts	928,860	\$ 1,213	-	-
Held-to-maturity securities				
Debt securities	45,872	-	-	-
Available-for-sale securities				
Investment trusts and other	45,872	-	-	-
Total	\$ 1,889,331	\$ 1,213	-	-

Please see Note 6 for annual maturities of long-term debt.

14. DERIVATIVES

The Group enters into derivative financial instruments ("derivatives"), including foreign exchange forward contracts, interest rate and currency swaps, and interest rate swap contracts. The foreign exchange forward contracts are entered into in order to hedge foreign exchange risk associated with certain assets and liabilities denominated in foreign currencies. The interest rate and currency swaps are entered into as a means of managing interest rate risk and foreign exchange risk for loans denominated in foreign currencies. The interest rate swap contracts are entered into as a means of managing the interest rate risk for loans from financial institutions. The Group does not hold or issue derivatives for trading or speculative purposes.

Because the counterparties to these derivatives are limited to major international financial institutions, the Group does not anticipate any losses arising from credit risk.

Derivative transactions entered into by the Group have been made in accordance with internal policies that require approval and reporting of all derivative transactions.

Derivative transactions to which hedge accounting is not applied at March 31, 2020 and 2019, were as follows:

Millions of Yen				
March 31, 2020	Contract Amount	Contract Amount Due After One Year	Fair Value	Unrealized Gain/(Loss)
Foreign currency forward contracts:				
Selling U.S.\$	¥ 23,534	-	¥ (23)	¥ (23)
Selling Euro	3,393	-	53	53
Selling Swiss franc	22	-	0	0
Buying U.S.\$	465	-	3	3
Buying Euro	971	-	(7)	(7)
Buying Japanese yen	20	-	2	2
Total	¥ 28,405	-	¥ 28	¥ 28

Millions of Yen				
March 31, 2019	Contract Amount	Contract Amount Due after One Year	Fair Value	Unrealized Gain/(Loss)
Foreign currency forward contracts:				
Selling U.S.\$	¥ 23,102	-	¥ (84)	¥ (84)
Selling Euro	8,327	-	107	107
Buying U.S.\$	139	-	2	2
Buying Euro	26	-	(0)	(0)
Buying Japanese yen	-	-	-	-
Total	¥ 31,594	-	¥ 25	¥ 25

Thousands of U.S. Dollars				
March 31, 2020	Contract Amount	Contract Amount Due after One Year	Fair Value	Unrealized Gain/(Loss)
Foreign currency forward contracts:				
Selling U.S.\$	\$ 215,907	-	\$ (216)	\$ (216)
Selling Euro	31,127	-	491	491
Selling Swiss franc	205	-	5	5
Buying U.S.\$	4,270	-	26	26
Buying Euro	8,906	-	(68)	(68)
Buying Japanese yen	182	-	19	19
Total	\$ 260,597	-	\$ 257	\$ 257

The fair value of derivative transactions is measured at the quoted price obtained from the financial institutions.

Millions of Yen				
	Contract Amount	Contract Amount Due after One Year	Fair Value	Unrealized Gain/(Loss)
March 31, 2020				
Interest rate swaps: (Fixed rate payment, fixed rate receipt)	¥ 5,000	¥ 5,000	¥ (29)	¥ (29)
Total	¥ 5,000	¥ 5,000	¥ (29)	¥ (29)
Millions of Yen				
	Contract Amount	Contract Amount Due after One Year	Fair Value	Unrealized Gain/(Loss)
March 31, 2019				
Interest rate swaps: (Fixed rate payment, fixed rate receipt)	¥ 5,000	¥ 5,000	¥ (32)	¥ (32)
Total	¥ 5,000	¥ 5,000	¥ (32)	¥ (32)
Thousands of U.S. Dollars				
	Contract Amount	Contract Amount Due after One Year	Fair Value	Unrealized Gain/(Loss)
March 31, 2020				
Interest rate swaps: (Fixed rate payment, fixed rate receipt)	\$ 45,872	\$ 45,872	\$ (267)	\$ (267)
Total	\$ 45,872	\$ 45,872	\$ (267)	\$ (267)

The fair value of derivative transactions is measured at the quoted price obtained from the financial institutions.

Derivative transactions to which hedge accounting is applied at March 31, 2020 and 2019, were as follows:

		Millions of Yen		
March 31, 2020	Hedged Item	Contract Amount	Contract Amount Due after One Year	Fair Value
Interest rate swaps: (Fixed rate payment, floating rate receipt)	Long-term debt	¥ 8,704	¥ 8,704	¥(168)
Interest rate swaps: (Fixed rate payment, floating rate receipt)	Long-term debt	25,000	25,000	-
(※)				
Total		¥ 33,704	¥ 33,704	¥(168)

		Millions of Yen		
March 31, 2019	Hedged Item	Contract Amount	Contract Amount Due after One Year	Fair Value
Interest rate swaps: (Fixed rate payment, floating rate receipt)	Long-term debt	¥ 8,803	¥ 8,803	¥(53)
Interest rate swaps: (Fixed rate payment, floating rate receipt)	Long-term debt	25,000	25,000	-
(※)				
Total		¥ 33,803	¥ 33,803	¥(53)

		Thousands of U.S. Dollars		
March 31, 2020	Hedged Item	Contract Amount	Contract Amount Due after One Year	Fair Value
Interest rate swaps: (Fixed rate payment, floating rate receipt)	Long-term debt	\$ 79,857	\$ 79,857	\$(1,539)
Interest rate swaps: (Fixed rate payment, floating rate receipt)	Long-term debt	229,358	229,358	-
(※)				
Total		\$309,215	\$309,215	\$(1,539)

(※) The above interest rate swaps that qualify for hedge accounting and meet specific matching criteria are not premeasured at market value, but the differential paid or received under the swap agreements is recognized and included in interest expense or income. In addition, the fair value of such interest rate swaps is included in that of hedged items (i.e., long-term debt) in Note 13.

		Millions of Yen		
			Contract Amount Due after One Year	Fair Value
March 31, 2020	Hedged Item	Contract Amount		
Currency swaps: (Japanese yen payment, U.S.\$ receipt) (※)	Long-term debt	¥ 6,500	¥ 6,500	-
Currency swaps: (U.S.\$ payment, Thai baht receipt)	Long-term debt	¥ 3,728	¥ 3,728	¥ (297)
Total		¥ 10,228	¥ 10,228	¥ (297)

		Millions of Yen		
			Contract Amount Due after One Year	Fair Value
March 31, 2019	Hedged Item	Contract Amount		
Currency swaps: (Japanese yen payment, U.S.\$ receipt) (※)	Long-term debt	¥ 6,500	¥ 6,500	-
Currency swaps: (U.S.\$ payment, Thai baht receipt)	Long-term debt	¥ 3,795	¥ 3,795	¥ (81)
Total		¥ 10,295	¥ 10,295	¥ (81)

		Thousands of U.S. Dollars		
			Contract Amount Due after One Year	Fair Value
March 31, 2020	Hedged Item	Contract Amount		
Currency swaps: (Japanese yen payment, U.S.\$ receipt) (※)	Long-term debt	\$ 59,633	\$ 59,633	-
Currency swaps: (U.S.\$ payment, Thai baht receipt)	Long-term debt	\$ 34,203	\$ 34,203	\$ (2,725)
Total		\$ 93,836	\$ 93,836	\$ (2,725)

(※) The above currency swaps that qualify for hedge accounting are not remeasured at market value, but the fair value of the swap is included in that of hedged items (i.e., long-term debt) in Note 13.

The fair value of derivative transactions is measured at the quoted price obtained from the financial institution.

The contract or notional amounts of derivatives which are shown in the above table do not represent the amounts exchanged by the parties and do not measure the Group's exposure to credit or market risk.

Forward exchange contracted amounts, which are assigned to associated assets or liabilities and are reflected in the balance sheet at year-end, are not subject to the disclosure of market value information.

15. GUARANTEES OBLIGATION AND OTHER

a. Guarantee obligations

At March 31, 2020, the Group had guarantee obligations as follows:

	Millions of Yen	Thousands of U.S. Dollars
Guarantees for bank borrowings of employees	¥ 2	\$ 17
Guarantee for deposit of subsidiary	2,246	20,607
Guarantees for bank borrowings of a business-related company	127	1,161

b. Contingent liability

The Group is subject to an international investigation on the situation of competition. Since the receiving of a subpoena by a U.S. subsidiary of the Company from the U.S. Department of Justice (DOJ) in 2011, the Company has cooperated in the investigation concerning ceramic substrates for catalytic converters including establishing the Independent Committee in 2012. In September 2015, the Company entered into a Plea Agreement with DOJ, agreeing to pay a fine of US\$65.3 million based on charges that it violated U.S. laws including the antitrust law in connection with some transactions for ceramic substrates for catalytic converters, and paid the total amount in November 2015. The Company has entered into negotiations for compensation for damages with the relevant customers. In addition to some customers requiring monetary compensation, civil lawsuits (class action) have also been filed. In consideration of such progresses, the Group made an estimate of potential losses, and recognized the estimated amount as of the fiscal year ended March 31, 2020, as “provision for loss related to competition law,” however, additional losses may arise with the emergence of new facts. Overall details of the investigation and negotiations are not disclosed because they may put the Group at a disadvantage.

16. OTHER COMPREHENSIVE LOSS

The components of other comprehensive loss for the years ended March 31, 2020 and 2019, were as follows:

	Millions of Yen		Thousands of U.S. Dollars
	2020	2019	2020
Unrealized gain on available-for-sale securities:			
Losses arising during the year	¥ (11,104)	¥ (3,830)	\$ (101,873)
Reclassification adjustments to profit or loss	(3,089)	(667)	(28,335)
Amount before income tax effect	(14,193)	(4,497)	(130,208)
Income tax effect	4,266	1,044	39,133
Total	¥ (9,927)	¥ (3,453)	\$ (91,075)
Deferred loss on derivatives under hedge accounting:			
Losses arising during the year	¥ (332)	¥ (119)	\$ (3,042)
Reclassification adjustments to profit or loss	-	-	-
Amount before income tax effect	(332)	(119)	(3,042)
Income tax effect	18	9	157
Total	¥ (314)	¥ (110)	\$ (2,885)
Foreign currency translation adjustments:			
Adjustments arising during the year	¥ (10,577)	¥ (3,046)	\$ (97,040)
Reclassification adjustments to profit or loss	72	-	664
Total	¥ (10,505)	¥ (3,046)	\$ (96,376)
Share of other comprehensive income in associates—			
Gains arising during the year	¥ 82	¥ 106	\$ 760
Defined retirement benefit plans:			
Losses arising during the year	¥ (897)	¥ (454)	\$ (8,228)
Reclassification adjustments to profit or loss	718	3,315	6,589
Amount before income tax effect	(179)	2,861	(1,639)
Income tax effect	79	(805)	721
Total	¥ (100)	¥ 2,056	\$ (918)
Total other comprehensive loss	¥ (20,764)	¥ (4,447)	\$ (190,494)

17. NET INCOME PER SHARE

Reconciliation of the differences between basic and diluted net income per share ("EPS") for the years ended March 31, 2020 and 2019, were as follows:

	Millions of Yen	Thousands of Shares	Yen	U.S. Dollars
Year Ended March 31, 2020	Net Income Attributable to Owners of the Parent	Weighted-Average Shares	EPS	
Basic EPS—Net income available to common shareholders	¥27,135	320,253	¥ 84.73	\$0.777
Effect of dilutive securities:				
Stock options	-	509		
Diluted EPS—Net income for computation	¥27,135	320,762	¥ 84.60	\$0.776
Year Ended March 31, 2019				
Basic EPS—Net income available to common shareholders	¥35,507	321,773	¥110.35	
Effect of dilutive securities:				
Stock options	-	523		
Diluted EPS—Net income for computation	¥35,507	322,296	¥110.17	

18. SUBSEQUENT EVENTS

a. Appropriation of Retained Earnings

The following appropriation of retained earnings at March 31, 2020, was approved at the Company's shareholders' meeting held on June 29, 2020:

	Millions of Yen	Thousands of U.S. Dollars
Year-end cash dividends, ¥25 (\$0.23) per share	¥7,914	\$72,602

b. Conclusion of Long-term borrowings with banks

On May 28, 2020, June 3, 2020 and August 31, 2020, the Company concluded and executed long-term loan agreement for the maximum amount of ¥30,000 million (\$275,229 thousand) with fixed interest rate with a syndicate of banks led by MUFG Bank, Ltd., as well as with The Aichi Bank, Ltd. and MUFG Bank Ltd. to use for capital investment and operating capital. The maturities of the loan are one year, two years and ten years. The syndicated loan is a loan offered by a group of lenders who work together to provide funds, which is arranged by MUFG Bank, Ltd. The transaction stated above was resolved at the meeting of the Board of Directors held on April 28, 2020.

19. SEGMENT INFORMATION

Under ASBJ Statement No. 17, "Accounting Standard for Segment Information Disclosures" and ASBJ Guidance No. 20, "Guidance on Accounting Standard for Segment Information Disclosures," an entity is required to report financial and descriptive information about its reportable segments. Reportable segments are operating segments or aggregations of operating segments that meet specified criteria. Operating segments are components of an entity about which separate financial information is available and such information is evaluated regularly by the chief operating decision maker in deciding how to allocate resources and in assessing performance. Generally, segment information is required to be reported on the same basis as is used internally for evaluating operating segment performance and deciding how to allocate resources to operating segments.

(1) *Description of Reportable Segments*

The Group's reportable business segments are components of the Group about which separate financial information is available that is evaluated regularly by the Company's management in deciding how to allocate resources and in assessing performance. The Group develops and conducts its operations under four business segments: the Power Business Segment, Ceramics Business Segment, Electronics Business Segment, and Process Technology Business Segment while planning a comprehensive strategy for domestic and overseas markets. Consequently, the Group defines those four business segments as its reportable business segments.

Business segment	Main products
Power	Insulators, hardware for insulator assemblies, current limiting arching horn, bushing shells, fuse cut-outs, APM, line arrester and NAS® (sodium-sulfur) batteries
Ceramics	Automotive ceramics for exhaust gas purification
Electronics	Ceramic components for electronics, beryllium copper products, and molds
Process Technology	Components for semiconductor manufacturing equipment, corrosion-resistant ceramic apparatuses, for chemical industries, gas analyzer, industrial heating systems, refractory products and radioactive waste treatment systems

Effective April 1, 2020, the Power Business was renamed the Energy Infrastructure Business.

(2) *Methods of Measurement for the Amounts of Sales, Profit (Loss), Assets, and Other Items for Each Reportable Segment*

The accounting policies of each reportable segment are consistent with those disclosed in Note 2, "SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES."

(3) Information about Sales, Profit (Loss), Assets, and Other Items

Millions of Yen							
2020							
Reportable segments						Reconciliations	Consolidated
	Power	Ceramics	Electronics	Process Technology	Total		
Sales							
Sales to customers	¥ 43,293	¥ 251,774	¥ 55,426	¥ 91,463	¥ 441,956	-	¥ 441,956
Intersegment sales or transfers	84	12	1	2,834	2,931	¥ (2,931)	-
Total	¥ 43,377	¥ 251,786	¥ 55,427	¥ 94,297	¥ 444,887	¥ (2,931)	¥ 441,956
Segment (loss) profit	¥ (4,916)	¥ 53,485	¥ 25	¥ 6,436	¥ 55,030	¥ (29)	¥55,001
Segment assets	56,637	423,998	68,669	132,908	682,212	¥ 150,874	833,086
Other:							
Depreciation and amortization	1,965	28,004	3,033	6,578	39,580	-	39,580
Impairment losses on assets	204	9,687	2,306	311	12,508	51	12,559
Increase in property, plant, and equipment and intangible assets	1,246	52,266	8,778	22,221	84,511	9,487	93,998

Millions of Yen							
2019							
Reportable segments						Reconciliations	Consolidated
	Power	Ceramics	Electronics	Process Technology	Total		
Sales							
Sales to customers	¥ 49,802	¥ 251,443	¥ 58,839	¥ 103,421	¥ 463,505	-	¥ 463,505
Intersegment sales or transfers	51	8	4	3,087	3,150	¥ (3,150)	-
Total	¥ 49,853	¥ 251,451	¥ 58,843	¥ 106,508	¥ 466,655	¥ (3,150)	¥ 463,505
Segment (loss) profit	¥ (8,498)	¥ 55,920	¥ (315)	¥ 17,630	¥ 64,737	¥ (31)	¥64,706
Segment assets	65,720	417,790	65,559	110,821	659,890	¥ 203,746	863,636
Other:							
Depreciation and amortization	2,376	24,403	4,337	4,613	35,729	-	35,729
Impairment losses on assets	3,227	254	5,780	-	9,261	1,674	10,935
Increase in property, plant, and equipment and intangible assets	1,698	61,960	4,952	23,937	92,547	12,790	105,337

Thousands of U.S. Dollars							
2020							
Reportable segments						Reconciliations	Consolidated
	Power	Ceramics	Electronics	Process Technology	Total		
Sales	\$397,189	\$2,309,849	\$508,491	\$839,113	\$4,054,642	-	\$4,054,642
Sales to customers							
Intersegment sales or transfers	769	111	13	25,993	26,886	\$ (26,886)	-
Total	<u>\$397,958</u>	<u>\$2,309,960</u>	<u>\$508,504</u>	<u>\$865,106</u>	<u>\$4,081,528</u>	<u>\$ (26,886)</u>	<u>\$4,054,642</u>
Segment (loss) profit	\$(45,099)	\$490,686	\$ 230	\$59,046	\$504,863	\$ (269)	\$504,594
Segment assets	519,602	3,889,896	629,995	1,219,336	6,258,829	1,384,159	7,642,988
Other:							
Depreciation and amortization	18,032	256,916	27,822	60,348	363,118	-	363,118
Impairment losses on assets	1,873	88,876	21,152	2,852	114,753	466	115,219
Increase in property, plant, and equipment and intangible assets	11,428	479,502	80,534	203,863	775,327	87,039	862,366

Notes:

1. Reconciliation of segment profit is the adjustment of intersegment transactions.
2. The amount of general corporate assets included in the reconciliation of segment assets was ¥158,885 million (\$1,457,661 thousand) and ¥216,415 million at March 31, 2020 and 2019, respectively, mainly consisting of surplus funds (cash and marketable securities), long-term investment funds (investment securities), and the assets of administrative departments.
3. The increase in property, plant, and equipment and intangible assets in reconciliations relates to the increase in corporate departments.

Information about Geographical Areas

(1) Sales

Millions of Yen								
2020								
Japan	North America		Europe		Asia		Other Areas	Total
	USA	Others	Germany	Others	China	Others		
¥132,151	¥86,017	¥4,098	¥54,491	¥57,103	¥47,881	¥44,692	¥15,523	¥441,956

Millions of Yen								
2019								
Japan	North America		Europe		Asia		Other Areas	Total
	USA	Others	Germany	Others	China	Others		
¥134,141	¥95,473	¥5,985	¥60,080	¥50,642	¥46,661	¥52,281	¥18,242	¥463,505

Thousands of U.S. Dollars								
2020								
Japan	North America		Europe		Asia		Other Areas	Total
	USA	Others	Germany	Others	China	Others		
\$1,212,396	\$789,143	\$37,600	\$499,919	\$523,877	\$439,276	\$410,021	\$142,410	\$4,054,642

Sales are attributed to countries based on the location of the customers.

(2) Property, plant, and equipment

Millions of Yen								
2020								
Japan	North America		Europe		Asia		Other	Total
	USA	Others	Poland	Others	China	Others	Areas	
¥175,756	¥19,133	¥14,993	¥77,241	¥3,144	¥43,954	¥24,648	¥539	¥359,408

Millions of Yen								
2019								
Japan	North America		Europe		Asia		Other	Total
	USA	Others	Poland	Others	China	Others	Areas	
¥149,227	¥17,441	¥17,054	¥78,658	¥2,865	¥28,384	¥31,879	¥554	¥326,062

Thousands of U.S. Dollars								
2020								
Japan	North America		Europe		Asia		Other	Total
	USA	Others	Poland	Others	China	Others	Areas	
\$1,612,427	\$175,533	\$137,550	\$708,630	\$28,849	\$403,252	\$226,133	\$4,945	\$3,297,319

Notes:

Prior to April 1 2019, the China segment was included in the Asia section under property, plant, and equipment. During the year ended March 31, 2020, the materiality of the amount increased and such amount is disclosed separately in the Asia section. The segment information for the year ended 31, 2019 is also disclosed using the new operating segments.

20. RELATED PARTY DISCLOSURES

(1) *Transaction with related parties*

The Company had the following transaction with related parties for the year ended March 31, 2020:

Category	Company name	Address	Capital	Content of business	Ratio of voting rights	Relationship	Summary of transaction	Amount	Account items	Balance at the end of fiscal year
Associated company	METAWATER Co. Ltd	Chiyoda-ku, Tokyo	¥ 11,947 million (\$109,603 thousand)	Design and construction of equipment for water treatment plants, sewage treatment plants, and waste treatment facilities; design, manufacture, and sale of various devices; implementation of repair work; provision of services including operation management	(Held) Direct 25.3%	Sale of product and concurrent appointment of officer	Sales of shares of associates	(Gross—Proceeds from sales) ¥6,804 million (\$62,422 thousand) (Net—Gain on sales of shares) ¥689 million (\$6,321 thousand)	—	—

Note: Transaction terms and policy for determining transactions terms

The transaction stated above was determined through the subscription to the tender offer of treasury shares by METAWATER Co., Ltd.

* * * * *

Independent Auditor's Report



INDEPENDENT AUDITOR'S REPORT

To the Board of Directors of NGK INSULATORS, Ltd.:

Opinion

We have audited the consolidated financial statements of NGK INSULATORS, Ltd. and its consolidated subsidiaries (the "Group"), which comprise the consolidated balance sheet as of March 31, 2020, and the consolidated statement of income, consolidated statement of comprehensive income, consolidated statement of changes in equity and consolidated statement of cash flows for the year then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies, all expressed in Japanese yen.

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

Convenience Translation

Our audit also comprehended the translation of Japanese yen amounts into U.S. dollar amounts and, in our opinion, such translation has been made in accordance with the basis stated in Note 1 to the consolidated financial statements. Such U.S. dollar amounts are presented solely for the convenience of readers outside 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 provisions of the Code of Professional Ethics in Japan, and we have fulfilled our other ethical responsibilities as auditors. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibilities of Management and Audit & Supervisory Board Members and the Audit & 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.

Audit & Supervisory Board members and the Audit & Supervisory Board are responsible for overseeing the Directors' execution of duties relating to the design and operating effectiveness of the controls over 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 an audit in accordance with auditing standards generally accepted in Japan, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

Deloitte Touche Tohmatsu LLC
JP TOWER NAGOYA
1-1-1 Meieki, Nakamura-ku
Nagoya, Aichi 450-8530
Japan
Tel: +81 (52) 565 5511
Fax: +81 (52) 569 1394
www.deloitte.com/jp/en

Member of
Deloitte Touche Tohmatsu Limited

Independent Auditor's Report

- 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. The procedures selected depend on the auditor's judgement. In addition, we 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, when performing risk assessment procedures, an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing 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 overall presentation and disclosures of the consolidated financial statements are in accordance with accounting principles generally accepted in Japan, as well as 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 Audit & Supervisory Board members and the Audit & Supervisory Board regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide Audit & Supervisory Board members and the Audit & 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.

Interest Required to Be Disclosed by the Certified Public Accountants Act of Japan

Our firm and its designated engagement partners 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.

Deloitte Touche Tohmatsu LLC

June 29, 2020
(August 31, 2020 as to Note 18)

Subsidiaries and Affiliated Companies

As of March 31, 2020

JAPAN

	Company's Direct and Indirect Ownership (%)	Principal Products and Services
■ENERGY SUPPORT CORPORATION	100	Power distribution equipment
■AKECHI INSULATORS, LTD.	100	Electrical insulators
■IKEBUKURO HORO KOGYO CO., LTD.	100	Glass-lined reactors & tanks for chemical processing industries
■NGK CHEM-TECH, LTD.	100	Chemical equipment and maintenance
■NGK FILTECH, LTD.	100	Membrane separation systems
■NGK ADREC CO., LTD.	100	Refractories/kiln furniture
■NGK KILNTECH CORPORATION	100	Thermal process engineering & products
■NGK OKHOTSK, LTD.	100	Jig for ceramics production
■NGK METEX CORPORATION	100	Beryllium copper wrought products
■NGK FINE MOLDS, LTD.	100	Molds
■NGK CERAMIC DEVICE CO., LTD.	100	Ceramic electronic components
■SOSHIN ELECTRIC CO., LTD.	40.6	Electronic components and devices
■NGK ELECTRONICS DEVICES, INC.	100	Ceramic packages for semiconductors and ceramic electronic components
●METAWATER CO., LTD.	25.3	Environmental protection systems
●NGK LIFE CO., LTD.	100	Insurance agency service and golf cours management

Other Group Companies

■KANSAI ENERGYS CORPORATION	■KYUSYU ENERGYS CORPORATION	■HOKURIKU ENERGYS CORPORATION	■ENERGYS SANGYO CORPORATION
■SOSHIN DEVICE CO., LTD.	■RISSHIN ELECTRONICS CO., LTD.	■SOSHIN POWERTECH CO., LTD.	NGK SPORTS PLANNING CO., LTD.
NGK YU-SERVICE CO., LTD.	NGK TECHNICA, LTD.		NGK LOGISTICS, LTD.

NORTH AMERICA

	Company's Direct and Indirect Ownership (%)	Principal Products and Services
■NGK NORTH AMERICA, INC.	100	Holding company
■NGK-LOCKE, INC.	100	Electrical insulators
■NGK-LOCKE POLYMER INSULATORS, INC.	100	Electrical polymer insulators
■NGK INSULATORS OF CANADA, LTD.	100	Electrical insulators and ceramic products
■NGK CERAMICS USA, INC.	100	Automotive ceramics
■NGK AUTOMOTIVE CERAMICS USA, INC.	100	Automotive ceramics
■NGK CERAMICS MEXICO, S. DE R.L. DE C.V.	95	Automotive ceramics
■NGK METALS CORPORATION	100	Beryllium copper products
■NGK ELECTRONICS USA, INC.	100	Ceramics for semiconductor manufacturing equipment
■FM INDUSTRIES, INC.	100	Modules for semiconductor production equipment

EUROPE AND AFRICA

	Company's Direct and Indirect Ownership (%)	Principal Products and Services
■NGK CERAMICS EUROPE S.A.	100	Automotive ceramics
■NGK EUROPE GMBH	100	Ceramic products
■NGK CERAMICS POLSKA SP. Z O.O.	95	Automotive ceramics
■NGK CERAMICS SOUTH AFRICA (PTY) LTD.	100	Automotive ceramics
■NGK BERYLCO FRANCE	100	Beryllium copper products
■NGK BERYLCO U.K. LTD.	100	Beryllium copper products
■NGK DEUTSCHE BERYLCO GMBH	100	Beryllium copper products

ASIA PACIFIC

	Company's Direct and Indirect Ownership (%)	Principal Products and Services
■NGK STANGER PTY. LTD.	100	Power distribution equipment
■NGK INSULATORS (CHINA) INVESTMENT CO., LTD.	100	Electrical insulators and beryllium copper products
■P.T. NGK CERAMICS INDONESIA	97.8	Automotive ceramics
■SIAM NGK TECHNOCERA CO., LTD.	100	Refractories/kiln furniture
■NGK CERAMICS (THAILAND) CO., LTD.	95	Automotive ceramics
■NGK CERAMICS SUZHOU CO., LTD.	100	Automotive ceramics
■NGK TECHNOCERA SUZHOU CO., LTD.	100	Thermal process engineering & products, refractories/kiln furniture

Other Group Companies

■ENERGY ELECTRIC (SHANGHAI) CORPORATION	■SOSHIN ELECTRONICS (HK) LIMITED	NGK AUTOMOTIVE CERAMICS KOREA CO., LTD.
■NGK MATERIAL USA, INC.	■SOSHIN ELECTRONICS (SZ) LIMITED	NGK TECHNOLOGIES INDIA PVT. LTD.
■NGK AUTOMOTIVE CERAMICS MEXICO, S. DE R.L. DE C.V.	■SOSHIN ELECTRONICS (M) SDN. BHD	NGK ITALY S.R.L.
■NGK ELECTRONICS DEVICES (M) SDN. BHD.	■NGK INSULATORS TANGSHAN CO., LTD..	TAIWAN SOSHIN ELECTRIC CO., LTD.
■NGK GLOBETRONICS TECHNOLOGY SDN. BHD.	■LOCKE INSULATORS, INC.	SOSHIN ELECTRONICS EUROPE GMBH
■SOSHIN ELECTRONICS OF AMERICA INC		NGK ELECTRONICS DEVICES ASIA SDN. BHD.
		NGK ENERGYS MYANMAR CO., LTD.

- Consolidated companies

● Affiliated companies accounted for by the equity method

