

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549**

FORM 10-Q

☒ QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended **September 30, 2020**

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ To _____

Commission file number: 1-3247

CORNING INCORPORATED

(Exact name of registrant as specified in its charter)

New York

(State or other jurisdiction of incorporation or organization)

16-0393470

(I.R.S. Employer Identification No.)

One Riverfront Plaza, Corning, New York

(Address of principal executive offices)

14831

(Zip Code)

607-974-9000

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock	GLW	New York Stock Exchange (NYSE)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days.

Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large Accelerated Filer	☒	Accelerated Filer	☐
Non-Accelerated Filer	☐	Smaller Reporting Company	☐
		Emerging Growth Company	☐

If an emerging growth company, indicated by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards pursuant to Section 13(a) of the Exchange Act.

Yes ☐ No ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes ☐ No ☒

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date.

Class	Outstanding as of October 22, 2020
Corning's Common Stock, \$0.50 par value per share	764,010,029 shares

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CORNING INCORPORATED AND SUBSIDIARY COMPANIES
CONSOLIDATED STATEMENTS OF INCOME
(Unaudited; in millions, except per share amounts)

	Three months ended September 30,		Nine months ended September 30,	
	2020	2019	2020	2019
Net sales	\$ 3,001	\$ 2,934	\$ 7,953	\$ 8,686
Cost of sales	2,000	1,917	5,635	5,505
Gross margin	1,001	1,017	2,318	3,181
Operating expenses:				
Selling, general and administrative expenses	480	369	1,276	1,184
Research, development and engineering expenses	231	255	922	753
Amortization of purchased intangibles	33	28	87	85
Operating income	257	365	33	1,159
Equity in (losses) earnings of affiliated companies (Note 3)	(76)	23	17	81
Interest income	3	4	12	16
Interest expense	(70)	(55)	(201)	(161)
Translated earnings contract (loss) gain, net (Note 14)	(100)	86	5	163
Transaction-related gain, net (Note 4)	498		498	
Other expense, net	(62)	(15)	(71)	(59)
Income before income taxes	450	408	293	1,199
Provision for income taxes (Note 8)	(23)	(71)	(33)	(271)
Net income attributable to Corning Incorporated	<u>\$ 427</u>	<u>\$ 337</u>	<u>\$ 260</u>	<u>\$ 928</u>
Earnings per common share attributable to				
Corning Incorporated:				
Basic (Note 10)	<u>\$ 0.53</u>	<u>\$ 0.40</u>	<u>\$ 0.25</u>	<u>\$ 1.10</u>
Diluted (Note 10)	<u>\$ 0.48</u>	<u>\$ 0.38</u>	<u>\$ 0.24</u>	<u>\$ 1.03</u>

The accompanying notes are an integral part of these consolidated financial statements.

CORNING INCORPORATED AND SUBSIDIARY COMPANIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Unaudited; in millions)

	Three months ended September 30,		Nine months ended September 30,	
	2020	2019	2020	2019
Net income attributable to Corning Incorporated	\$ 427	\$ 337	\$ 260	\$ 928
Foreign currency translation adjustments and other	283	(238)	76	(310)
Net unrealized (losses) gains on investments		(1)		1
Unamortized gains (losses) and prior service credits (costs)				
for postretirement benefit plans	4	4	(8)	(48)
Net unrealized gains (losses) on designated hedges	11	(22)	(31)	(20)
Other comprehensive income (loss), net of tax (Note 16)	298	(257)	37	(377)
Comprehensive income attributable to				
Corning Incorporated	<u>\$ 725</u>	<u>\$ 80</u>	<u>\$ 297</u>	<u>\$ 551</u>

The accompanying notes are an integral part of these consolidated financial statements.

CORNING INCORPORATED AND SUBSIDIARY COMPANIES
CONSOLIDATED BALANCE SHEETS
(Unaudited; in millions, except share and per share amounts)

	September 30, 2020	December 31, 2019
Assets		
Current assets:		
Cash and cash equivalents	\$ 2,514	\$ 2,434
Trade accounts receivable, net of doubtful accounts and allowances - \$43 and \$41	2,099	1,836
Inventories, net of inventory reserves - \$252 and \$201 (Note 11)	2,581	2,320
Other current assets	864	873
Total current assets	8,058	7,463
Investments	354	334
Property, plant and equipment, net of accumulated depreciation - \$13,874 and \$12,995	15,449	15,337
Goodwill, net (Note 9)	2,427	1,935
Other intangible assets, net (Note 9)	1,332	1,185
Deferred income taxes (Note 8)	1,173	1,157
Other assets	1,474	1,487
Total Assets	\$ 30,267	\$ 28,898
Liabilities and Equity		
Current liabilities:		
Current portion of long-term debt and short-term borrowings	\$ 256	\$ 11
Accounts payable	1,176	1,587
Other accrued liabilities (Note 6 and Note 13)	2,417	1,923
Total current liabilities	3,849	3,521
Long-term debt (Note 12)	7,822	7,729
Postretirement benefits other than pensions	667	671
Other liabilities (Note 6 and Note 13)	5,072	3,980
Total liabilities	17,410	15,901
Commitments, contingencies and guarantees (Note 6)		
Shareholders' equity (Note 16):		
Convertible preferred stock, Series A – Par value \$100 per share;		
Shares authorized 3,100; Shares issued: 2,300	2,300	2,300
Common stock – Par value \$0.50 per share; Shares authorized 3.8 billion;		
Shares issued: 1,722 million and 1,718 million	861	859
Additional paid-in capital – common stock	14,494	14,323
Retained earnings	16,065	16,408
Treasury stock, at cost; Shares held: 961 million and 956 million	(19,926)	(19,812)
Accumulated other comprehensive loss	(1,134)	(1,171)
Total Corning Incorporated shareholders' equity	12,660	12,907
Noncontrolling interests	197	90
Total equity	12,857	12,997
Total Liabilities and Equity	\$ 30,267	\$ 28,898

The accompanying notes are an integral part of these consolidated financial statements.

CORNING INCORPORATED AND SUBSIDIARY COMPANIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited; in millions)

	Nine months ended September 30,	
	2020	2019
Cash Flows from Operating Activities:		
Net income	\$ 260	\$ 928
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation	1,041	1,026
Amortization of purchased intangibles	87	85
Loss on disposal of assets	107	45
Severance charges	141	25
Severance payments	(126)	(7)
Share-based compensation expense	127	43
Equity in earnings of affiliated companies	(17)	(81)
Deferred tax benefit	(96)	(85)
Retirement plan contributions and benefit payments (in excess of) less than expense	(57)	42
Customer deposits and incentives	184	2
Translated earnings contract gain	(5)	(163)
Unrealized translation (gains) losses on transactions	(54)	87
Tax assessment refunds	101	
Asset impairment	217	
Transaction-related gain, net	(498)	
Changes in certain working capital items:		
Trade accounts receivable	(281)	(169)
Inventories	240	(338)
Other current assets	(19)	(220)
Accounts payable and other current liabilities	(139)	(88)
Other, net	193	(119)
Net cash provided by operating activities	1,406	1,013
Cash Flows from Investing Activities:		
Capital expenditures	(986)	(1,602)
Proceeds from sale or disposal of assets	27	
Sale of equipment to related party		62
Realized gains on translated earnings contracts	10	39
Other, net	17	(33)
Net cash used in investing activities	(932)	(1,534)
Cash Flows from Financing Activities:		
Proceeds from issuance of long-term debt, net	212	349
Proceeds from exercise of stock options	49	43
Repurchases of common stock for treasury	(105)	(708)
Dividends paid	(587)	(554)
Other, net	16	37
Net cash used in financing activities	(415)	(833)
Effect of exchange rates on cash	21	(30)
Net increase (decrease) in cash and cash equivalents	80	(1,384)
Cash and cash equivalents at beginning of period	2,434	2,355
Cash and cash equivalents at end of period	\$ 2,514	\$ 971

The accompanying notes are an integral part of these consolidated financial statements.

CORNING INCORPORATED AND SUBSIDIARY COMPANIES
CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
(Unaudited; in millions)

	Accumulated									
	Convertible		Additional			other				
(In millions)	preferred	Common	paid-in capital	Retained earnings	Treasury	comprehensive	Total Corning	Non-controlling		Total
	stock	stock	common		stock	loss	Incorporated	interests		
							shareholders' equity			
Balance, December 31, 2019	\$ 2,300	\$ 859	\$ 14,323	\$ 16,408	\$ (19,812)	\$ (1,171)	\$ 12,907	\$ 90	\$	12,997
Net loss				(96)			(96)			(96)
Other comprehensive loss						(326)	(326)	(1)		(327)
Purchase of common stock										
for treasury					(105)		(105)			(105)
Shares issued to benefit plans										
and for option exercises			17				17			17
Common dividends										
(\$0.22 per share)				(168)			(168)			(168)
Preferred dividends										
(\$10,625 per share)				(24)			(24)			(24)
Other, net				(6)	(1)		(7)			(7)
Balance, March 31, 2020	\$ 2,300	\$ 859	\$ 14,340	\$ 16,114	\$ (19,918)	\$ (1,497)	\$ 12,198	\$ 89	\$	12,287
Net (loss) income				(71)			(71)	6		(65)
Other comprehensive income						65	65			65
Shares issued to benefit plans										
and for option exercises		1	58				59			59
Common dividends										
(\$0.22 per share)				(171)			(171)			(171)
Preferred dividends										
(\$10,625 per share)				(25)			(25)			(25)
Other, net					(6)		(6)	(11)		(17)
Balance, June 30, 2020	\$ 2,300	\$ 860	\$ 14,398	\$ 15,847	\$ (19,924)	\$ (1,432)	\$ 12,049	\$ 84	\$	12,133
Net income				427			427	5		432
Other comprehensive income						298	298	1		299
Shares issued to benefit plans										
and for option exercises		1	96				97			97
Common dividends										
(\$0.22 per share)				(171)			(171)			(171)
Preferred dividends										
(\$10,625 per share)				(24)			(24)			(24)
Other, net (1)				(14)	(2)		(16)	107		91
Balance, September 30, 2020	\$ 2,300	\$ 861	\$ 14,494	\$ 16,065	\$ (19,926)	\$ (1,134)	\$ 12,660	\$ 197	\$	12,857

(1) Non-controlling interests included \$102 million related to the consolidation of Hemlock Semiconductor Group ("HSG"). Refer to Note 4 (HSG Transactions) to the consolidated financial statements for more information.

CORNING INCORPORATED AND SUBSIDIARY COMPANIES
CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
(Unaudited; in millions)

	Convertible	Common	Additional		Treasury	Accumulated other	Total Corning	Non-controlling	
(In millions)	preferred stock	stock	paid-in capital common	Retained earnings	stock	comprehensive loss	Incorporated shareholders' equity	interests	Total
Balance, December 31, 2018	\$ 2,300	\$ 857	\$ 14,212	\$ 16,303	\$ (18,870)	\$ (1,010)	\$ 13,792	\$ 94	\$ 13,886
Net income				499			499	6	505
Other comprehensive loss						(156)	(156)		(156)
Purchase of common stock									
for treasury					(244)		(244)		(244)
Shares issued to benefit plans									
and for option exercises			31				31		31
Common dividends									
(\$0.20 per share)				(158)			(158)		(158)
Preferred dividends									
(\$10,625 per share)				(24)			(24)		(24)
Other, net (2)				(131)	(2)		(133)	(1)	(134)
Balance, March 31, 2019	\$ 2,300	\$ 857	\$ 14,243	\$ 16,489	\$ (19,116)	\$ (1,166)	\$ 13,607	\$ 99	\$ 13,706
Net income				92			92	13	105
Other comprehensive income						36	36		36
Purchase of common stock									
for treasury					(151)		(151)		(151)
Shares issued to benefit plans									
and for option exercises		1	34				35		35
Common dividends									
(\$0.20 per share)				(157)			(157)		(157)
Preferred dividends									
(\$10,625 per share)				(25)			(25)		(25)
Other, net					(12)		(12)	(16)	(28)
Balance, June 30, 2019	\$ 2,300	\$ 858	\$ 14,277	\$ 16,399	\$ (19,279)	\$ (1,130)	\$ 13,425	\$ 96	\$ 13,521
Net income				337			337	4	341
Other comprehensive loss						(257)	(257)		(257)
Purchase of common stock									
for treasury					(308)		(308)		(308)
Shares issued to benefit plans									
and for option exercises		1	18				19		19
Common dividends									
(\$0.20 per share)				(156)			(156)		(156)
Preferred dividends									
(\$10,625 per share)				(24)			(24)		(24)
Other, net				(1)	(1)		(2)		(2)
Balance, September 30, 2019	\$ 2,300	\$ 859	\$ 14,295	\$ 16,555	\$ (19,588)	\$ (1,387)	\$ 13,034	\$ 100	\$ 13,134

(2) Adjustments to beginning retained earnings include the effect of the accounting change were recorded upon adoption of the new standard for reclassification of stranded tax effects in accumulated other comprehensive income in the amount of \$53 million, and a reduction of \$186 million, net of tax, effect from an equity affiliate's adoption of the new revenue standard.

The accompanying notes are an integral part of these consolidated financial statements.

CORNING INCORPORATED AND SUBSIDIARY COMPANIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

1. Significant Accounting Policies

Basis of Presentation

In these notes, the terms “Corning,” “Company,” “we,” “us,” or “our” mean Corning Incorporated and its subsidiary companies.

The accompanying unaudited consolidated financial statements have been prepared pursuant to the rules and regulations of the Securities and Exchange Commission (“SEC”) and in accordance with U.S. Generally Accepted Accounting Principles (“GAAP”) for interim financial information. Certain information and note disclosures normally included in financial statements prepared in accordance with GAAP have been omitted or condensed. These interim consolidated financial statements should be read in conjunction with Corning’s consolidated financial statements and notes thereto included in its Annual Report on Form 10-K for the year ended December 31, 2019 (“2019 Form 10-K”).

The unaudited consolidated financial statements reflect all adjustments which, in the opinion of management, are necessary for a fair statement of the results of operations, financial position and cash flows for the interim periods presented. All such adjustments are of a normal recurring nature. The results for interim periods are not necessarily indicative of results which may be expected for any other interim period or for the full year.

The equity method of accounting is used for investments in affiliated companies that are not controlled by Corning and in which the Company’s interest is generally between 20% and 50% and we have significant influence over the entity. On September 9, 2020, Corning obtained a 100% controlling interest in Hemlock Semiconductor LLC (“HS LLC”) and an 80.5% controlling interest in Hemlock Semiconductor Operations LLC (“HSO LLC”), which are affiliated entities within the Hemlock Semiconductor Group (“HSG”). As of that date, Corning began consolidating HSG. Refer to Note 3 (Investments) and Note 4 (HSG Transactions) to the consolidated financial statements for more information.

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues, expenses and the disclosure of contingent assets and liabilities. Actual results could differ from those estimates. The novel coronavirus (“COVID-19”) pandemic and the resulting adverse impacts to global economic conditions, as well as to Corning’s operations, may impact future estimates including, but not limited to, inventory valuations, fair value measurements, goodwill and long-lived asset impairments, the effectiveness of the Company’s hedging instruments, deferred tax valuation allowances, actuarial losses on retirement benefit plans and discount rate assumptions.

Certain prior year amounts have been reclassified to conform to the current-year presentation. These reclassifications had no impact on the results of operations, financial position, or changes in shareholders’ equity.

New Accounting Standards

On January 1, 2020, Corning adopted Accounting Standards Update (“ASU”) No. 2016-13 ASC (Topic 326), Financial Instruments - Credit Losses. The ASU introduces a new accounting model, the Current Expected Credit Losses model (CECL), which requires earlier recognition of credit losses and additional disclosures related to credit risk. The CECL model utilizes a lifetime expected credit loss measurement objective for the recognition of credit losses at the time the financial asset is originated or acquired. The Company adopted the CECL model to recognize credit losses of financial assets using a modified retrospective method of accounting as of January 1, 2020. The impact of adopting the new standard to the financial statements was a nominal reduction to beginning retained earnings.

Other Accounting Standards

No other accounting standards newly issued or adopted as of September 30, 2020, had a material impact on Corning’s financial statements or disclosures.

2. Restructuring, Impairment and Other Charges and Credits

In the first nine months of 2020, and in response to uncertain global economic conditions, Corning undertook actions to transform the Company’s cost structure and improve operational efficiency. These actions included a corporate-wide workforce reduction program, disposals of certain assets and accelerated depreciation associated with the capacity realignment of certain manufacturing facilities as well as other exit charges and credits.

During the three and nine months ended September 30, 2020 and 2019, the following restructuring, impairment and other charges and credits were recorded (in millions):

	Three months ended September 30,		Nine months ended September 30,	
	2020	2019	2020	2019
Severance	\$ 6	\$ 18	\$ 141	\$ 25
Asset impairment	22		217	
Capacity realignment	96	107	245	168
Other charges and credits	47	23	130	29
Total restructuring, impairment and other charges and credits	\$ 171	\$ 148	\$ 733	\$ 222

Severance

In the second quarter of 2020, the Company implemented a corporate-wide workforce reduction program. Severance charges were primarily incurred to facilitate realignment of capacity in the Asia regions for the Display Technologies segment, optimize the Optical Communications segment and contain corporate costs. For the three months and nine months ended September 30, 2020, severance charges were \$6 million and \$141 million, respectively. As of September 30, 2020, and December 31, 2019, the unpaid severance liabilities of \$60 million and \$44 million are expected to be substantially completed within the next twelve months.

Asset Impairment

Corning incurred a long-lived asset impairment loss for an asset group related to the reassessment and reprioritization of research and development programs within “All Other”. Given the current economic environment and market opportunities, Corning has rescoped and significantly reduced its investment in these research and development programs. Corning performed the impairment analysis for the long-lived asset group using discounted cash flow projections and recorded a pre-tax asset impairment loss of \$195 million in the second quarter of 2020. During the third quarter of 2020, the Company further reduced investments in these research and development programs and reassessed the business plans. As a result, an additional impairment loss of \$22 million was recorded, inclusive of an insignificant amount of goodwill, to reduce the book value to the fair value of the asset group, which resulted in a total pre-tax asset impairment loss of \$217 million for the nine months ended September 30, 2020.

Capacity Realignment

Capacity realignment for the three and nine months ended September 30, 2020, primarily includes accelerated depreciation and asset disposals associated with the exit of certain facilities and other exit activities in the Display Technologies and Specialty Materials business segments. Capacity realignment for the three and nine months ended September 30, 2019, is primarily comprised of accelerated depreciation associated with the exit of certain facilities in the Display Technologies segment.

The following tables present the impact and respective location of total restructuring, impairment, and other charges and credits on the consolidated statements of income (in millions):

	Three months ended September 30, 2020					Three months ended September 30, 2019				
	Gross margin (1)	Selling, general and admin. expenses	Research, development and engineering expenses	Other	Total	Gross margin (1)	Selling, general and admin. expenses	Research, development and engineering expenses	Other	Total
Severance	\$ 3	\$ 3			\$ 6	\$ 9	\$ 6	\$ 3		\$ 18
Asset impairment		6	16		22					
Capacity realignment	95		1		96	94		13		107
Other charges and credits	26	12	1	\$ 8	47	14	5		\$ 4	23
Total restructuring, impairment and other charges and credits	\$ 124	\$ 21	\$ 18	\$ 8	\$ 171	\$ 117	\$ 11	\$ 16	\$ 4	\$ 148

(1) Activity reflected in cost of sales.

	Nine months ended September 30, 2020					Nine months ended September 30, 2019				
	Gross margin (1)	Selling, general and admin. expenses	Research, development and engineering expenses	Other	Total	Gross margin (1)	Selling, general and admin. expenses	Research, development and engineering expenses	Other	Total
Severance	\$ 79	\$ 34	\$ 28		\$ 141	\$ 10	\$ 12	\$ 3		\$ 25
Asset impairment		6	211		217					
Capacity realignment	243		2		245	155		13		168
Other charges and credits	61	51	2	\$ 16	130	47	5		\$ (23)	29
Total restructuring, impairment and other charges and credits	\$ 383	\$ 91	\$ 243	\$ 16	\$ 733	\$ 212	\$ 17	\$ 16	\$ (23)	\$ 222

(1) Activity reflected in cost of sales.

3. Investments

Investments are comprised of the following (in millions):

	Ownership interest	September 30, 2020	December 31, 2019
Affiliated companies accounted for by the equity method (1)	20% to 50%	\$ 285	\$ 291
Other investments		69	43
Subtotal investment assets		\$ 354	\$ 334
Affiliated companies accounted for by the equity method			
HSG (1)(2)	50%	\$ —	\$ 270
Subtotal investment liabilities		\$ —	\$ 270

(1) Amounts reflect Corning's direct ownership interest in the affiliated companies at September 30, 2020 and December 31, 2019.

(2) At December 31, 2019, the negative carrying value of Corning's investment in HSG was \$270 million and recorded in other liabilities.

Hemlock Semiconductor Group (“HSG”)

In 2016, Corning realigned its ownership interest in Dow Corning Corporation, exchanging its 50% interest in the joint venture between Corning and Dow Chemical Company for a newly formed company that holds a 49.9% interest in HS LLC and a 40.25% interest in HSO LLC which were recorded as equity method investments of Corning and were affiliated companies of HSG. DuPont de Nemours, Inc. (“DuPont”) subsequently undertook Dow Chemical Company’s ownership interest in HSG. HSG manufactures polysilicon products for the semiconductor and solar industries, and it is one of the world’s leading providers of ultra-pure polycrystalline silicon to the semiconductor industry.

On September 9, 2020, HSG entered into a series of agreements with DuPont.

HSG acquired DuPont’s Trichlorosilane (“TCS”) manufacturing assets, which was determined to be a business and recorded as a business combination. The fair value of the purchase price was \$255 million. In conjunction with this acquisition, HSG settled its pre-existing contract dispute related to a long-term supply agreement with DuPont (“TCS Settlement”) for a contractual amount of \$175 million, which was determined to have a fair value of \$200 million. See Note 4 (HSG Transactions) to the consolidated financial statements for more information.

Immediately following these transactions, HSG redeemed DuPont’s entire ownership interest in HSG with a fair value of \$250 million (“Redemption”). Upon completion of the Redemption, Corning obtained a controlling interest of 100% in Hemlock Semiconductor LLC and 80.5% in Hemlock Semiconductor Operations LLC and began consolidating HSG as of September 9, 2020.

HSG’s net income for the period ended September 8, 2020, included a pre-tax gain recorded in the second quarter of 2020, related to the settlement of a long-term supply agreement of approximately \$165 million, partially offset by an inventory provision of approximately \$44 million associated with the settlement of the agreement. Prior to the Redemption, in the third quarter of 2020, HSG recorded a pre-tax loss of \$200 million resulting from the TCS Settlement as disclosed above. Corning’s share of the pre-tax loss was \$81 million and recorded in equity in (losses) earnings of affiliated companies in the consolidated statements of income. Accordingly, Corning’s share of the net impact was an equity loss of \$19 million.

HSG’s results of operations prior to the Redemption were as follows (in millions):

	Three months ended September 30,		Nine months ended September 30,	
	2020	2019	2020	2019
Statements of Operations (1):				
Net sales	\$ 78	\$ 200	\$ 423	\$ 566
Gross profit	\$ 21	\$ 61	\$ 87	\$ 205
Net (loss) income	\$ (192)	\$ 46	\$ 11	\$ 185
Net (loss) income attributable to HSG	\$ (154)	\$ 42	\$ 44	\$ 165
Corning's equity in (losses) earnings of affiliated companies	\$ (77)	\$ 21	\$ 22	\$ 81
Related party transactions:				
Intercompany sales within HSG (included in net sales)	\$ 12	\$ 31	\$ 55	\$ 85

(1) The three and nine months ended September 30, 2020, only include HSG’s results of operations through September 8, 2020. Immediately following the Redemption, Corning began consolidating HSG on September 9, 2020.

4. HSG Transactions

In 2016, Corning realigned its ownership interest in Dow Corning Corporation, exchanging its 50% interest in the joint venture between Corning and Dow Chemical Company for a newly formed company that holds interests in HS LLC and HSO LLC, which were recorded as equity method investments of Corning and were affiliated companies of HSG.

On September 9, 2020, HSG acquired DuPont’s TCS manufacturing assets, which was determined to be a business and recorded as a business combination. The fair value of the purchase price was \$255 million. In conjunction with this acquisition, HSG settled a dispute with DuPont for a contractual amount of \$175 million, related to a pre-existing long-term supply agreement with a fair value of \$200 million. HSG will pay for the TCS Settlement over three years with equal annual payments of approximately \$58 million, which was a non-cash financing activity in the current reporting period.

The TCS Settlement was recorded as a pre-tax loss of \$200 million, which was its fair value estimate based on the income approach. Corning's share of the TCS Settlement was a pre-tax loss of \$81 million, which was recorded in equity in (losses) earnings of affiliated companies in Corning's consolidated statements of income for the three and nine months ended September 30, 2020.

Subsequent to the closing of the TCS purchase and execution of the TCS Settlement, HSG redeemed DuPont's entire ownership interest in HSG for \$250 million. The Redemption was funded with HSG's existing cash on-hand of \$75 million and its newly obtained third-party debt of \$175 million, maturing on September 8, 2021. The third-party debt was a non-cash financing activity in the current reporting period.

Upon completion of the Redemption, Corning obtained controlling interests of 100% in HS LLC and 80.5% in HSO LLC. Corning accounted for the Redemption under the acquisition method of accounting in accordance with business combinations without the transfer of net cash consideration. The Redemption price of \$250 million approximated the fair value of Corning's equity interest in HSG immediately preceding the Redemption. The fair value of Corning's equity interest in HSG was estimated by applying the income approach, which was based on significant inputs such as revenue and profitability as well as key assumptions including a discount rate of 16.5% and terminal growth rate of zero. As no net-cash consideration was transferred, the fair value of Corning's previously held equity interest in HSG was used to measure the goodwill of the Redemption.

Corning had a pre-tax gain of \$498 million on its previously held equity investment in HSG following the Redemption. The gain was calculated based on the fair value of the investment immediately preceding the Redemption and included in the transaction-related gain, net in Corning's consolidated statements of income for the three and nine months ended September 30, 2020.

The net gain on previously owned equity was calculated as follows (in millions):

Fair value of previously held equity investment	\$	250
Equity investment liability balance as of acquisition date		(248)
Corning's gain on previously held equity investment	\$	498

The following table summarizes the amounts of recorded assets acquired and liabilities assumed as of September 9, 2020, which includes the TCS assets and liabilities acquired by HSG immediately prior to the Redemption and the consolidation by Corning.

Recognized amounts of identified assets and liabilities recorded at fair value (in millions):

Inventory	\$	503
Property, plant and equipment		657
Intangible assets		285
Other current and non-current assets (1)		166
Short-term borrowings		(178)
Trade payables and other accrued liabilities		(322)
Other liabilities		(1,254)
Total identified net liabilities		(143)
Non-controlling interests (2)		(102)
Total fair value of Corning's previously held equity investment (2)		(250)
Goodwill (3)	\$	495

- (1) The other current and non-current assets included a contingent consideration asset of \$20 million at fair value for a cost adjustment contract related to the TCS Transaction. Refer to Note 3 (Investments), Note 4 (HSG Transactions) and Note 15 (Fair Value Measurements) to the consolidated financial statements for additional information.
- (2) The purchase price being used to measure the goodwill of the Redemption is \$352 million, including the fair value of Corning's previously held equity interest and non-controlling interest, in the amount of \$250 million and \$102 million, respectively.
- (3) The goodwill recognized is not deductible for U.S. income tax purposes. The goodwill was allocated to "All Other" within segment reporting as disclosed in Note 18 (Reportable Segments) to the consolidated financial statements for more information.

Upon completion of the Redemption and resulting consolidation, Corning recorded a customer deposit liability of \$264 million at the fair value of refundable payments that HSG received from a customer under a long-term supply agreement. The discount rates being used to calculate the present value of the customer deposit range from 2.54% to 3.23%. The deposits will be repaid from 2029 to 2034 provided that all purchase obligations of this customer under the supply agreement have been satisfied.

In addition, Corning recorded deferred revenues of \$1,070 million at fair value related to the performance obligations of non-refundable consideration previously received by HSG from its customers under long term supply agreements. The fair values of deferred revenue were estimated by applying a bottom-up cost buildup method of the cost approach based on significant inputs such as the cost to fulfill the obligations as well as key assumptions including a normal profit margin as of September 9, 2020.

The goodwill is primarily related to other intangibles and synergies of the acquired business which do not qualify for separate recognition. Intangible assets consist primarily of \$215 million of developed technologies and know-how, and \$70 million of other intangibles that are amortized over the weighted average useful life of approximately 20 and 15 years, respectively. Acquisition-related costs of \$11 million for the nine-months ended September 30, 2020, included costs for legal and other professional services and were included in selling, general and administrative expense in the consolidated statements of income.

The fair value of the non-controlling interest in HSG was estimated to be \$102 million by applying the income approach, which used the same key assumptions as the estimate of fair value for Corning's equity interest in HSG.

The amounts of revenue and net income of HSG since September 9, 2020, have been consolidated in "All Other" and are not material to Corning's consolidated statements of income for the three and nine months ended September 30, 2020. Supplemental pro forma financial information was not provided because the purchased business is not material to Corning's consolidated financial statements.

5. Revenue

Revenue Disaggregation Table

The following table shows revenues by major product categories, similar to the Company's reportable segment disclosure. Within each product category, contract terms, conditions and economic factors affecting the nature, amount, timing and uncertainty of revenue recognition and cash flows are substantially similar. The commercial markets and selling channels are also similar. Except for an inconsequential amount of revenue for Telecommunications products, product category revenues are recognized at point in time when control transfers to the customer.

Revenues by product category are as follows (in millions):

	Three months ended September 30,		Nine months ended September 30,	
	2020	2019	2020	2019
Display products	\$ 834	\$ 780	\$ 2,211	\$ 2,395
Telecommunication products	909	1,008	2,587	3,162
Specialty glass products	570	463	1,339	1,141
Environmental substrate and filter products	369	380	891	1,084
Life science products	220	250	707	744
All Other	99	53	218	160
Total revenue	\$ 3,001	\$ 2,934	\$ 7,953	\$ 8,686
Impact of foreign currency movements (1)	6	35	66	119
Cumulative adjustment related to customer contract			105	
Net sales of reportable segments and All Other	\$ 3,007	\$ 2,969	\$ 8,124	\$ 8,805

(1) This amount primarily represents the impact of foreign currency adjustments in the Display Technologies, Environmental Technologies and Life Sciences segments.

At the end of 2015, Corning entered into an agreement with a customer pursuant to which Corning exchanged contingent consideration, for the incremental fair value associated with several commercial agreements, including the amendment of the customer's long-term supply agreement. The net present fair value (\$212 million) of the commercial benefit asset related to the long-term supply agreement was reclassified to the other asset line of the consolidated balance sheets and amortized over the term of agreement as a reduction in revenue. During March 2020, this customer announced its decision to exit its production of LCD panels by the end of 2020. Based on this announcement, Corning recorded a cumulative adjustment of \$105 million during the first quarter of 2020 as a reduction to revenue and will reflect the remaining balance as a reduction to revenue over the remainder of the current year. Due to the one-time nature of this cumulative adjustment, we have excluded it from segment results. However, it is included in the reconciliation from segment net income (loss) to consolidated net income.

Refer to Note 18 (Reportable Segments) to the consolidated financial statements for additional information.

Contract Assets and Liabilities

Contract assets, such as incremental costs to obtain or fulfill contracts, are an insignificant component of Corning's revenue recognition process. Most of Corning's cost of fulfillment as a manufacturer of products is classified as inventory, fixed assets and intangible assets, which are accounted for under the respective guidance for those asset types. Other costs of contract fulfillment are immaterial due to the nature of Corning's products and their respective manufacturing processes.

Contract liabilities include deferred revenue, other advanced payments and customer deposits. Other advanced payments are not significant to Corning's operations and are classified as part of other accrued liabilities in the financial statements. Customer deposits are predominately related to Display products and deferred revenue is predominately related to obtaining a controlling interest in HSG. Both are classified as other accrued liabilities and other liabilities, as appropriate, and are disclosed below. Refer to Note 4 (HSG Transactions) to the consolidated financial statements for additional information.

Shipping and handling fees are treated as a fulfillment cost and not as a separate performance obligation under the terms of the Company's revenue contracts due to the perfunctory nature of the shipping and handling obligations.

Corning Customer Deposits

As of September 30, 2020, and December 31, 2019, Corning had customer deposits of approximately \$1.3 billion and \$1.0 billion, respectively. The majority of the customer deposits were non-refundable cash deposits for customers to secure rights to an amount of glass produced by Corning under long-term supply agreements. The duration of these long-term supply agreements ranges up to 10 years. As glass is shipped to customers, Corning will recognize revenue and reduce the amount of the customer deposit liability.

HSG Customer Deposits

During the third quarter of 2020, Corning obtained a controlling interest in HSG and recorded a customer deposit liability of \$264 million, at the fair value, of refundable payments that HSG received from a customer under a long-term supply agreement. The discount rates being used to calculate the present value of the customer deposit range from 2.54% to 3.23%. The deposits will be repaid from 2029 to 2034 provided that all purchase obligations of this customer under the supply agreement have been satisfied.

In the nine months ended September 30, 2020 and 2019, credits issued for customer deposits were \$107 million and \$37 million, respectively. As of September 30, 2020, and December 31, 2019, \$1,153 million and \$927 million were recorded as other long-term liabilities, respectively. The remaining \$181 million and \$104 million, respectively, were classified as other current liabilities.

HSG Deferred Revenue

During the third quarter of 2020, Corning obtained a controlling interest in HSG and recorded deferred revenue of \$1,070 million at fair value related to the performance obligations of non-refundable consideration previously received by HSG from its customers under long term supply agreements. The fair values of deferred revenue were estimated by applying a bottom-up cost buildup method of the cost approach based on significant inputs such as the cost to fulfill the obligations as well as key assumptions including a normal profit margin as of September 9, 2020.

The deferred revenue recorded from customer deposits is tracked on a per customer contract unit basis. As customers take delivery of the committed volumes under the terms of the contracts, a per unit amount of deferred revenue is recognized when control of promised goods is transferred to the customer based upon the units shipped as compared to the remaining contractual units.

As of September 30, 2020, \$931 million was classified as a long-term liability and \$132 million remaining was classified as a current liability. These balances reflect deferred revenue reductions since September 9, 2020.

6. Commitments, Contingencies and Guarantees

Corning is a defendant in various lawsuits and is subject to various claims that arise in the normal course of business, the most significant of which are summarized below. In the opinion of management, the likelihood that the ultimate disposition of these matters will have a material adverse effect on Corning's consolidated financial position, liquidity, or results of operations, is remote.

Asbestos Claims

Corning and PPG Industries, Inc. each owned 50% of the capital stock of Pittsburgh Corning Corporation (“PCC”). PCC filed for Chapter 11 reorganization in 2000, and the Modified Third Amended Plan of Reorganization for PCC (the “Plan”) became effective in April 2016. At December 31, 2016, the Company’s liability under the Plan was \$290 million, which is required to be paid through a series of fixed payments that began in the second quarter of 2017. Payments of \$35 million and \$50 million were made in June 2020 and June 2019, respectively. The total amount of remaining payments due in years 2021 through 2022 is \$100 million, of which \$50 million will be paid in the second quarter of 2021 and is classified as a current liability. The remaining \$50 million is classified as a non-current liability.

Non-PCC Asbestos Claims

Corning is a defendant in certain cases alleging injuries from asbestos unrelated to PCC (the “non-PCC asbestos claims”) which had been stayed pending the confirmation of the Plan. The stay was lifted on August 25, 2016. At September 30, 2020 and December 31, 2019, the amount of the reserve for these non-PCC asbestos claims was estimated to be \$97 million and \$98 million, respectively. The reserve balance as of September 30, 2020 represents the undiscounted projection of claims and related legal fees for the estimated life of the litigation.

Dow Corning Chapter 11 Related Matters

Until June 1, 2016, Corning and The Dow Chemical Company (“Dow”) each owned 50% of the common stock of Dow Corning Corporation (“Dow Corning”). On May 31, 2016, Corning and Dow realigned their ownership interest in Dow Corning. Following the realignment, Corning no longer owned any interest in Dow Corning. With the realignment, Corning agreed to indemnify Dow Corning for 50% of Dow Corning’s non-ordinary course, pre-closing liabilities to the extent such liabilities exceed the amounts reserved for them by Dow Corning as of May 31, 2016, subject to certain conditions and limits.

Dow Corning Breast Implant Litigation

In May 1995, Dow Corning filed for bankruptcy protection to address pending and claimed liabilities arising from many thousands of breast implant product lawsuits. On June 1, 2004, Dow Corning emerged from Chapter 11 with a Plan of Reorganization (the “Plan”) which provided for the settlement or other resolution of implant claims. The Plan also includes releases for Corning and Dow as shareholders in exchange for contributions to the Plan.

Under the terms of the Plan, Dow Corning has established and funded a Settlement Trust and a Litigation Facility, referred to above, to provide a means for tort claimants to settle or litigate their claims. Inclusive of insurance, Dow Corning has paid approximately \$1.8 billion to the Settlement Trust. As of May 31, 2016, Dow Corning had recorded a reserve for breast implant litigation of \$290 million. In the event Dow Corning’s total liability for these claims exceeds such amount, Corning may be required to indemnify Dow Corning for up to 50% of the excess liability, subject to certain conditions and limits. As of September 30, 2020, Dow Corning had recorded a reserve for breast implant litigation of \$160 million. As a result, Corning does not believe its indemnity obligation for Dow Corning’s breast implant litigation liability, if any, will be material.

Dow Corning Bankruptcy Pendency Interest Claims

As a separate matter arising from the bankruptcy proceedings, Dow Corning has been defending claims asserted by commercial creditors who claimed additional compounded interest at default and state statutory judgment rates as well as attorneys’ fees and other enforcement costs, during the period from May 1995 through June 2004. As of May 31, 2016, Dow Corning had recorded a reserve for these claims of \$107 million. Dow Corning settled those claims as of September 30, 2019 and received approval of the settlement from the bankruptcy court. Corning does not believe its indemnity obligation, if any, for Dow Corning’s liability to be material.

Dow Corning Environmental Claims

In September 2019, Dow Corning formally notified Corning of certain environmental matters for which Dow Corning asserts that it has, or will, experience losses arising from remediation and response at a number of sites. In the event Dow Corning incurs a liability for these claims, Corning may be required to indemnify Dow Corning for up to 50% of that liability, subject to certain conditions and limits. As of September 30, 2020, Corning has determined a potential liability for certain of these environmental matters to be probable, and the amount recorded was not material. For the remainder of the environmental matters, the Company cannot reasonably estimate the indemnification liability owed to Dow Corning.

Environmental Litigation

Corning has been named by the Environmental Protection Agency (“the Agency”) under the Superfund Act, or by state governments under similar state laws, as a potentially responsible party for 15 active hazardous waste sites. Under the Superfund Act, all parties who may have contributed any waste to a hazardous waste site, identified by the Agency, are jointly and severally liable for the cost of cleanup unless the Agency agrees otherwise. It is Corning’s policy to accrue for its estimated liability related to Superfund sites and other environmental liabilities related to property owned by Corning based on expert analysis and continual monitoring by both internal and external consultants. At September 30, 2020 and December 31, 2019, Corning had accrued approximately \$78 million and \$41 million, respectively, for the undiscounted estimated liability for environmental cleanup and related litigation. Based upon the information developed to date, management believes that the accrued reserve is a reasonable estimate of the Company’s liability and that the risk of an additional loss in an amount materially higher than that accrued is remote.

7. Employee Retirement Plans

Corning has defined benefit pension plans covering certain domestic and international employees. The Company’s funding policy is to contribute, over time, an amount exceeding the minimum requirements to achieve the Company’s long-term funding targets. Corning contributed \$60 million and \$80 million in cash to the U.S. pension plans for the three and nine months ended September 30, 2020, respectively, and plans to contribute \$45 million in cash to the international plans during the fourth quarter of 2020.

The following table summarizes the components of net periodic benefit cost for Corning’s defined benefit pension and postretirement health care and life insurance plans (in millions):

	Pension benefits				Postretirement benefits			
	Three months ended		Nine months ended		Three months ended		Nine months ended	
	September 30,		September 30,		September 30,		September 30,	
	2020	2019	2020	2019	2020	2019	2020	2019
Service cost	\$ 29	\$ 25	\$ 87	\$ 76	\$ 2	\$ 3	\$ 7	\$ 7
Interest cost	32	37	94	111	5	7	15	21
Expected return on plan assets	(49)	(42)	(147)	(128)				
Amortization of actuarial net gain					1	(1)	1	(1)
Amortization of prior service cost (credit)	1	2	4	5	(2)	(2)	(5)	(6)
Recognition of actuarial (gain) loss			(2)	23				
Total pension and postretirement benefit expense	\$ 13	\$ 22	\$ 36	\$ 87	\$ 6	\$ 7	\$ 18	\$ 21

The components of net periodic benefit cost other than the service cost component are included in the line item other expense, net, in the consolidated statements of income.

8. Income Taxes

The provision for income taxes and the related effective income tax rates are as follows (in millions):

	Three months ended		Nine months ended	
	September 30,		September 30,	
	2020	2019	2020	2019
Provision for income taxes	\$ (23)	\$ (71)	\$ (33)	\$ (271)
Effective tax rate	5.1%	17.4%	11.3%	22.6%

For the three months ended September 30, 2020, the effective income tax rate differed from the United States (“U.S.”) statutory rate of 21%, primarily due to an estimate of income tax benefits generated by a current year net operating loss that will be carried-back to prior years as allowed under the CARES Act and changes of estimates based on the final U.S. tax return which were partially offset by additional income tax reserves. For the nine months ended September 30, 2020, the effective income tax rate differed from the U.S. statutory rate of 21% primarily due to an estimate of income tax benefits generated by a current year net operating loss that will be carried-back to prior years as allowed under the CARES Act and changes of estimates based on the final U.S. tax return which were partially offset by income tax reserves, an adjustment to the permanently reinvested foreign income position and foreign valuation allowances on deferred tax assets.

Prior to the HSG Transactions, Corning had a deferred tax asset resulting from its equity method investment in HSG. As a result of the HSG Transactions, Corning adjusted its deferred taxes by approximately \$117 million to reflect the impacts of the HSG Transactions, specifically the pre-tax gain of \$498 million on its previously held equity investment. The resulting net deferred tax liability is approximately \$9 million at September 30, 2020.

For the three months ended September 30, 2019, the effective income tax rate differed from the United States (“U.S.”) statutory rate of 21% primarily due to an increase in the estimated impact of base erosion and anti-abuse tax (“BEAT”) offset by changes of estimates based on the U.S. Federal 2018 tax return filed in October 2019, primarily due to tax reform. For the nine months ended September 30, 2019, the effective income tax rate differed from the U.S. statutory rate of 21% primarily due to an increase in the estimated impact of BEAT offset by changes of estimates based on the U.S. Federal 2018 tax return filed in October 2019, primarily due to tax reform, additional net tax expense of \$86 million driven by changes to tax reserves and the release of foreign valuation allowances on deferred tax assets.

Corning Precision Materials is currently appealing certain tax assessments and tax refund claims for tax years 2010 through 2018. The Company is required to deposit the disputed tax amounts with the South Korean government as a condition of its appeal of any tax assessments. Corning believes that it is more likely than not we will prevail in the appeal process. During the first nine months of 2020, we received refunds of \$101 million related to these claims. As of September 30, 2020, a non-current receivable of \$348 million related to the appeals was recorded. As of December 31, 2019, a current and non-current receivable of \$33 million and \$415 million, respectively, had been recorded.

Refer to Note 4 (HSG Transactions) to the consolidated financial statements for additional information.

9. Goodwill and Other Intangible Assets

The carrying amount of goodwill by segment as of September 30, 2020 and December 31, 2019 is as follows (in millions):

	Display Technologies	Optical Communications	Specialty Materials	Life Sciences	All Other	Total
Balance at December 31, 2019	\$ 129	\$ 931	\$ 150	\$ 616	\$ 109	\$ 1,935
Acquired goodwill (1)					495	495
Foreign currency translation adjustment and other	(2)	1		1	(3)	(3)
Balance at September 30, 2020	\$ 127	\$ 932	\$ 150	\$ 617	\$ 601	\$ 2,427

(1) The Company obtained a controlling interest in HSG during the third quarter of 2020. Refer to Note 4 (HSG Transactions) to the consolidated financial statements for additional information on this transaction.

Corning’s gross goodwill balances as of September 30, 2020 and December 31, 2019 were \$8.9 billion and \$8.4 billion, respectively. Accumulated impairment losses were \$6.5 billion as of September 30, 2020 and December 31, 2019, and were generated primarily through goodwill impairments related to the Optical Communications segment.

Other intangible assets are as follows (in millions):

	September 30, 2020			December 31, 2019		
	Gross	Accumulated amortization	Net	Gross	Accumulated amortization	Net
Amortized intangible assets:						
Patents, trademarks, and trade names	\$ 499	\$ 248	\$ 251	\$ 469	\$ 228	\$ 241
Customer lists and other	1,505	424	1,081	1,301	357	944
Total	\$ 2,004	\$ 672	\$ 1,332	\$ 1,770	\$ 585	\$ 1,185

Corning’s amortizable intangible assets are primarily related to the Optical Communications and Life Sciences segments and “All Other”. The net carrying amount of intangible assets increased during the first nine months of 2020, primarily driven by the consolidation of HSG, foreign currency translation and other adjustments of \$4 million partially offset by amortization of \$87 million and an impairment of \$55 million. Intangible assets obtained from HSG consist primarily of \$215 million of developed technologies and know-how, and \$70 million of other intangibles that are amortized over the weighted average useful life of approximately 20 and 15 years, respectively.

Annual amortization expense related to intangible assets is estimated to be \$133 million for 2021, \$131 million 2022, \$130 million for 2023, \$128 million for 2024, and \$126 million for 2025.

Refer to Note 4 (HSG Transactions) to the consolidated financial statements for additional information.

10. Earnings per Common Share

The following table sets forth the computation of basic and diluted earnings per common share (in millions, except per share amounts):

	Three months ended September 30,		Nine months ended September 30,	
	2020	2019	2020	2019
Net income attributable to Corning Incorporated	\$ 427	\$ 337	\$ 260	\$ 928
Less: Series A convertible preferred stock dividend	24	24	73	73
Net income available to common stockholders – basic	403	313	187	855
Plus: Series A convertible preferred stock dividend	24	24		73
Net income available to common stockholders – diluted	\$ 427	\$ 337	\$ 187	\$ 928
Weighted-average common shares outstanding – basic	760	775	760	780
Effect of dilutive securities:				
Employee stock options and other dilutive securities	14	7	8	8
Series A convertible preferred stock (1)	115	115		115
Weighted-average common shares outstanding – diluted	889	897	768	903
Basic earnings per common share	\$ 0.53	\$ 0.40	\$ 0.25	\$ 1.10
Diluted earnings per common share	\$ 0.48	\$ 0.38	\$ 0.24	\$ 1.03
Anti-dilutive potential shares excluded from diluted earnings per common share:				
Series A convertible preferred stock (1)			115	
Employee stock options and awards	3	2	7	2
Total	3	2	122	2

(1) For the nine months ended September 30, 2020, the Series A preferred stock was anti-dilutive; therefore, it was excluded from the calculation of diluted earnings per share.

11. Inventories, Net of Inventory Reserves

Inventories, net of inventory reserves comprise the following (in millions):

	September 30, 2020	December 31, 2019
Finished goods	\$ 1,322	\$ 973
Work in process	370	421
Raw materials and accessories	412	481
Supplies and packing materials	477	445
Total inventories, net of inventory reserves	\$ 2,581	\$ 2,320

Corning obtained a controlling interest in HSG as of September 9, 2020. Consolidated inventory balances as of September 30, 2020, included \$503 million of inventory from HSG.

Refer to Note 4 (HSG Transactions) to the consolidated financial statements for additional information.

12. Debt

Based on borrowing rates currently available to us for loans with similar terms and maturities, the fair value of long-term debt was \$9.2 billion and \$8.5 billion at September 30, 2020 and December 31, 2019, respectively, compared to recorded book values of \$7.8 billion and \$7.7 billion at September 30, 2020 and December 31, 2019, respectively. The Company measures the fair value of its long-term debt using Level 2 inputs based primarily on current market yields for its existing debt traded in the secondary market.

In conjunction with the change in control of HSG on September 9, 2020, a variable interest rate loan of \$175 million U.S. dollars (“USD”), maturing on September 8, 2021, was made to DC HSC Holdings, LLC, now a consolidated subsidiary of Corning and is reflected in Current portion of long term debt and short-term borrowings in Corning’s consolidated balance sheets. Refer to Note 4 (HSG Transactions) to the consolidated financial statements for additional information.

Corning had no outstanding commercial paper at September 30, 2020 and December 31, 2019.

Debt Issuances

2020

During the second quarter of 2020, Corning established an incremental liquidity facility for 25 billion Japanese yen, equivalent to \$232 million USD, with a maturity of three years. As of September 30, 2020, the facility has not been drawn upon.

In the first quarter of 2020, Corning established two unsecured variable rate loan facilities for 1,050 million Chinese yuan, equivalent to \$150 million USD, and 749 million Chinese yuan, equivalent to \$105 million USD, each with a maturity of five years.

Borrowings under these loan facilities through the end of the third quarter totaled 1,491 million Chinese yuan, or approximately \$212 million USD. These Chinese yuan-denominated proceeds will not be converted into USD and will be used for capital projects. Payments of principal and interest on the Notes will be in Chinese yuan, or should yuan be unavailable due to circumstances beyond Corning’s control, a USD equivalent.

2019

In the third quarter of 2019, Corning issued two Japanese yen-denominated debt securities (the “Notes”), as follows:

- ¥31.3 billion 1.153% senior unsecured notes with a maturity of 12 years; and
- ¥5.9 billion 1.513% senior unsecured notes with a maturity of 20 years.

The proceeds from the Notes were received in Japanese yen and converted to USD on the date of issuance. The net proceeds received in USD, after deducting offering expenses, were approximately \$349 million and will be used for general corporate purposes. Payments of principal and interest on the Notes will be in Japanese yen, or should yen be unavailable due to circumstances beyond Corning’s control, a USD equivalent.

On a quarterly basis, Corning will recognize the foreign currency translation gains and losses resulting from changes in exchange rates within accumulated other comprehensive income (loss) in shareholders’ equity. Cash proceeds from loans and debt issuances are disclosed as financing activities, and cash payments for interest will be disclosed as operating activities, in the consolidated statements of cash flows.

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13. Other Liabilities

Other liabilities follow (in millions):

	September 30, 2020	December 31, 2019
Current liabilities:		
Wages and employee benefits	\$ 501	\$ 565
Income taxes	194	182
Derivative instruments (Note 15)	143	100
Asbestos and other litigation (Note 6)	63	57
Deferred revenue (Note 5)	132	
Settlement liability (Note 4)	58	
Customer deposits (Note 5)	181	104
Short-term leases	89	62
Other current liabilities	1,056	853
Other accrued liabilities	\$ 2,417	\$ 1,923
Non-current liabilities:		
Defined benefit pension plan liabilities	\$ 927	\$ 980
Derivative instruments (Note 15)	131	165
Asbestos and other litigation (Note 6)	144	196
Deferred revenue (Note 5)	931	
Settlement liability (Note 4)	117	
Investment in HSG (1)		270
Customer deposits (Note 5)	1,153	927
Deferred tax liabilities	247	325
Long-term leases	606	450
Other non-current liabilities	816	667
Other liabilities	\$ 5,072	\$ 3,980

(1) The negative carrying value resulted from a one-time charge to this entity as of December 31, 2019 for the impairment of certain assets.

14. Hedging Activities

Cash Flow Hedges

Corning's cash flow hedging activities utilize over-the-counter ("OTC") foreign exchange forward contracts to reduce the risk that movements in exchange rates will adversely affect the net cash flows resulting from the sale of products to customers and purchases from suppliers. The total gross notional values for foreign currency cash flow hedges are \$0.8 billion and \$2.1 billion at September 30, 2020 and December 31, 2019, respectively, with maturities spanning the years 2020 through 2023. Corning defers gains and losses related to the cash flow hedges into accumulated other comprehensive loss on the consolidated balance sheets until the hedged item impacts earnings. At September 30, 2020, the amount expected to be reclassified into earnings within the next 12 months is a pre-tax gain of \$11 million.

As of March 31, 2020, a loss of \$14 million was reclassified from accumulated other comprehensive loss into other expense, net, due to the de-designation of certain cash flow hedges related to Japanese yen-denominated sales.

The effect of cash flow hedges on Corning's consolidated statements of income and comprehensive income is not material for the three and nine months ended September 30, 2020 and 2019.

Undesignated Hedges

Corning also uses OTC foreign exchange forward and option contracts that are not designated as hedging instruments for accounting purposes. The undesignated hedges limit exposure to foreign functional currency fluctuations related to certain subsidiaries' monetary assets, monetary liabilities and net earnings in foreign currencies.

The table below includes a total gross notional value for translated earnings contracts of \$8.9 billion and \$12.2 billion at September 30, 2020 and December 31, 2019, respectively. These include gross notional value for average rate forward contracts of \$6.6 billion and \$9.7 billion, zero-cost collars and purchased put or call options of \$2.3 billion and \$2.5 billion at September 30, 2020 and December 31, 2019, respectively. The majority of the average rate forward contracts hedge a significant portion of the Company's exposure to the Japanese yen with maturities spanning the years 2020-2023 and with gross notional values of \$5.4 billion and \$7.7 billion at September 30, 2020 and December 31, 2019, respectively. The average rate forward contracts also partially hedge the impacts of the South Korean won, Chinese yuan, euro, new Taiwan dollar and British pound translation on the Company's projected net income. With respect to the zero-cost collars, the gross notional amount includes the value of both the put and call options. However, due to the nature of the zero-cost collars, only the put or the call option can be exercised at maturity.

The following table summarizes the notional amounts and respective fair values of Corning's derivative financial instruments on a gross basis for September 30, 2020 and December 31, 2019 (in millions):

	Notional amount		Asset derivatives				Liability derivatives			
			Balance sheet location	Fair value		Balance sheet location	Fair value		Sept. 30, 2020	Dec. 31, 2019
	Sept. 30, 2020	Dec. 31, 2019		Sept. 30, 2020	Dec. 31, 2019		Sept. 30, 2020	Dec. 31, 2019		
Derivatives										
designated as										
hedging										
instruments										
Foreign exchange			Other current			Other accrued				
contracts	\$ 826	\$ 2,123	assets	\$ 18	\$ 38	liabilities	\$ (7)	\$ (7)		
			Other assets	14	37	Other liabilities	(1)	(4)		
Derivatives not										
designated as										
hedging										
instruments										
Foreign exchange			Other current			Other accrued				
and other contracts	6,816	1,815	assets	28	5	liabilities	(61)	(19)		
			Other assets	32	21	Other liabilities	(58)			
Translated earnings			Other current			Other accrued				
contracts	8,906	12,166	assets	58	114	liabilities	(75)	(74)		
			Other assets	33	34	Other liabilities	(72)	(161)		
Total derivatives	\$ 16,548	\$ 16,104		\$ 183	\$ 249		\$ (274)	\$ (265)		

The following tables summarize the effect on the consolidated financial statements relating to Corning's derivative financial instruments (in millions):

Derivatives in hedging relationships for cash flow hedges	Effect of derivative instruments on the consolidated financial statements for the three months ended September 30,				
	Gain (loss) recognized in other comprehensive income (OCI)		Location of gain (loss) reclassified from accumulated OCI into income effective (ineffective)	Gain (loss) reclassified from accumulated OCI into income	
	2020	2019		2020	2019
			Net sales	\$	(2)
Foreign exchange contracts	\$ 16	\$ (26)	Cost of sales	3	\$ 2
Total cash flow hedges	\$ 16	\$ (26)		\$ 1	\$ 2

Derivatives in hedging relationships for cash flow hedges	Effect of derivative instruments on the consolidated financial statements for the nine months ended September 30,				
	Gain (loss) recognized in other comprehensive income (OCI)		Location of gain (loss) reclassified from accumulated OCI into income effective (ineffective)	Gain (loss) reclassified from accumulated OCI into income	
	2020	2019		2020	2019
			Net sales	\$	(4)
			Cost of sales	7	\$ 7
Foreign exchange contracts	\$ (51)	\$ (19)	Other expense, net (1)	(14)	
Total cash flow hedges	\$ (51)	\$ (19)		\$ (11)	\$ 7

Undesignated derivatives	Location of gains recognized in income	Gains recognized in income			
		Three months ended September 30,		Nine months ended September 30,	
		2020	2019	2020	2019
Foreign exchange and other contracts	Other (expense) income,				
– balance sheet, loans and other	net (1)	\$ (48)	\$ 19	\$ (62)	\$ 38
Translated earnings contracts	Translated earnings contract (loss) gain, net	(100)	86	5	163
Total undesignated		\$ (148)	\$ 105	\$ (57)	\$ 201

(1) A loss of \$14 million was reclassified from accumulated other comprehensive loss into other expense, net, resulting from the de-designation of certain cash flow hedges.

15. Fair Value Measurements

Fair value standards under GAAP define fair value, establish a framework for measuring fair value in applying generally accepted accounting principles, and require disclosures about fair value measurements. The standards also identify two kinds of inputs that are used to determine the fair value of assets and liabilities: observable and unobservable. Observable inputs are based on market data or independent sources, while unobservable inputs are based on the Company's own market assumptions. Once inputs have been characterized, the inputs are prioritized into one of three broad levels (provided in the table below) used to measure fair value. Fair value standards apply whenever an entity is measuring fair value under other accounting pronouncements that require or permit fair value measurement and require the use of observable market data when available.

The following tables provide fair value measurement information for the Company's major categories of financial assets and liabilities measured on a recurring basis (in millions):

		Fair value measurements at reporting date using		
	September 30, 2020	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
Current assets:				
Other current assets (1)(2)	\$ 132		\$ 104	\$ 28
Non-current assets:				
Investments (3)	\$ 13	\$ 13		
Other assets (1)(2)	\$ 95		\$ 79	\$ 16
Current liabilities:				
Other accrued liabilities (1)	\$ 143		\$ 143	
Non-current liabilities:				
Other liabilities (1)	\$ 131		\$ 131	

(1) Derivative assets and liabilities include foreign exchange contracts which are measured using observable inputs for similar assets and liabilities.

(2) Included in other current assets and other assets are auction rate securities of \$24 million and a contingent consideration asset for a cost adjustment contract of \$20 million, resulting from the HSG Transactions as of September 9, 2020, that were measured using unobservable (Level 3) inputs.

(3) Included in the investments were equity securities with readily available fair values that were measured using Level 1 inputs.

		Fair value measurements at reporting date using			
	December 31, 2019	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	
Current assets:					
Other current assets (1)	\$	157	\$	157	
Non-current assets:					
Other assets (1)(2)	\$	92	\$	71	
				\$	21
Current liabilities:					
Other accrued liabilities (1)	\$	100	\$	100	
Non-current liabilities:					
Other liabilities (1)	\$	165	\$	165	

(1) Derivative assets and liabilities include foreign exchange contracts which are measured using observable inputs for similar assets and liabilities.

(2) Other assets include one of the Company's renewable energy derivative contracts that was measured using unobservable (Level 3) inputs, in the amount of \$21 million.

For the nine months ended September 30, 2020, assets and liabilities that were measured using unobservable (Level 3) inputs resulted in a loss recognized in earnings of \$21 million for a renewable energy derivative contract. For the year ended December 31, 2019, assets and liabilities that were measured using unobservable (Level 3) inputs resulted in unrealized gains recognized in earnings of \$21 million for a renewable energy derivative contract and the reversal of a liability for contingent consideration of \$20 million.

Assets and Liabilities Measured on a Non-Recurring Basis

During the second quarter of 2020, Corning performed an impairment analysis for the long-lived asset group in “All Other” using discounted cash flow projections and recorded a pre-tax asset impairment loss of \$195 million. During the third quarter of 2020, the Company further reduced investments in these research and development programs and reassessed the business plans. As a result, an additional impairment loss of \$22 million was recorded, inclusive of an insignificant amount of goodwill, to reduce the book value to the fair value of the asset group, which resulted in a total pre-tax asset impairment loss of \$217 million for the nine months ended September 30, 2020. The fair value of the asset group was measured using unobservable (Level 3) inputs. Refer to Note 2 (Restructuring, Impairment and Other Charges and Credits) to the consolidated financial statements for additional information on restructuring activities and impairment.

On December 31, 2019, HSG, one of the Company’s equity method affiliates, wrote down its long-lived assets to fair value on a nonrecurring basis. HSG engaged a third-party appraiser to assist in determining the fair value of its long-lived assets using unobservable (Level 3) inputs based on the highest and best use of the asset group. As a result, HSG recognized pre-tax asset impairment losses of \$916 million for the year ended December 31, 2019. Corning’s share of the pre-tax impairment loss was \$369 million. For the nine months ended September 30, 2020, no material asset impairment losses were recognized on a nonrecurring basis by HSG.

Fair value measurements (Level 3) related to the Redemption are disclosed in Note 4 (HSG Transactions) to the consolidated financial statements. There were no other significant financial assets and liabilities measured on a nonrecurring basis as of September 30, 2020 and December 31, 2019.

16. Shareholders’ Equity

Fixed Rate Cumulative Convertible Preferred Stock, Series A

Corning has 2,300 outstanding shares of Fixed Rate Cumulative Convertible Preferred Stock, Series A. The Preferred Stock is convertible at the option of the holder and the Company upon certain events, at a conversion rate of 50,000 shares of Corning’s common stock per one share of Preferred Stock, subject to certain anti-dilution provisions. As of September 30, 2020, the Preferred Stock has not been converted, and none of the anti-dilution provisions have been triggered.

Share Repurchases

On April 26, 2018, Corning’s Board of Directors approved a \$2 billion share repurchase program with no expiration date (the “2018 Repurchase Program”). On July 17, 2019, Corning’s Board of Directors authorized \$5 billion in share repurchases with no expiration date (the “2019 Repurchase Program”).

The Company suspended share buybacks during the first quarter of 2020 and made no share repurchases for the three months ended September 30, 2020. For the nine months ended September 30, 2020, the Company repurchased 4.1 million shares of common stock on the open market for approximately \$105 million, as part of its 2018 Repurchase Program.

In the three and nine months ended September 30, 2019, the Company repurchased 10.8 million and 23.4 million shares of common stock on the open market for approximately \$308 million and \$703 million, respectively, as part of its 2018 Repurchase Program.

Accumulated Other Comprehensive Loss

In the three and nine months ended September 30, 2020 and 2019, the change in accumulated other comprehensive loss was primarily related to the foreign currency translation adjustment and the net unrealized gains (losses) on designated hedges components.

A summary of changes in the foreign currency translation adjustment component of accumulated other comprehensive loss is as follows (in millions) (1):

	Three months ended		Nine months ended	
	September 30,		September 30,	
	2020	2019	2020	2019
Beginning balance	\$ (1,064)	\$ (786)	\$ (857)	\$ (714)
Other comprehensive income (loss) (2)	274	(235)	75	(293)
Equity method affiliates (3)	9	(3)	1	(17)
Net current-period other comprehensive income (loss)	283	(238)	76	(310)
Ending balance	\$ (781)	\$ (1,024)	\$ (781)	\$ (1,024)

- (1) All amounts are after tax. Amounts in parentheses indicate debits to accumulated other comprehensive loss.
(2) For the three and nine months ended September 30, 2020, amounts are net of tax expense of \$21 million and \$10 million, respectively. For the three and nine months ended September 30, 2019, amounts are net of tax benefit of \$16 million and \$39 million, respectively.
(3) Tax effects are not significant.

A summary of changes in the net unrealized gains (losses) on designated hedges component of accumulated other comprehensive loss is as follows (in millions) (1):

	Three months ended		Nine months ended	
	September 30,		September 30,	
	2020	2019	2020	2019
Beginning balance	\$ 9	\$ 8	\$ 51	\$ 6
Other comprehensive income (loss) before				
reclassifications (2)	11	(21)	(40)	(16)
Amounts reclassified from accumulated other				
comprehensive (loss) income (3)		(1)	9	(4)
Net current-period other comprehensive income (loss)	11	(22)	(31)	(20)
Ending balance	\$ 20	\$ (14)	\$ 20	\$ (14)

- (1) All amounts are after tax. Amounts in parentheses indicate debits to accumulated other comprehensive loss.
(2) For the three and nine months ended September 30, 2020, amounts are net of tax expense of \$5 million and tax benefit of \$11 million, respectively. For the three and nine months ended September 30, 2019, tax effects are not significant.
(3) Tax effects are not significant.

17. Share-Based Compensation

Corning maintains long-term incentive plans (the “Plans”) for key employees and non-employee members of its Board of Directors. The Plans allow us to grant equity-based compensation awards, including stock options, stock appreciation rights, performance share units, restricted stock units, restricted stock awards or a combination of awards (collectively, share-based awards). At September 30, 2020, there were approximately 36 million unissued common shares available for future grants authorized under the Plans.

Beginning in 2020, Corning increased the equity component in its Long-Term Incentive (“LTI”) Plan from 40% to 75% of an executive’s annual targeted compensation opportunity.

On May 20, 2020, the Company announced temporary compensation actions in response to the impact of the global COVID-19 pandemic on the Company. Effective June 1, 2020, the base salary of the Company’s CEO was reduced by 40% and each of the other named executive officers’ salaries were reduced by 30%. Each non-employee director’s cash compensation was reduced by 40%. Additionally, the Company reduced salaries, from 5% to 30%, for all other salaried employees in the United States from June 1, 2020 through December 31, 2020. The Company took similar actions outside the United States based on local regulations and mutual consent requirements. The Company took these and other actions to preserve cash in 2020, and has issued equity to each employee, including the named executive officers, in the form of restricted stock units and stock options, in an amount equivalent to the employee’s salary reduction on the grant date, which vest over a period of three years. Similarly, each non-employee director received restricted stock units in an amount equivalent to the director’s fee reduction.

Share-based compensation expense is allocated to the selling, general and administrative, research, development and engineering, and cost of sales expenses lines in the consolidated statements of income.

Stock Compensation Plans

The Company measures and recognizes compensation cost for all share-based payment awards made to employees and directors based on estimated fair values.

Total share-based compensation expense was approximately \$62 million and \$13 million, respectively, and \$127 million and \$43 million, respectively, for the three and nine months ended September 30, 2020 and 2019. The incremental change in expense was \$49 million and \$84 million for the three and nine months ended September 30, 2020, respectively. The increase was primarily driven by a larger equity component for Director and Executive compensation and issuance of employee share-based compensation awards. The income tax benefit realized from share-based compensation was not significant for the three and nine months ended September 30, 2020 and 2019. Refer to Note 8 (Income Taxes) to the consolidated financial statements for additional information.

Stock Options

Corning's stock option plans provide non-qualified and incentive stock options to purchase authorized but unissued common shares, or treasury shares, at the market price on the grant date and generally become exercisable in installments from one year to five years from the grant date. The maximum term of non-qualified and incentive stock options is 10 years from the grant date. An award is considered vested when the employee's retention of the award is no longer contingent on providing subsequent service (the "non-substantive vesting period approach").

The following table summarizes information concerning stock options outstanding, including the related transactions under the stock option plans for the nine months ended September 30, 2020:

	Number of shares (in thousands)	Weighted- average exercise price	Weighted- average remaining contractual term in years	Aggregate intrinsic value (in thousands)
Options Outstanding as of December 31, 2019	13,172	\$ 21.94		
Granted	10,653	19.65		
Exercised	(2,560)	18.88		
Forfeited and Expired	(166)	20.04		
Options Outstanding as of September 30, 2020	21,099	21.17	7.24	\$ 239,564
Options Expected to Vest as of September 30, 2020	20,703	21.19	7.19	234,719
Options Exercisable as of September 30, 2020	7,400	19.38	3.56	96,460

Corning uses a multiple-point Black-Scholes valuation model to estimate the fair value of stock option grants. Corning utilizes a blended approach for calculating the volatility assumption used in the multiple-point Black-Scholes valuation model defined as the weighted average of the short-term implied volatility, the most recent volatility for the period equal to the expected term, and the most recent 15-year historical volatility. The expected term is the period the options are expected to be outstanding and is calculated using a combination of historical exercise experience adjusted to reflect the current vesting period of options being valued, and partial life cycles of outstanding options. The risk-free rates used in the multiple-point Black-Scholes valuation model are the implied rates for a zero-coupon U.S. Treasury bond with a term equal to the option's expected term. The ranges given below reflect results from separate groups of employees exhibiting different exercise behavior.

The following inputs were used for the valuation of option grants under the stock option plans (1):

	Three months ended September 30,	Nine months ended September 30,					
	2019	2020			2019		
Expected volatility	29.5%	32.9	-	32.9%	29.5	-	29.9%
Weighted-average volatility	29.5%	32.9	-	32.9%	29.5	-	29.9%
Expected dividends	2.95%	4.48	-	4.48%	2.36	-	2.95%
Risk-free rate	1.5%	0.5	-	0.5%	1.5	-	2.4%
Average risk-free rate	1.5%	0.5	-	0.5%	1.5	-	2.4%
Expected term (in years)	7.4	7.4	-	7.4	7.4	-	7.4
Pre-vesting executive departure rate	0.6%	0.6	-	0.6%	0.6	-	0.6%
Pre-vesting non-executive departure rate		2.5	-	2.5%			

(1) Stock options were granted during the three months ended June 30, 2020, and three months ended June 30 and September 30, 2019. There were no stock options granted during the three months ended March 31 and September 30, 2020, and the three months ended March 31, 2019.

Incentive Stock Plans

The Corning Incentive Stock Plan permits restricted stock and restricted stock unit grants, either determined by specific performance goals or issued directly, in most instances, subject to the possibility of forfeiture and without cash consideration. Restricted stock and restricted stock units under the Incentive Stock Plan are granted at the closing market price on the grant date, contingently vest over a period of generally one year to ten years, and generally have contractual lives of one year to ten years. The fair value of each restricted stock grant or restricted stock unit awarded under the Incentive Stock Plan is based on the grant date closing price of the Company's stock.

The following table represents a summary of the status of the Company's non-vested time-based restricted stock and restricted stock units as of December 31, 2019 and changes which occurred during the nine months ended September 30, 2020:

	Number of shares (in thousands)	Weighted average grant-date fair value
Non-vested shares and share units at December 31, 2019	5,189	\$ 27.58
Granted	9,272	20.69
Vested	(1,176)	27.50
Forfeited	(192)	24.42
Non-vested shares and share units at September 30, 2020	13,093	\$ 22.76

18. Reportable Segments

The Company's reportable segments are as follows:

- Display Technologies – manufactures glass substrates for flat panel liquid crystal displays and other high-performance display panels.
- Optical Communications – manufactures carrier network and enterprise network components for the telecommunications industry.
- Specialty Materials – manufactures products that provide more than 150 material formulations for glass, glass ceramics and fluoride crystals to meet demand for unique customer needs.
- Environmental Technologies – manufactures ceramic substrates and filters for automotive and diesel applications.
- Life Sciences – manufactures glass and plastic labware, equipment, media, serum and reagents enabling workflow solutions for drug discovery and bioproduction.

All other businesses that do not meet the quantitative threshold for separate reporting have been grouped as "All Other." This group is primarily comprised of the results of the pharmaceutical technologies, auto glass and new product lines and development projects, as well as certain corporate investments.

The Company obtained a controlling interest in HSG during the third quarter of 2020 and has consolidated results in “All Other” as of September 9, 2020. Refer to Note 4 (HSG Transactions) to the consolidated financial statements for additional information on this transaction.

The financial results for the reportable segments are prepared on a basis consistent with the internal disaggregation of financial information to assist the chief operating decision maker (“CODM”) in making internal operating decisions. The impact of changes in the Japanese yen, South Korean won, Chinese yuan and new Taiwan dollar are excluded from segment sales and segment net income for the Display Technologies and Specialty Materials segments. The impact of changes in the euro, Chinese yuan and Japanese yen are excluded from segment sales and segment net income for the Environmental Technologies and Life Sciences segments. Certain income and expenses are included in the unallocated amounts in the reconciliation of reportable segment net income (loss) to consolidated net income. These include items that are not used by the CODM in evaluating the results of or in allocating resources to the segments and include the following items: the impact of translated earnings contracts; acquisition-related costs; discrete tax items and other tax-related adjustments; certain litigation, regulatory and other legal matters; restructuring, impairment losses and other charges and credits; adjustments relating to acquisitions; and other non-recurring non-operational items. Although these amounts have been excluded from segment results, they are included in reported consolidated results.

The earnings of equity affiliates that are closely associated with the reportable segments are included in the respective segment’s net income (loss). Certain common expenses among reportable segments have been allocated differently than they would be for stand-alone financial information. Segment net income (loss) may not be consistent with measures used by other companies.

Reportable Segments (in millions):

	Display Technologies	Optical Communications	Specialty Materials	Environmental Technologies	Life Sciences	All Other	Total
Three months ended September 30, 2020							
Segment net sales	\$ 827	\$ 909	\$ 570	\$ 379	\$ 223	\$ 99	\$ 3,007
Depreciation (1)	\$ 134	\$ 59	\$ 40	\$ 32	\$ 12	\$ 16	\$ 293
Research, development and engineering expenses (2)	\$ 22	\$ 50	\$ 39	\$ 24	\$ 7	\$ 35	\$ 177
Income tax (provision) benefit (3)	\$ (52)	\$ (32)	\$ (38)	\$ (18)	\$ (8)	\$ 12	\$ (136)
Segment net income (loss) (4)	\$ 196	\$ 115	\$ 146	\$ 69	\$ 28	\$ (50)	\$ 504

	Display Technologies	Optical Communications	Specialty Materials	Environmental Technologies	Life Sciences	All Other	Total
Three months ended September 30, 2019							
Segment net sales	\$ 793	\$ 1,007	\$ 463	\$ 397	\$ 256	\$ 53	\$ 2,969
Depreciation (1)	\$ 144	\$ 59	\$ 35	\$ 32	\$ 12	\$ 13	\$ 295
Research, development and engineering expenses (2)	\$ 30	\$ 53	\$ 37	\$ 29	\$ 5	\$ 52	\$ 206
Income tax (provision) benefit (3)	\$ (49)	\$ (35)	\$ (25)	\$ (21)	\$ (11)	\$ 19	\$ (122)
Segment net income (loss) (4)	\$ 185	\$ 127	\$ 92	\$ 79	\$ 41	\$ (70)	\$ 454

	Display Technologies	Optical Communications	Specialty Materials	Environmental Technologies	Life Sciences	All Other	Total
Nine months ended September 30, 2020							
Segment net sales	\$ 2,331	\$ 2,587	\$ 1,339	\$ 925	\$ 724	\$ 218	\$ 8,124
Depreciation (1)	\$ 400	\$ 183	\$ 120	\$ 99	\$ 37	\$ 43	\$ 882
Research, development and engineering expenses (2)	\$ 77	\$ 157	\$ 113	\$ 74	\$ 20	\$ 126	\$ 567
Income tax (provision) benefit (3)	\$ (133)	\$ (63)	\$ (76)	\$ (27)	\$ (26)	\$ 50	\$ (275)
Segment net income (loss) (4)	\$ 500	\$ 225	\$ 287	\$ 104	\$ 97	\$ (185)	\$ 1,028

	Display Technologies	Optical Communications	Specialty Materials	Environmental Technologies	Life Sciences	All Other	Total
Nine months ended							
September 30, 2019							
Segment net sales	\$ 2,459	\$ 3,161	\$ 1,141	\$ 1,125	\$ 759	\$ 160	\$ 8,805
Depreciation (1)	\$ 445	\$ 178	\$ 107	\$ 95	\$ 37	\$ 36	\$ 898
Research, development and engineering expenses (2)	\$ 85	\$ 163	\$ 119	\$ 87	\$ 15	\$ 164	\$ 633
Income tax (provision) benefit (3)	\$ (159)	\$ (117)	\$ (56)	\$ (53)	\$ (30)	\$ 56	\$ (359)
Segment net income (loss) (4)	\$ 606	\$ 427	\$ 208	\$ 199	\$ 112	\$ (210)	\$ 1,342

- (1) Depreciation expense for Corning's reportable segments includes an allocation of depreciation of corporate property not specifically identifiable to a segment.
- (2) Research, development and engineering expenses include direct project spending that is identifiable to a segment.
- (3) Income tax (provision) benefit reflects a tax rate of 21%.
- (4) Many of Corning's administrative and staff functions are performed on a centralized basis. Where practicable, Corning charges these expenses to segments based upon the extent to which each business uses a centralized function. Other staff functions, such as corporate finance, human resources and legal, are allocated to segments, primarily as a percentage of sales. Expenses that are not allocated to the segments are included in the reconciliation of reportable segment net income (loss) to consolidated net income.

A reconciliation of reportable segment and All Other net sales to consolidated net sales follows (in millions):

	Three months ended September 30,		Nine months ended September 30,	
	2020	2019	2020	2019
Net sales of reportable segments and All Other	\$ 3,007	\$ 2,969	\$ 8,124	\$ 8,805
Impact of foreign currency movements (1)	(6)	(35)	(66)	(119)
Cumulative adjustment related to customer contract (2)			(105)	
Consolidated net sales	\$ 3,001	\$ 2,934	\$ 7,953	\$ 8,686

- (1) This amount primarily represents the impact of foreign currency adjustments in the Display Technologies, Environmental Technologies and Life Sciences segments.
- (2) Amount represents the negative impact of a cumulative adjustment to reduce revenue in the amount of \$105 million recorded during the first quarter of 2020. The adjustment was associated with a previously recorded commercial benefit asset, reflected as a prepayment, to a customer with a long-term supply agreement that is exiting its production of LCD panels. Refer to Note 5 (Revenue) to the consolidated financial statements for additional information.

A reconciliation of reportable segment net income (loss) to consolidated net income follows (in millions):

	Three months ended		Nine months ended	
	September 30,		September 30,	
	2020	2019	2020	2019
Net income of reportable segments	\$ 554	\$ 524	\$ 1,213	\$ 1,552
Net loss of All Other (1)	(50)	(70)	(185)	(210)
Unallocated amounts:				
Impact of foreign currency movements not included in segment net income (loss)		(20)	(25)	(93)
(Loss) gain on foreign currency hedges related to translated earnings	(99)	84	(6)	161
Translation (loss) gain on Japanese yen-denominated debt	(39)	11	(50)	(10)
Litigation, regulatory and other legal matters	(83)	24	(108)	24
Research, development, and engineering expenses	(35)	(33)	(111)	(104)
Transaction-related gain, net (2)	498		498	
Equity in (losses) earnings of affiliated companies (3)	(79)	20	20	80
Amortization of intangibles	(33)	(28)	(87)	(85)
Interest expense, net	(67)	(51)	(189)	(145)
Income tax benefit	113	51	242	88
Cumulative adjustment related to customer contract (4)			(105)	
Severance charges (5)	(6)	(18)	(141)	(25)
Asset impairment (5)	(22)		(217)	
Capacity realignment and other charges and credits (5)	(143)	(130)	(375)	(197)
Other corporate items	(82)	(27)	(114)	(108)
Net income	\$ 427	\$ 337	\$ 260	\$ 928

- (1) The Company obtained a controlling interest in HSG during the third quarter of 2020 and has consolidated results in "All Other" as of September 9, 2020.
- (2) Amount represents the pre-tax gain recorded on Corning's previously held equity investment in HSG. Refer to Note 4 (HSG Transactions) to the consolidated financial statements for additional information on this transaction.
- (3) Primarily represents the equity earnings of HSG prior to September 9, 2020. Refer to Note 3 (Investments) and Note 4 (HSG Transactions) to the consolidated financial statements for more information.
- (4) Amount represents the negative impact of a cumulative adjustment to reduce revenue in the amount of \$105 million recorded during the first quarter of 2020. The adjustment was associated with a previously recorded commercial benefit asset, reflected as a prepayment, to a customer with a long-term supply agreement that is exiting its production of LCD panels. Refer to Note 5 (Revenue) to the consolidated financial statements for additional information.
- (5) Refer to Note 2 (Restructuring, Impairment and Other Charges and Credits) to the consolidated financial statements for additional information on restructuring activities and impairment.

ITEM 2. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

ORGANIZATION OF INFORMATION

Management’s Discussion and Analysis of Financial Condition and Results of Operations (“MD&A”) provides a historical and prospective narrative on the Company’s financial condition and results of operations. This interim MD&A should be read in conjunction with the MD&A in Corning’s 2019 Form 10-K. The various sections of this MD&A contain forward-looking statements that involve risks and uncertainties. Words such as “anticipates,” “expects,” “intends,” “plans,” “goals,” “believes,” “seeks,” “estimates,” “continues,” “may,” “will,” “should,” and variations of such words and similar expressions are intended to identify such forward-looking statements. In addition, any statements that refer to projections of the Company’s future financial performance, anticipated growth and trends in the businesses, uncertain events or assumptions, and other characterizations of future events or circumstances are forward-looking statements. Such statements are based on current expectations and could be affected by the uncertainties and risk factors described throughout this filing and particularly in “Risk Factors” in Part I, Item 1A of Corning’s 2019 Form 10-K, and as may be updated in the Forms 10-Q. Actual results may differ materially, and these forward-looking statements do not reflect the potential impact of any divestitures, mergers, acquisitions, or other business combinations that had not been completed as of September 30, 2020.

MD&A includes the following sections:

- Overview
- Results of Operations
- Core Performance Measures
- Reportable Segments
- Capital Resources and Liquidity
- Critical Accounting Estimates
- Environment
- Forward-Looking Statements

OVERVIEW

In response to the COVID-19 pandemic and the ensuing economic uncertainty, including changing market conditions, the Company has and will continue to focus on three core priorities: preserving the financial health of the Company; protecting employees and communities; and delivering on customer commitments.

On September 9, 2020, HSG acquired DuPont’s TCS manufacturing assets, which was determined to be a business and recorded as a business combination. The fair value of the purchase price was \$255 million. In conjunction with this acquisition, HSG settled the TCS Settlement for a contractual amount of \$175 million, related to a pre-existing long-term supply agreement with DuPont with a fair value of \$200 million, resulting in a pre-tax loss of \$81 million, recorded in equity in (losses) earnings of affiliated companies in Corning’s consolidated statements of income for the three and nine months ended September 30, 2020.

Subsequent to these transactions, HSG redeemed DuPont’s entire ownership interest in HSG for \$250 million. As a result of the change in control, Corning recorded a pre-tax gain of \$498 million on its previously held equity investment in HSG.

Refer to Note 3 (Investments) and Note 4 (HSG Transactions) to the consolidated financial statements for more information.

Summary of results for the three and nine months ended September 30, 2020

In the third quarter, net sales were \$3,001 million, compared to \$2,934 million during the same period in 2019, a net increase of \$67 million, or 2%. Changes in net sales were as follows:

- Display Technologies' net sales increased by \$34 million or 4%, largely due to volume growth of approximately 10%, partially offset by price declines;
- Specialty Materials' net sales increased by \$107 million primarily driven by strong demand for premium glasses in support of second-half customer launches, growth in IT products due to work and study from home trends, as well as demand for semiconductor equipment products;
- Optical Communications' net sales declined \$98 million, as sales volumes declined for carrier products by \$29 million and enterprise products by \$69 million, due to general market weakness and capital spending reductions by several major customers;
- Net sales for Environmental Technologies decreased \$18 million, as production facilities of vehicle manufacturers were temporarily shut down in key markets, with sales improving 68% sequentially in the three months ended September 30, 2020, as vehicle manufacturing resumed;
- Net sales for Life Sciences declined by \$33 million, largely driven by the ramp-up of a new distribution center in North America, which has proven to be more difficult than expected in the midst of a pandemic; and
- Net sales for "All Other" increased by \$46 million, primarily driven by the consolidation of HSG sales of \$31 million as of September 9, 2020, and increased sales in the Company's emerging businesses.

Net sales for the nine months ended September 30, 2020 were \$7,953 million, compared to \$8,686 million, during the same period in 2019, a net decrease of \$733 million, or 8%. Changes in net sales were as follows:

- Display Technologies' net sales decreased by \$128 million or 5%, largely driven by price decreases in the mid-single digits in percentage terms, partially offset by volume increases in the low-single digits in percentage terms;
- The negative impact of a cumulative adjustment recorded during the first quarter of 2020 to reduce revenue in the amount of \$105 million. The adjustment was associated with a previously recorded commercial benefit asset, reflected as a prepayment, to a customer with a long-term supply agreement that is exiting its production of LCD panels;
- Optical Communications' net sales declined \$574 million, as sales volumes declined for carrier products by \$313 million and enterprise products by \$261 million, due to general market weakness and capital spending reductions by several major customers;
- Net sales for Environmental Technologies decreased \$200 million, as production facilities of vehicle manufacturers were temporarily shut down during the first half of 2020 in key markets;
- Net sales in the Life Sciences segment decreased by \$35 million, primarily driven by lab closures due to the COVID-19 pandemic and difficulty ramping-up a new distribution center in North America in the midst of a pandemic, more than offsetting strong demand for test kit consumables and other products to address the pandemic;
- Net sales increases in the Specialty Materials segment in the amount of \$198 million, primarily driven by strong demand for premium glasses in support of second-half customer launches, growth in IT products due to work and study from home trends, as well as demand for semiconductor equipment products; and
- Net sales for "All Other" increased by \$58 million, primarily driven by the consolidation of HSG sales of \$31 million as of September 9, 2020, and increased sales in the Company's emerging businesses.

In the third quarter of 2020, Corning generated net income of \$427 million, or \$0.48 per share, compared to net income of \$337 million, or \$0.38 per share, for the same period in 2019. The increase in net income of \$90 million, was primarily driven by the following items (amounts presented after-tax):

- An after-tax gain recorded on a previously held equity investment in HSG of \$387 million; and
- Higher segment net income of \$54 million and \$11 million for the Specialty Materials and Display Technologies segments, respectively.

The positive impacts to net income, outlined above, were partially offset by the following items:

- Translated earnings contract gains in the current period were \$142 million lower than prior year gains;
- Higher costs for litigation and environmental reserves of \$91 million;
- Lower equity in earnings of affiliated companies of \$66 million, primarily related to HSG's settlement of a long-term supply contract in conjunction with its acquisition of TCS on September 9, 2020;
- Translation gains on Japanese-yen denominated debt in the current period were \$39 million lower than prior period losses; and
- Lower segment net income of \$12 million, \$10 million and \$13 million for the Optical Communications, Environmental Technologies, and Life Sciences segments, respectively.

Diluted earnings per share increased by \$0.10 per share when compared to the third quarter of 2019, driven by the increase in net income described above, and partially attributable to the repurchase of 12 million shares of common stock over the last twelve months.

In the nine months ended September 30, 2020, Corning generated a net income of \$260 million, or \$0.24 per share, compared to a net income of \$928 million, or \$1.03 per share, for the same period in 2019. The decrease in net income of \$668 million, was primarily driven by the following items (amounts presented after-tax):

- Higher costs of \$170 million for an after-tax asset impairment loss related to investments in research and development programs within “All Other”;
- Higher costs of \$203 million, primarily driven by severance and capacity realignment costs for the Display Technologies and Specialty Materials segments;
- Lower segment net income of \$106 million, \$202 million and \$95 million for the Display Technologies, Optical Communications and Environmental Technologies segments, respectively;
- Lower translated earnings contract gains of \$130 million;
- Higher costs for litigation and environmental reserves of \$111 million;
- Lower equity in earnings of affiliated companies of \$57 million, primarily related to HSG’s settlement of a long-term supply contract in conjunction with its acquisition of TCS on September 9, 2020;
- The negative impact of a cumulative adjustment recorded during the first quarter of 2020 to reduce revenue in the amount of \$105 million. The adjustment was associated with a previously recorded commercial benefit asset, reflected as a prepayment, to a customer with a long-term supply agreement that is exiting its production of LCD panels;
- The net negative impact of discrete tax items and other tax adjustments of \$39 million, primarily due to foreign valuation allowances on deferred tax assets, changes in tax law, partially offset by changes in income tax reserves, net-operating losses carry back under CARES Act and changes in tax laws; and
- Larger losses on Japanese yen-denominated debt of \$30 million.

The negative impacts to net income, outlined above, were partially offset by the following items:

- An after-tax gain recorded on a previously held equity investment in HSG of \$387 million;
- Higher segment net income of \$79 million for the Specialty Materials segment; and
- Pension mark-to-market adjustment was \$20 million lower than the comparative period expense.

Diluted earnings per share decreased by \$0.79 per share when compared to the nine months ended September 30, 2019, driven by the decrease in net income described above, and partially attributable to the repurchase of 12 million shares of common stock over the last twelve months.

The translation impact of fluctuations in foreign currency exchange rates, including the impact of hedges realized in the current quarter, had a positive impact of \$16 million and \$39 million, respectively, on Corning’s consolidated net income in the three and nine months ended September 30, 2020, when compared to the same periods in 2019.

2020 Corporate Outlook

Given the economic uncertainty and disruption created by COVID-19, the Company withdrew its full-year 2020 guidance during the first quarter of this year. In response to the pandemic, the Company has and will continue to focus its actions on three core priorities: preserving the financial strength of the Company, protecting employees and communities, and delivering on customer commitments. The Company has taken, and will continue to take, aggressive actions to mitigate the economic impact of the pandemic.

During the third quarter of 2020, the Company continued to position itself to emerge even stronger from the global health crisis. In anticipation of lower sales, we maintained tight control on costs and a lower level of capital spending. We expect to maintain a strong cash balance, generate positive free cash flow and maintain dividend payments. We are committed to preserving the financial strength of the Company and remain confident in its long-term growth prospects.

RESULTS OF OPERATIONS

Selected highlights from operations are as follows (in millions):

	Three months ended September 30,		% change	Nine months ended September 30,		% change
	2020	2019	20 vs. 19	2020	2019	20 vs. 19
Net sales	\$ 3,001	\$ 2,934	2%	\$ 7,953	\$ 8,686	(8%)
Gross margin	\$ 1,001	\$ 1,017	(2%)	\$ 2,318	\$ 3,181	(27%)
(gross margin %)	33%	35%		29%	37%	
Selling, general and						
administrative expenses	\$ 480	\$ 369	30%	\$ 1,276	\$ 1,184	8%
(as a % of net sales)	16%	13%		16%	14%	
Research, development and						
engineering expenses	\$ 231	\$ 255	(9%)	\$ 922	\$ 753	22%
(as a % of net sales)	8%	9%		12%	9%	
Translated earnings contract						
(loss) gain, net	\$ (100)	\$ 86	*	\$ 5	\$ 163	(97%)
(as a % of net sales)	(3%)	3%		0%	2%	
Transaction-related gain, net	\$ 498		*	\$ 498		*
(as a % of net sales)	17%			6%		
Income before income taxes	\$ 450	\$ 408	10%	\$ 293	\$ 1,199	(76%)
(as a % of net sales)	15%	14%		4%	14%	
Provision for income taxes	\$ (23)	\$ (71)	68%	\$ (33)	\$ (271)	88%
(as a % of net sales)	(1%)	(2%)		(0%)	(3%)	
Net income attributable to						
Corning Incorporated	\$ 427	\$ 337	27%	\$ 260	\$ 928	(72%)
(as a % of net sales)	14%	11%		3%	11%	

* Not meaningful

Segment Net Sales

The following table presents segment net sales by reportable segment and All Other (in millions):

	Three months ended		%	Nine months ended		%
	September 30,		change	September 30,		change
	2020	2019	20 vs. 19	2020	2019	20 vs. 19
Display Technologies	\$ 827	\$ 793	4%	\$ 2,331	\$ 2,459	(5%)
Optical Communications	909	1,007	(10%)	2,587	3,161	(18%)
Specialty Materials	570	463	23%	1,339	1,141	17%
Environmental Technologies	379	397	(5%)	925	1,125	(18%)
Life Sciences	223	256	(13%)	724	759	(5%)
All Other	99	53	87%	218	160	36%
Net sales of reportable segments and All Other	3,007	2,969	1%	8,124	8,805	(8%)
Impact of foreign currency movements (1)	(6)	(35)	83%	(66)	(119)	45%
Cumulative adjustment related to customer contract (2)				(105)		*
Consolidated net sales	\$ 3,001	\$ 2,934	2%	\$ 7,953	\$ 8,686	(8%)

(1) This amount primarily represents the impact of foreign currency adjustments in the Display Technologies, Environmental Technologies, and Life Sciences segments.

(2) Amount represents the negative impact of a cumulative adjustment recorded during the first quarter of 2020 to reduce revenue in the amount of \$105 million. The adjustment was associated with a previously recorded commercial benefit asset, reflected as a prepayment, to a customer with a long-term supply agreement that is exiting its production of LCD panels.

* Not meaningful

For the three months ended September 30, 2020, net sales of operating segments increased by \$38 million, or 1%, when compared to the same period in 2019. The primary sales drivers by segment were as follows:

- Display Technologies' net sales increased by \$34 million or 4%, largely due to volume growth of approximately 10%, partially offset by price declines;
- Specialty Materials' net sales increased by \$107 million, primarily driven by strong demand for premium glasses in support of customer launches and growth in IT products due to work and study from home trends;
- Optical Communications' net sales declined \$98 million, as sales volumes declined for carrier products by \$29 million and enterprise products by \$69 million, due to general market weakness and capital spending reductions by several major customers;
- Net sales for Environmental Technologies decreased \$18 million, as production facilities of vehicle manufacturers continued to ramp back up, with sales improving 68% sequentially in the three months ended September 30, 2020;
- Net sales for Life Sciences declined by \$33 million, largely driven by the ramp-up of a new distribution center in North America, which has proven to be more difficult than expected in the midst of a pandemic; and
- Net sales for "All Other" increased by \$46 million, primarily driven by the consolidation of HSG sales of \$31 million as of September 9, 2020, and increased sales in the Company's emerging businesses.

For the nine months ended September 30, 2020, net sales of operating segments decreased by \$681 million, or 8%, when compared to the same period in 2019. The primary sales drivers by segment were as follows:

- Display Technologies' net sales decreased by \$128 million or 5%, largely driven by price decreases in the mid-single digits in percentage terms, partially offset by volume increases in the low-single digits in percentage terms;
- Optical Communications' net sales declined \$574 million, as sales volumes declined for carrier products by \$313 million and enterprise products by \$261 million, due to general market weakness and capital spending reductions by several major customers;
- Net sales for Environmental Technologies decreased \$200 million, as production facilities of vehicle manufacturers were temporarily shut down during the first half of 2020 in key markets;
- Net sales for Life Sciences declined by \$35 million, primarily driven by delayed lab openings and lab underutilization due to the COVID-19 pandemic, as well as delays in the ramp-up of a new distribution center in North America more than offsetting strong demand for test kit consumables and other products to address the pandemic;
- Net sales increases in the Specialty Materials segment in the amount of \$198 million, primarily driven by strong demand for premium glasses in support of second-half customer launches, growth in IT products due to work and study from home trends, as well as demand for semiconductor equipment products; and
- Net sales for "All Other" increased by \$58 million, primarily driven by the consolidation of HSG sales of \$31 million as of September 9, 2020, and increased sales in the Company's emerging businesses.

Movements in foreign exchange rates positively impacted Corning's consolidated net sales by \$31 million and \$57 million, respectively, in the three and nine months ended September 30, 2020, when compared to the same periods in 2019.

Cost of Sales

The types of expenses included in the cost of sales line item are: raw materials consumption, including direct and indirect materials; salaries, wages and benefits; depreciation and amortization; production utilities; production-related purchasing; warehousing (including receiving and inspection); repairs and maintenance; inter-location inventory transfer costs; production and warehousing facility property insurance; rent for production facilities; and other production overhead.

Gross Margin

In the three and nine months ended September 30, 2020, gross margin decreased by \$16 million, or 2% and \$863 million, or 27%, respectively. Gross margin as a percentage of sales declined by 2 percentage points and 8 percentage points, respectively, for the three and nine months ended September 30, 2020, respectively. Negative impacts to gross margin were primarily driven by accelerated depreciation and severance charges for the Display Technologies segment, asset write-offs in the Display Technologies and Special Materials segments, and lower volumes in Display Technologies, Optical Communications and Environmental Technologies for the nine months ended September 30, 2020.

Movements in foreign exchange rates had a positive impact of \$21 million and \$66 million on Corning's consolidated gross margin in the three and nine months ended September 30, 2020, when compared to the same periods in 2019.

Selling, General and Administrative Expenses

In the three and nine months ended September 30, 2020, selling, general and administrative expenses increased by \$111 million, or 30%, and \$92 million, or 8%, respectively, mainly due to higher litigation and environmental expenses.

The types of expenses included in the selling, general and administrative expenses line item are: salaries, wages and benefits; stock-based compensation expense; travel; sales commissions; professional fees; and depreciation and amortization, utilities and rent for administrative facilities.

Research, Development and Engineering Expenses

For the three and nine months ended September 30, 2020, research, development and engineering expenses decreased by \$24 million, or 9%, and increased by \$169 million, or 22%, respectively, when compared to the same periods last year. Cost containment measures resulted in lower spending in the most recent quarter and the year-to-date increase was primarily driven by pre-tax asset impairment losses of \$211 million and \$6 million, related to the reassessment and reprioritization of research and development programs and goodwill, respectively, within the "All Other". Given the current economic environment and market opportunities, Corning has rescoped and significantly reduced its investment in these research and development programs. As a percentage of sales, these expenses were 1% lower and 3% higher when compared to the same periods last year.

Restructuring, Impairment, and Other Charges and Credits

In the first nine months of 2020, and in response to uncertain global economic conditions, Corning undertook actions to transform the Company's cost structure and improve operational efficiency. During the three and nine months ended September 30, 2020, Corning recorded restructuring, impairment, and other charges and credits of \$171 million and \$733 million, respectively.

In the second quarter of 2020, the Company implemented a corporate-wide workforce reduction program. Severance charges were primarily incurred to facilitate realignment of capacity in the Asia regions for the Display Technologies segment, optimize the Optical Communications segment and contain corporate costs. For the three months and nine months ended September 30, 2020, severance charges were \$6 million and \$141 million, respectively. As of September 30, 2020, and December 31, 2019, the unpaid severance liabilities of \$60 million and \$44 million are expected to be substantially completed within the next twelve months.

Corning incurred a long-lived asset impairment loss for an asset group related to the reassessment and reprioritization of research and development programs within "All Other". Given the current economic environment and market opportunities, Corning has rescoped and significantly reduced its investment in these research and development programs. Corning performed the impairment analysis for the long-lived asset group using discounted cash flow projections and recorded a pre-tax asset impairment loss of \$195 million in the second quarter of 2020. During the third quarter of 2020, the Company further reduced investments in these research and development programs and reassessed the business plans. As a result, an additional impairment loss of \$22 million was recorded, inclusive of an insignificant amount of goodwill, to reduce the book value to the fair value of the asset group, which resulted in a total pre-tax asset impairment loss of \$217 million for the nine months ended September 30, 2020.

Capacity realignment charges of \$96 million and \$245 million, respectively, including accelerated depreciation and asset disposals, were related to the exit of certain facilities and other exit activities in the Display Technologies and Specialty Materials segments. Other charges and credits of \$47 million and \$130 million, respectively, were related to other exit activities.

Refer to Note 2 (Restructuring, Impairment and Other Charges and Credits) to the consolidated financial statements for additional information on restructuring activities and impairment.

Equity in (Losses) Earnings of Affiliated Companies

The following provides a summary of equity in (losses) earnings of affiliated companies (in millions):

	Three months ended September 30,		Nine months ended September 30,	
	2020	2019	2020	2019
HSG (1)	\$ (77)	\$ 21	\$ 22	\$ 81
All other	1	2	(5)	
Total equity (losses) earnings	\$ (76)	\$ 23	\$ 17	\$ 81

- (1) The three and nine months ended September 30, 2020, only include HSG's results of operations through September 8, 2020. Immediately following the Redemption, Corning began consolidating HSG on September 9, 2020.

HSG's net income for the period ended September 8, 2020, included a pre-tax gain recorded in the second quarter of 2020, related to the settlement of a long-term supply agreement of approximately \$165 million, partially offset by an inventory provision of approximately \$44 million associated with the settlement of the agreement. Prior to the Redemption, in the third quarter of 2020, HSG recorded a pre-tax loss of \$200 million resulting from the TCS Settlement. Corning's share of the pre-tax loss was \$81 million. Accordingly, Corning's share of the net impact was an equity loss of \$19 million.

Refer to Note 4 (HSG Transactions) to the consolidated financial statements for additional information.

Translated earnings contract (loss) gain, net

Included in the line item translated earnings contract (loss) gain, net, is the impact of foreign currency hedges which hedge translation exposure arising from movements in the Japanese yen, South Korean won, new Taiwan dollar, euro, Chinese yuan and British pound and its impact on net income. The following table provides detailed information on the impact of translated earnings contract gains and losses:

	Three months ended September 30, 2020		Three months ended September 30, 2019		Change 2020 vs. 2019	
	Income before taxes	Net income	Income before taxes	Net income	Income before taxes	Net income
(in millions)						
Hedges related to translated earnings:						
Realized loss, net (1)	\$ (7)	\$ (5)	\$ (7)	\$ (6)	\$	1
Unrealized (loss) gain, net (2)	(93)	(73)	93	72	(186)	(145)
Total translated earnings contract (loss) gain, net	\$ (100)	\$ (78)	\$ 86	\$ 66	\$ (186)	\$ (144)

	Nine months ended September 30, 2020		Nine months ended September 30, 2019		Change 2020 vs. 2019	
	Income before taxes	Net income	Income before taxes	Net income	Income before taxes	Net income
(in millions)						
Hedges related to translated earnings:						
Realized (loss) gain, net (1)	\$ (9)	\$ (6)	\$ 8	\$ 7	(17)	(13)
Unrealized gain, net (2)	14	10	155	120	(141)	(110)
Total translated earnings contract gain, net	\$ 5	\$ 4	\$ 163	\$ 127	\$ (158)	\$ (123)

- (1) Includes before tax realized losses related to the expiration of option contracts for the three and nine months ended September 30, 2020 and 2019 of \$5 million and \$19 million, respectively, and \$8 million and \$31 million, respectively. Activity reflected in operating activities in the consolidated statements of cash flows.
- (2) The impact to income was primarily driven by yen-denominated hedges of translated earnings.

The gross notional value outstanding on translated earnings contracts and foreign currency cash flow hedges were as follows (in billions):

	September 30, 2020	December 31, 2019
Japanese yen-denominated translated earnings contracts	\$ 7.7	\$ 10.2
South Korean won-denominated translated earnings contracts	0.5	0.4
Euro-denominated translated earnings contracts	0.6	1.3
Other translated earnings contracts	0.1	0.3
Total gross notional value outstanding for translated earnings contracts	8.9	12.2
Japanese yen-denominated foreign currency cash flow hedges	0.6	1.5
Other foreign currency cash flow hedges	0.2	0.6
Total gross notional value for foreign currency cash flow hedges	0.8	2.1
Total gross notional value outstanding	\$ 9.7	\$ 14.3

Income Before Income Taxes

The translation impact of fluctuations in foreign currency exchange rates, including the impact of hedges realized in the current quarter, positively impacted Corning's consolidated income before income taxes by \$17 million and \$46 million in the three and nine months ended September 30, 2020, when compared to the same periods in 2019.

Provision for Income Taxes

The provision for income taxes and the related effective income tax rates are as follows (in millions):

	Three months ended September 30,		Nine months ended September 30,	
	2020	2019	2020	2019
Provision for income taxes	\$ (23)	\$ (71)	\$ (33)	\$ (271)
Effective tax rate	5.1%	17.4%	11.3%	22.6%

For the three months ended September 30, 2020, the effective income tax rate differed from the United States ("U.S.") statutory rate of 21%, primarily due to an estimate of income tax benefits generated by a current year net operating loss that will be carried-back to prior years as allowed under the CARES Act and changes of estimates based on the final U.S. tax return which were partially offset by additional income tax reserves. For the nine months ended September 30, 2020, the effective income tax rate differed from the U.S. statutory rate of 21% primarily due to an estimate of income tax benefits generated by a current year net operating loss that will be carried-back to prior years as allowed under the CARES Act and changes of estimates based on the final U.S. tax return which were partially offset by income tax reserves, an adjustment to the permanently reinvested foreign income position and foreign valuation allowances on deferred tax assets.

Prior to the HSG Transactions, Corning had a deferred tax asset resulting from its equity method investment in HSG. As a result of the HSG Transactions, Corning adjusted its deferred taxes by approximately \$117 million to reflect the impacts of the HSG Transactions, specifically the pre-tax gain of \$498 million on its previously held equity investment. The resulting net deferred tax liability is approximately \$9 million at September 30, 2020.

For the three months ended September 30, 2019, the effective income tax rate differed from the U.S. statutory rate of 21% primarily due to an increase in the estimated impact of BEAT offset by changes on estimates based on the U.S. Federal 2018 tax return filed in October 2019, primarily due to tax reform. For the nine months ended September 30, 2019, the effective income tax rate differed from the U.S. statutory rate of 21% primarily due to an increase in the estimated impact of BEAT offset by changes on estimated based on the U.S. Federal 2018 tax return filed in October 2019, primarily due to tax reform, additional net tax expense of \$86 million driven by changes to tax reserves and the release of foreign valuation allowances on deferred tax assets.

Refer to Note 8 (Income Taxes) to the consolidated financial statements for additional information.

Net Income Attributable to Corning Incorporated

Net income and per share data is as follows (in millions, except per share amounts):

	Three months ended September 30,		Nine months ended September 30,	
	2020	2019	2020	2019
Net income attributable to Corning Incorporated	\$ 427	\$ 337	\$ 260	\$ 928
Net income attributable to Corning Incorporated used in				
basic earnings per common share calculation (1)	\$ 403	\$ 313	\$ 187	\$ 855
Net income attributable to Corning Incorporated used in				
diluted earnings per common share calculation (1)	\$ 427	\$ 337	\$ 187	\$ 928
Basic earnings per common share	\$ 0.53	\$ 0.40	\$ 0.25	\$ 1.10
Diluted earnings per common share	\$ 0.48	\$ 0.38	\$ 0.24	\$ 1.03
Weighted-average common shares outstanding - basic	760	775	760	780
Weighted-average common shares outstanding - diluted	889	897	768	903

(1) Refer to Note 10 (Earnings per Common Share) to the consolidated financial statements for additional information.

Comprehensive Income

For the three months ended September 30, 2020, comprehensive income increased by \$645 million when compared to the same period in 2019, primarily due to the following:

- An increase in net income of \$90 million;
- An increase in the gain on foreign currency translation adjustments in the amount of \$521 million, primarily driven by the South Korean won, Japanese yen, Chinese yuan, and euro; and
- The positive impact of a change to net unrealized gains on designated hedges of \$33 million.

For the nine months ended September 30, 2020, comprehensive income decreased by \$254 million when compared to the same period in 2019, primarily due to the following:

- A decrease in net income of \$668 million; and
- The negative impact of a change to net unrealized losses on designated hedges of \$11 million.

These losses were partially offset by the following:

- An increase in the gain on foreign currency translation adjustments in the amount of \$386 million, primarily driven by the South Korean won, Chinese yuan, euro, and Japanese yen; and
- The absence of \$53 million prior period unamortized actuarial losses related to the adoption of the new standard for reclassification of stranded tax effects in accumulated other comprehensive income.

Refer to Note 16 (Shareholders' Equity) to the consolidated financial statements for additional information.

CORE PERFORMANCE MEASURES

In managing the Company and assessing financial performance, certain measures provided by the consolidated financial statements are adjusted to exclude specific items to report core performance measures. These items include gains and losses on translated earnings contracts, acquisition-related costs, certain discrete tax items and other tax-related adjustments, restructuring, impairment losses, and other charges and credits, certain litigation-related expenses, pension mark-to-market adjustments and other items which do not reflect on-going operating results of the Company or its equity affiliates. Corning utilizes constant-currency reporting for the Display Technologies, Environmental Technologies, Specialty Materials and Life Sciences segments for the Japanese yen, South Korean won, Chinese yuan, new Taiwan dollar and the euro. The Company believes that the use of constant-currency reporting allows investors to understand the results without the volatility of currency fluctuations and reflects the underlying economics of the translated earnings contracts used to mitigate the impact of changes in currency exchange rates on earnings and cash flows. Corning also believes that reporting core performance measures provides investors greater transparency to the information used by the management team to make financial and operational decisions.

Core performance measures are not prepared in accordance with GAAP. We believe investors should consider these non-GAAP measures in evaluating results as they are more indicative of core operating performance and how management evaluates operational results and trends. These measures are not, and should not be viewed as a substitute for, GAAP reporting measures. With respect to the Company's outlook for future periods, it is not possible to provide reconciliations for these non-GAAP measures because the Company does not forecast the movement of foreign currencies against the U.S. dollar, or other items that do not reflect ongoing operations, nor does it forecast items that have not yet occurred or are out of the Company's control. As a result, the Company is unable to provide outlook information on a GAAP basis.

For a reconciliation of non-GAAP performance measures to their most directly comparable GAAP financial measure, please see "Reconciliation of Non-GAAP Measures".

RESULTS OF OPERATIONS – CORE PERFORMANCE MEASURES

Selected highlights from continuing operations, excluding certain items, follow (in millions):

	Three months ended September 30,		% change	Nine months ended September 30,		% change
	2020	2019	20 vs. 19	2020	2019	20 vs. 19
Core net sales	\$ 3,007	\$ 2,969	1%	\$ 8,124	\$ 8,805	(8)%
Core equity in earnings of affiliated companies	\$ 9	\$ 23	(61)%	\$ 78	\$ 77	1%
Core net income	\$ 380	\$ 397	(4)%	\$ 775	\$ 1,172	(34)%

Core Net Sales

Core net sales are consistent with net sales by reportable segment. Net sales by reportable segment are presented below (in millions):

	Three months ended September 30,		% change	Nine months ended September 30,		% change
	2020	2019	20 vs. 19	2020	2019	20 vs. 19
Display Technologies	\$ 827	\$ 793	4%	\$ 2,331	\$ 2,459	(5)%
Optical Communications	909	1,007	(10)%	2,587	3,161	(18)%
Specialty Materials	570	463	23%	1,339	1,141	17%
Environmental Technologies	379	397	(5)%	925	1,125	(18)%
Life Sciences	223	256	(13)%	724	759	(5)%
All Other	99	53	87%	218	160	36%
Net sales of reportable segments and All Other	3,007	2,969	1%	8,124	8,805	(8)%
Impact of foreign currency movements (1)	(6)	(35)	83%	(66)	(119)	45%
Cumulative adjustment related to customer contract (2)				(105)		*
Consolidated net sales	\$ 3,001	\$ 2,934	2%	\$ 7,953	\$ 8,686	(8)%

(1) This amount primarily represents the impact of foreign currency adjustments in the Display Technologies, Environmental Technologies and Life Sciences segments.

(2) Amount represents the negative impact of a cumulative adjustment recorded during the first quarter of 2020 to reduce revenue in the amount of \$105 million. The adjustment was associated with a previously recorded commercial benefit asset, reflected as a prepayment, to a customer with a long-term supply agreement that is exiting its production of LCD panels.

* Not meaningful

Core Equity in Earnings of Affiliated Companies

The following provides a summary of core equity in earnings of affiliated companies (in millions):

	Three months ended September 30,				Nine months ended September 30,			
	2020		2019		2020		2019	
HSG (1)	\$	7	\$	21	\$	82	\$	71
All other		2		2		(4)		6
Total core equity earnings	\$	9	\$	23	\$	78	\$	77

(1) The three and nine months ended September 30, 2020, only include HSG's results of operations through September 8, 2020. Immediately following the Redemption, Corning began consolidating HSG on September 9, 2020.

Core Net Income

In the three months ended September 30, 2020, Corning generated core net income of \$380 million, or \$0.43 per share, compared to core net income generated in the three months ended September 30, 2019, of \$397 million, or \$0.44 per share. The decrease of \$17 million was driven by the following items:

- Higher corporate expenses of \$67 million, largely driven by selling, general and administrative expenses; and
- Lower segment net income of \$12 million, \$10 million and \$13 million for the Optical Communications, Environmental Technologies, and Life Sciences segments, respectively.

The decreases outlined above were partially offset by:

- Higher segment net income of \$54 million and \$11 million for the Specialty Materials and Display Technologies segments, respectively; and
- Higher net income of \$20 million within "All Other".

In the nine months ended September 30, 2020, Corning generated core net income of \$775 million, or \$0.88 per share, compared to core net income generated in the nine months ended September 30, 2019, of \$1,172 million, or \$1.30 per share. The decrease of \$397 million was driven by the following items:

- Lower earnings across Display Technologies, Optical Communications, Environmental Technologies and Life Sciences segments of \$106 million, \$202 million \$95 million and \$15 million, respectively, and
- Higher corporate expenses of \$83 million largely driven by selling, general and administrative expenses.

The decreases outlined above were partially offset by:

- Higher segment net income of \$79 million in Specialty Materials; and
- Higher net income of \$25 million within "All Other".

Included in core net income for the three and nine months ended September 30, 2020 and 2019, is net periodic pension expense in the amounts of \$13 million and \$38 million, respectively, and \$22 million and \$64 million, respectively.

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Core Earnings per Common Share

The following table sets forth the computation of core basic and core diluted earnings per common share (in millions, except per share amounts):

	Three months ended September 30,		Nine months ended September 30,	
	2020	2019	2020	2019
Core net income attributable to Corning Incorporated	\$ 380	\$ 397	\$ 775	\$ 1,172
Less: Series A convertible preferred stock dividend	24	24	73	73
Core net income available to common stockholders - basic	356	373	702	1,099
Add: Series A convertible preferred stock dividend	24	24	73	73
Core net income available to common stockholders - diluted	\$ 380	\$ 397	\$ 775	\$ 1,172
Weighted-average common shares outstanding - basic	760	775	760	780
Effect of dilutive securities:				
Stock options and other dilutive securities	14	7	8	8
Series A convertible preferred stock	115	115	115	115
Weighted-average common shares outstanding - diluted	889	897	883	903
Core basic earnings per common share	\$ 0.47	\$ 0.48	\$ 0.92	\$ 1.41
Core diluted earnings per common share	\$ 0.43	\$ 0.44	\$ 0.88	\$ 1.30

Reconciliation of Non-GAAP Measures

Corning utilizes certain financial measures and key performance indicators that are not calculated in accordance with GAAP to assess financial and operating performance. A non-GAAP financial measure is defined as a numerical measure of a company's financial performance that (i) excludes amounts, or is subject to adjustments that have the effect of excluding amounts, that are included in the comparable measure calculated and presented in accordance with GAAP in the consolidated statements of income or statements of cash flows, or (ii) includes amounts, or is subject to adjustments that have the effect of including amounts, that are excluded from the comparable measure as calculated and presented in accordance with GAAP in the consolidated statements of income or statements of cash flows.

Core net sales, core equity in earnings of affiliated companies and core net income are non-GAAP financial measures utilized by management to analyze financial performance without the impact of items that are driven by general economic conditions and events that do not reflect the underlying fundamentals and trends in the Company's operations.

The following tables reconcile the non-GAAP financial measures to their most directly comparable GAAP financial measure (amounts in millions except percentages and per share amounts):

	Three months ended September 30, 2020					
	Net sales	Equity (losses) earnings	Income before income taxes	Net income	Effective tax rate (a)	Per share
As reported - GAAP	\$ 3,001	\$ (76)	\$ 450	\$ 427	5.1%	\$ 0.48
Constant-currency adjustment (1)	6			(14)		(0.02)
Translation loss on Japanese yen-denominated debt (2)			39	31		0.03
Translated earnings contract loss (3)			99	77		0.09
Acquisition-related costs (4)			47	37		0.04
Discrete tax items and other tax-related adjustments (5)				(58)		(0.07)
Litigation, regulatory and other legal matters (6)			83	72		0.08
Restructuring, impairment and other charges and credits (7)			171	129		0.15
Equity in losses of affiliated companies (9)		85	85	66		0.07
Transaction-related gain, net (11)			(498)	(387)		(0.44)
Core performance measures	\$ 3,007	\$ 9	\$ 476	\$ 380	20.2%	\$ 0.43

(a) Based upon statutory tax rates in the specific jurisdiction for each event.

	Three months ended September 30, 2019					
	Net sales	Equity earnings	Income before income taxes	Net income	Effective tax rate (a)	Per share
As reported - GAAP	\$ 2,934	\$ 23	\$ 408	\$ 337	17.4%	\$ 0.38
Constant-currency adjustment (1)	35		20	63		0.07
Translation gain on Japanese yen-denominated debt (2)			(11)	(8)		(0.01)
Translated earnings contract gain (3)			(84)	(65)		(0.07)
Acquisition-related costs (4)			31	22		0.02
Discrete tax items and other tax-related adjustments (5)				(51)		(0.06)
Litigation, regulatory and other legal matters (6)			(24)	(19)		(0.02)
Restructuring, impairment and other charges and credits (7)			148	118		0.13
Core performance measures	\$ 2,969	\$ 23	\$ 488	\$ 397	18.6%	\$ 0.44

(a) Based upon statutory tax rates in the specific jurisdiction for each event.

See Part 1, Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations, Results of Operations – Core Performance Measures, Reconciliation of Non-GAAP Measures, "Items which we exclude from GAAP measures to report core performance measures" for the descriptions of the footnoted reconciling items.

Nine months ended September 30, 2020						
	Net sales	Equity earnings	Income before income taxes	Net income	Effective tax rate (a)	Per share
As reported – GAAP	\$ 7,953	\$ 17	\$ 293	\$ 260	11.3%	\$ 0.24
Constant-currency adjustment (1)	66		25	(33)		(0.04)
Translation loss on Japanese yen-denominated debt (2)			50	39		0.05
Translated earnings contract loss (3)			6	5		0.01
Acquisition-related costs (4)			104	79		0.10
Discrete tax items and other tax-related adjustments (5)				19		0.02
Litigation, regulatory and other legal matters (6)			108	92		0.12
Restructuring, impairment and other charges and credits (7)			733	549		0.71
Cumulative adjustment related to customer contract (8)	105		105	105		0.14
Equity in losses of affiliated companies (9)		61	61	48		0.06
Pension mark-to-market adjustment (10)			(2)	(1)		(0.00)
Transaction-related gain, net (11)			(498)	(387)		(0.50)
Core performance measures	\$ 8,124	\$ 78	\$ 985	\$ 775	21.3%	\$ 0.88

(a) Based upon statutory tax rates in the specific jurisdiction for each event.

Nine months ended September 30, 2019						
	Net sales	Equity earnings	Income before income taxes	Net income	Effective tax rate (a)	Per share
As reported - GAAP	\$ 8,686	\$ 81	\$ 1,199	\$ 928	22.6%	\$ 1.03
Constant-currency adjustment (1)	119	1	93	137		0.15
Translation loss on Japanese yen-denominated debt (2)			10	9		0.01
Translated earnings contract gain (3)			(161)	(125)		(0.14)
Acquisition-related costs (4)			102	76		0.08
Discrete tax items and other tax-related adjustments (5)				(20)		(0.02)
Litigation, regulatory and other legal matters (6)			(24)	(19)		(0.02)
Restructuring, impairment and other charges and credits (7)		6	222	176		0.19
Equity in earnings of affiliated companies (9)		(11)	(11)	(9)		(0.01)
Pension mark-to-market adjustment (10)			24	19		0.02
Core performance measures	\$ 8,805	\$ 77	\$ 1,454	\$ 1,172	19.4%	\$ 1.30

(a) Based upon statutory tax rates in the specific jurisdiction for each event.

See Part 1, Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations, Results of Operations – Core Performance Measures, Reconciliation of Non-GAAP Measures, "Items which we exclude from GAAP measures to report core performance measures" for the descriptions of the footnoted reconciling items.

Items which we exclude from GAAP measures to arrive at core performance measures are as follows:

- (1) Constant-currency adjustment: Because a significant portion of segment revenues and expenses are denominated in currencies other than the U.S. dollar, management believes it is important to understand the impact on core net income of translating these currencies into U.S. dollars. Display Technologies' segment sales and net income are primarily denominated in Japanese yen, but also impacted by the South Korean won, Chinese yuan, and new Taiwan dollar. Environmental Technologies and Life Science segments sales and net income are impacted by the euro, Chinese yuan and Japanese yen. Presenting results on a constant-currency basis mitigates the translation impact and allows management to evaluate performance period over period, analyze underlying trends in the businesses, and establish operational goals and forecasts. We establish constant-currency rates based on internally derived management estimates which are closely aligned with the currencies we have hedged.

Constant-currency rates are as follows:

Currency	Japanese yen	Korean won	Chinese yuan	New Taiwan dollar	Euro
Rate	¥107	₩1,175	¥6.7	NT\$31	€81

- (2) Translation loss (gain) on Japanese yen-denominated debt: We have excluded the gain or loss on the translation of the yen-denominated debt to U.S. dollars.
- (3) Translated earnings contract loss (gain): We have excluded the impact of the realized and unrealized gains and losses of the Japanese yen, South Korean won, Chinese yuan, euro and new Taiwan dollar-denominated foreign currency hedges related to translated earnings, as well as the unrealized gains and losses of the British pound-denominated foreign currency hedges related to translated earnings.
- (4) Acquisition-related costs: These expenses include intangible amortization, inventory valuation adjustments and external acquisition-related deal costs.
- (5) Discrete tax items and other tax-related adjustments: These include discrete period tax items such as estimate of current year net operating loss that will be carried back to prior years as allowed under CARES Act, changes in tax law, changes of tax reserves, changes in judgement about the realizability of certain deferred tax assets and other tax-related adjustments.
- (6) Litigation, regulatory and other legal matters: Includes amounts that reflect developments in commercial litigation, intellectual property disputes, adjustments to the estimated liability for environmental-related items and other legal matters.
- (7) Restructuring, impairment and other charges and credits: This amount includes restructuring, impairment losses and other charges and credits, as well as other expenses, primarily accelerated depreciation and asset write-offs, which are not related to continuing operations and are not classified as restructuring expense.
- (8) Cumulative adjustment related to customer contract: The negative impact of a cumulative adjustment recorded during the first quarter of 2020 to reduce revenue in the amount of \$105 million. The adjustment was associated with a previously recorded commercial benefit asset, reflected as a prepayment, to a customer with a long-term supply agreement that is exiting its production of LCD panels.
- (9) Equity in losses (earnings) of affiliated companies: These adjustments relate to costs not related to continuing operations of affiliated companies, such as restructuring, impairment losses, inventory adjustments, other charges and credits and settlements under "take-or-pay" contracts, including Corning's share of HSG's settlement of its pre-existing relationship of its long-term supply contract related to the HSG's acquisition of TCS.
- (10) Pension mark-to-market adjustment: Defined benefit pension mark-to-market gains and losses, which arise from changes in actuarial assumptions and the difference between actual and expected returns on plan assets and discount rates.
- (11) Transaction-related gain, net: Amount represents the pre-tax gain recorded on a previously held equity investment in HSG.

REPORTABLE SEGMENTS

Reportable segments are as follows:

- Display Technologies – manufactures glass substrates for flat panel liquid crystal displays and other high-performance display panels.
- Optical Communications – manufactures carrier network and enterprise network components for the telecommunications industry.
- Specialty Materials – manufactures products that provide more than 150 material formulations for glass, glass ceramics and fluoride crystals to meet demand for unique customer needs.
- Environmental Technologies – manufactures ceramic substrates and filters for automotive and diesel applications.
- Life Sciences – manufactures glass and plastic labware, equipment, media, serum and reagents enabling workflow solutions for drug discovery and bioproduction.

All other businesses that do not meet the quantitative threshold for separate reporting have been grouped as “All Other.” This group is primarily comprised of the results of the pharmaceutical technologies, auto glass and new product lines and development projects, as well as certain corporate investments.

The Company obtained a controlling interest in HSG during the third quarter of 2020 and has consolidated results in “All Other” as of September 9, 2020. Refer to Note 4 (HSG Transactions) to the consolidated financial statements for additional information on this transaction.

Financial results for the reportable segments are prepared on a basis consistent with the internal disaggregation of financial information to assist the CODM in making internal operating decisions. The impact of changes in the Japanese yen, South Korean won, Chinese yuan and new Taiwan dollar are excluded from segment sales and segment net income for the Display Technologies and Specialty Materials segments. The impact of changes in the euro, Chinese yuan and Japanese yen are excluded from segment sales and segment net income for the Environmental Technologies and Life Sciences segments. Certain income and expenses are included in the unallocated amounts in the reconciliation of reportable segment net income (loss) to consolidated net income. These include items that are not used by the CODM in evaluating the results of or in allocating resources to the segments and include the following items: the impact of the translated earnings contracts; acquisition-related costs; discrete tax items and other tax-related adjustments; certain litigation, regulatory and other legal matters; restructuring, impairment losses and other charges and credits; adjustments relating to acquisitions; and other non-recurring non-operational items. Although these amounts are excluded from segment results, they are included in reported consolidated results.

Earnings of equity affiliates that are closely associated with the reportable segments are included in the respective segment’s net income (loss). Certain common expenses among reportable segments have been allocated differently than they would for stand-alone financial information. Segment net income (loss) may not be consistent with measures used by other companies.

Display Technologies

The following table provides net sales and net income for the Display Technologies segment (in millions):

	Three months ended September 30,		% change 20 vs. 19	Nine months ended September 30,		% change 20 vs. 19
	2020	2019		2020	2019	
Segment net sales	\$ 827	\$ 793	4%	\$ 2,331	\$ 2,459	(5%)
Segment net income	\$ 196	\$ 185	6%	\$ 500	\$ 606	(17%)

Net sales in the Display Technologies segment increased by \$34 million in the three months ended September 30, 2020, when compared to the prior period, primarily driven by revenue increases of 4% largely due to volume growth of approximately 10%, partially offset by price declines. Net sales for the nine months ended September 30, 2020, decreased by \$128 million when compared to the prior period, primarily due to revenue declines of 5% largely driven by price decreases in the mid-single digits in percentage terms, partially offset by volume increases in the low-single digits in percentage terms.

Net income in the Display Technologies segment increased by \$11 million and decreased by \$106 million during the three and nine months ended September 30, 2020, respectively, primarily driven by the changes in sales outlined above.

Optical Communications

The following table provides net sales and net income for the Optical Communications segment (in millions):

	Three months ended September 30,		% change	Nine months ended September 30,		% change
	2020	2019	20 vs. 19	2020	2019	20 vs. 19
Segment net sales	\$ 909	\$ 1,007	(10%)	\$ 2,587	\$ 3,161	(18%)
Segment net income	\$ 115	\$ 127	(9%)	\$ 225	\$ 427	(47%)

Optical Communications net sales declined \$98 million and \$574 million in the three and nine months ended September 30, 2020, respectively. Net sales of carrier products were \$29 million and \$313 million lower, respectively, and enterprise products were \$69 million and \$261 million lower, respectively, primarily due to general market weakness and capital spending reductions by several major customers.

Net income decreased by \$12 million and \$202 million for the three and nine months ended September 30, 2020, respectively, primarily driven by the changes in sales, outlined above. Profitability, on a year-to-date basis, was impacted by lower sales and production volumes. Profitability improved sequentially by 42% in the three months ended September 30, 2020, primarily due to continued improvements.

Specialty Materials

The following table provides net sales and net income for the Specialty Materials segment (in millions):

	Three months ended September 30,		% change	Nine months ended September 30,		% change
	2020	2019	20 vs. 19	2020	2019	20 vs. 19
Segment net sales	\$ 570	\$ 463	23%	\$ 1,339	\$ 1,141	17%
Segment net income	\$ 146	\$ 92	59%	\$ 287	\$ 208	38%

Net sales in the Specialty Materials segment increased by \$107 million and \$198 million for the three and nine months ended September 30, 2020, respectively, primarily driven by strong demand for premium glasses in support of customer product launches, growth in IT products due to work and study from home trends, as well as demand for semiconductor equipment products.

Net income increased by \$54 million and \$79 million for the three and nine months ended September 30, 2020, respectively, primarily driven by the sales increases outlined above, along with continued improvements in cost performance and factory utilization.

Environmental Technologies

The following table provides net sales and net income for the Environmental Technologies segment (in millions):

	Three months ended September 30,		% change	Nine months ended September 30,		% change
	2020	2019	20 vs. 19	2020	2019	20 vs. 19
Segment net sales	\$ 379	\$ 397	(5%)	\$ 925	\$ 1,125	(18%)
Segment net income	\$ 69	\$ 79	(13%)	\$ 104	\$ 199	(48%)

Net sales in the Environmental Technologies segment declined by \$18 million and \$200 million for the three and nine months ended September 30, 2020, respectively. Sales were negatively impacted by the temporary shutdown of vehicle manufacturing facilities in key markets in the first half of the year, with sales improving 68% sequentially in three months ended September 30, 2020, as vehicle manufacturing resumed.

Net income decreased by \$10 million and \$95 million for the three and nine months ended September 30, 2020, respectively, primarily driven by declines in sales outlined above. Profitability was impacted by lower sales and production volumes.

Life Sciences

The following table provides net sales and net income for the Life Sciences segment (in millions):

	Three months ended September 30,		% change	Nine months ended September 30,		% change
	2020	2019		2020	2019	
Segment net sales	\$ 223	\$ 256	(13%)	\$ 724	\$ 759	(5%)
Segment net income	\$ 28	\$ 41	(32%)	\$ 97	\$ 112	(13%)

Net sales in the Life Sciences segment decreased by \$33 million and \$35 million for the three and nine months ended September 30, 2020. The third quarter decline of \$33 million, was largely driven by the ramp-up of a new distribution center in North America, which has proven to be more difficult than expected in the midst of a pandemic. The year-to-date decline of \$35 million, was primarily driven by lab closures due to the COVID-19 pandemic and difficulty ramping-up a new distribution center in North America in the midst of a pandemic, more than offsetting strong demand for test kit consumables and other products to address the pandemic.

Net income decreased by \$13 million and \$15 million for the three and nine months ended September 30, 2020, respectively, driven by the lower sales volume, outlined above.

All Other

All other businesses that do not meet the quantitative threshold for separate reporting have been grouped as “All Other.” This group is primarily comprised of the results of the pharmaceutical technologies, auto glass and new product lines and development projects, as well as certain corporate investments.

The Company obtained a controlling interest in HSG during the third quarter of 2020 and has consolidated results in “All Other” as of September 9, 2020. Refer to Note 4 (HSG Transactions) to the consolidated financial statements for additional information on this transaction.

The following table provides net sales and net loss for All Other (in millions):

	Three months ended September 30,		% change	Nine months ended September 30,		% change
	2020	2019		2020	2019	
Segment net sales	\$ 99	\$ 53	87%	\$ 218	\$ 160	36%
Segment net loss	\$ (50)	\$ (70)	29%	\$ (185)	\$ (210)	12%

Net sales of this segment increased by \$46 million and \$58 million for the three and nine months ended September 30, 2020, respectively, when compared to the same periods in 2019, driven primarily by HSG with sales of \$31 million which was consolidated beginning on September 9, 2020 and increased sales in the emerging businesses during the first nine months of 2020. Net loss decreased by \$20 million and \$25 million, respectively, primarily driven by the change in sales and cost reductions when compared to the same periods in 2019.

CAPITAL RESOURCES AND LIQUIDITY

Financing and Capital Resources

In conjunction with the change in control of HSG on September 9, 2020, a variable interest rate loan of \$175 million U.S. dollars (“USD”), maturing on September 8, 2021, was made to DC HSC Holdings, LLC, now a consolidated subsidiary of Corning and is reflected in Current portion of long term debt and short-term borrowings on the face of Corning’s consolidated balance sheets. Refer to Note 4 (HSG Transactions) to the consolidated financial statements for additional information.

Debt Issuances

2020

During the second quarter of 2020, Corning established an incremental liquidity facility for 25 billion Japanese yen, equivalent to \$232 million USD, with a maturity of three years. As of September 30, 2020, the facility has not been drawn upon.

In the first quarter of 2020, Corning established two unsecured variable rate loan facilities for 1,050 million Chinese yuan, equivalent to \$150 million USD, and 749 million Chinese yuan, equivalent to \$105 million USD, each with a maturity of five years.

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Borrowings under these loan facilities through the end of the third quarter totaled 1,491 million Chinese yuan, or approximately \$212 million USD. These Chinese yuan-denominated proceeds will not be converted into USD and will be used for capital projects. Payments of principal and interest on the Notes will be in Chinese yuan, or should yuan be unavailable due to circumstances beyond Corning's control, a USD equivalent.

2019

In the third quarter of 2019, Corning issued two Japanese yen-denominated debt securities (the "Notes"), as follows:

- ¥31.3 billion 1.153% senior unsecured notes with a maturity of 12 years; and
- ¥5.9 billion 1.513% senior unsecured notes with a maturity of 20 years.

The proceeds from the Notes were received in Japanese yen and converted to USD on the date of issuance. The net proceeds received in USD, after deducting offering expenses, were approximately \$349 million and will be used for general corporate purposes. Payments of principal and interest on the Notes will be in Japanese yen, or should yen be unavailable due to circumstances beyond Corning's control, a USD equivalent.

Share Repurchase Program

On April 26, 2018, Corning's Board of Directors approved a \$2 billion share repurchase program with no expiration date (the "2018 Repurchase Program"). On July 17, 2019, Corning's Board of Directors authorized \$5 billion in share repurchases with no expiration date (the "2019 Repurchase Program").

The Company suspended share buybacks during the first quarter of 2020 and made no share repurchases for the three months ended September 30, 2020. For the nine months ended September 30, 2020, the Company repurchased 4.1 million shares of common stock on the open market for approximately \$105 million, as part of its 2018 Repurchase Program.

In the three and nine months ended September 30, 2019, the Company repurchased 10.8 million and 23.4 million shares of common stock on the open market for approximately \$308 million and \$703 million, respectively, as part of its 2018 Repurchase Program.

Capital Spending

In response to the COVID-19 pandemic and the ensuing economic uncertainty, during the second quarter of 2020 the Company reduced planned annual capital expenditures to approximately \$1.4 billion. Capital spending totaled \$986 million for the nine months ended September 30, 2020.

Cash Flow

Summary of cash flow data (in millions):

	Nine months ended September 30,			
	2020		2019	
Net cash provided by operating activities	\$	1,406	\$	1,013
Net cash used in investing activities	\$	(932)	\$	(1,534)
Net cash used in financing activities	\$	(415)	\$	(833)

Net cash provided by operating activities increased by \$393 million in the nine months ended September 30, 2020, when compared to the same period in the prior year. The change was primarily driven by reduction of inventories, net, higher receipts of customer deposits and incentives, as well as the refund of tax assessments from the South Korean government in the amounts of \$524 million, \$182 million and \$101 million, respectively, partially offset by severance payments, decreased collections of accounts receivable, pension contributions and higher liability payments of \$119 million, \$112 million, \$80 million and \$51 million, respectively.

Net cash used in investing activities decreased by \$602 million in the nine months ended September 30, 2020, when compared to the same period last year, primarily driven by a reduction in capital expenditures.

Net cash used in financing activities was \$418 million lower in the nine months ended September 30, 2020, when compared to the same period last year. The decrease was primarily driven by reduced repurchases of treasury stock, partially offset by lower proceeds of long-term debt, of \$603 million and \$137 million, respectively, for the nine months ended September 30, 2020.

Defined Benefit Pension Plans

Corning has defined benefit pension plans covering certain domestic and international employees. The Company's funding policy is to contribute, over time, an amount exceeding the minimum requirements to achieve the Company's long-term funding targets. Corning contributed \$60 million and \$80 million in cash to the U.S. pension plans for the three and nine months ended September 30, 2020, respectively, and plans to contribute \$45 million in cash to the international plans during the fourth quarter of 2020.

Key Balance Sheet Data

Balance sheet and working capital measures are provided in the following table (in millions):

	September 30, 2020	December 31, 2019
Working capital	\$ 4,209	\$ 3,942
Current ratio	2.1:1	2.1:1
Trade accounts receivable, net of allowances	\$ 2,099	\$ 1,836
Days sales outstanding	63	59
Inventories	\$ 2,581	\$ 2,320
Inventory turns	3.2	3.3
Days payable outstanding (1)	44	48
Long-term debt	\$ 7,822	\$ 7,729
Total debt	\$ 8,078	\$ 7,740
Total debt to total capital	39%	37%

(1) Includes trade payables only.

Management Assessment of Liquidity

Corning is committed to strong financial stewardship and expects to maintain a strong cash balance and expects to generate positive free cash flow for the year.

We ended the third quarter of 2020 with approximately \$2.5 billion of cash and cash equivalents. The cash and cash equivalents are held in various locations throughout the world, with approximately 76% held outside of the United States, and are generally unrestricted. A variety of strategies are utilized to ensure that worldwide cash is available in the locations in which it is needed.

Corning also has a commercial paper program pursuant to which we may issue short-term, unsecured commercial paper up to a maximum aggregate principal amount outstanding at any one time of \$1.5 billion. Under this program, the Company may issue the paper from time to time and will use the proceeds for general corporate purposes. Corning had no outstanding commercial paper at September 30, 2020 and December 31, 2019.

The Company's \$1.5 billion Revolving Credit Agreement is available to support its commercial paper program and for general corporate purposes.

The continued spread of COVID-19 has led to disruption and volatility in the global capital markets which, depending on future developments, could impact liquidity in the future should the Company require access to the capital markets during a period of significant disruption. Corning's other sources of liquidity, including its Revolving Credit Agreement and Japanese yen-denominated liquidity facility, are available in case of market disruption when liquidity is needed.

Other

Comprehensive reviews of significant customers and their creditworthiness are completed by analyzing their financial strength at least annually, or more frequently for customers where we have identified an increased measure of risk. We closely monitor payments and developments which may signal possible customer credit issues. From time to time, we factor or sell accounts receivable. During the three months ended September 30, 2020, we sold accounts receivable, accelerating collections for the period of \$127 million. Sales of accounts receivable during the first half of 2020 were \$274 million, which we believe would have been collected during the normal course of business during the nine months ended September 30, 2020. We currently have not identified any potential material impact on liquidity resulting from customer credit issues.

Major sources of funding for 2020 and beyond will be operating cash flow and proceeds from any issuances of debt. We believe we have sufficient liquidity to fund operations, acquisitions, capital expenditures, scheduled debt repayments and dividend payments.

The Revolving Credit Agreement includes affirmative and negative covenants with which we must comply, including a leverage (debt to capital ratio) financial covenant. The required leverage ratio is a maximum of 60%. At September 30, 2020, the leverage using this measure was approximately 39%. As of September 30, 2020, we were in compliance and no amounts were outstanding under the Company's Revolving Credit Agreement.

The Company's debt instruments contain customary event of default provisions, which allow the lenders the option of accelerating all obligations upon the occurrence of certain events. In addition, some of the debt instruments contain a cross default provision, whereby an uncured default of a specified amount on one debt obligation of the Company, also would be considered a default under the terms of another debt instrument. As of September 30, 2020, we were in compliance with all such provisions.

Other than discussed, management is not aware of any known trends or any known demands, commitments, events or uncertainties that will, or are reasonably likely to, result in insufficient liquidity. There are no known trends, favorable or unfavorable, that would have a material change in the overall cost of liquidity.

Off Balance Sheet Arrangements

There have been no material changes outside the ordinary course of business in off balance sheet arrangements as disclosed in the 2019 Form 10-K under the caption "Off Balance Sheet Arrangements."

Contractual Obligations

There have been no material changes outside the ordinary course of business in the contractual obligations disclosed in the 2019 Form 10-K under the caption "Contractual Obligations."

CRITICAL ACCOUNTING ESTIMATES

The preparation of financial statements requires management to make estimates and assumptions that affect amounts reported therein. The estimates that require management's most difficult, subjective or complex judgments are described in the 2019 Form 10-K and remain unchanged through the first nine months of 2020. For certain items, additional details are provided below.

Valuation of the Previously Held Equity Interest from the Consolidation of HSG

We account for the change in controlling interest using the acquisition method of accounting, which requires us to estimate the fair values of the assets and liabilities recorded. Assets recorded includes intangible assets such as developed technologies and know-how, tradenames and customer-related intangibles, fixed assets and inventories. Liabilities recorded includes contract liabilities such as customer deposits and deferred revenues, debt, and other liabilities. These assets and liabilities recorded are assessed at the time of the change in control and require judgment in ascertaining the fair values. In this business combination achieved in stages, we also remeasure the previously held equity interest in HSG at the time of the change in control at fair value and recognize the resulting gain in earnings. Independent appraisals assisted the company in the determination of the fair value of certain assets and liabilities. Such appraisals are based on acceptable valuation models as well as inputs and assumptions provided by us. Additional information related to the fair value of the assets and liabilities recorded during the allocation period, not to exceed one year, may result in changes to the recorded values of assets and liabilities, resulting in an offsetting adjustment to the goodwill associated with the business combination. Changes in assumptions and estimates subsequent to completing the allocation of the purchase price to the assets and liabilities acquired, as well as differences in actual and estimated results could result in impacts to Corning's financial results

In September 2020, HSG redeemed DuPont's entire ownership interests in HSG for \$250 million. As a result of the Redemption, Corning recognized a pre-tax gain of \$498 million on its previously held equity investment in HSG. The gain was calculated based on the difference between fair value and carrying value of the equity method investment immediately preceding the Redemption. The fair value of Corning's equity interest in HSG was estimated by applying the income approach, which was based on significant inputs such as revenue and profitability as well as key assumptions including a discount rate of 16.5% and terminal growth rate of zero.

Upon completion of the Redemption, we recognized intangible assets consisting primarily of \$215 million of developed technologies and know-how, and \$70 million of other intangibles that are amortized over the weighted average useful life of approximately 20 and 15 years, respectively. The developed technologies and know-how intangible assets were valued using two appropriate valuation methods. The developed technologies and know-how intangibles asset valued at \$125 million utilized the relief from royalty method, which was based on significant inputs such revenue as well as key assumptions including a discount rate of 21.0% and a royalty rate of 7.0%. The developed technologies and know-how intangibles asset valued at \$90 million utilized the multi-period excess earnings method under the income approach, which was based on significant inputs such a revenue as well as the key assumption of a discount rate of 19.0%.

Valuation of Deferred Revenue and Customer Deposits from the consolidation of HSG

Upon completion of the Redemption and resulting consolidation, we recorded a customer deposit liability of \$264 million, at the fair value, of refundable payments that HSG received from a customer under a long-term supply agreement. The discount rates being used to calculate the present value of the customer deposit range from 2.54% to 3.23%. The deposits will be repaid from 2029 to 2034 provided that all purchase obligations of this customer under the supply agreement have been satisfied.

In addition, we recorded deferred revenues of \$1,070 million at fair value related to the performance obligations of non-refundable consideration previously received by HSG from its customers under long term supply agreements. The fair values of deferred revenue were estimated by applying a bottom-up cost buildup method of the cost approach based on significant inputs such as the cost to fulfill the obligations as well as key assumptions including a normal profit margin as of September 9, 2020.

Refer to Note 3 (Investments) and Note 4 (HSG Transactions) to the consolidated financial statements for more information.

Impairment of Assets Held for Use

We are required to assess the recoverability of the carrying value of long-lived assets when an indicator of impairment has been identified. We review long-lived assets in each quarter in which impairment indicators are present. We must exercise judgment in assessing whether an event of impairment has occurred. For the three and nine months ended September 30, 2020, Corning incurred long-lived asset impairment losses for an asset group related to the reassessment and reprioritization of research and development programs within the All Other segment. Given the current economic environment and market opportunities, Corning has rescope and significantly reduced its investment in these research and development programs. The impairment analysis resulted in a total pre-tax asset impairment loss of \$22 million and \$217 million for the three and nine months ended September 30, 2020, which included an insignificant impairment of goodwill and reduced the book value to the fair value of the asset group. The fair value of the asset group was measured using unobservable (Level 3) inputs.

Refer to Note 2 (Restructuring, Impairment and Other Charges and Credits) to the consolidated financial statements for additional information on restructuring activities and impairment.

Manufacturing equipment includes certain components of production equipment that are constructed of precious metals, primarily platinum and rhodium. These metals are not depreciated because they have very low physical losses and are repeatedly reclaimed and reused in the manufacturing process and have a very long useful life. Precious metals are reviewed for impairment as part of the assessment of long-lived assets. This review considers all the Company's precious metals that are either in place in the production process; in reclamation, fabrication, or refinement in anticipation of re-use; or awaiting use to support increased capacity. Precious metals are only acquired to support the manufacturing operations and are not held for trading or other purposes.

At September 30, 2020 and December 31, 2019, the carrying value of precious metals was lower than the fair market value by \$3.2 billion and \$849 million, respectively. These precious metals are utilized by the Display Technologies and Specialty Materials segments. The potential for impairment exists in the future if negative events significantly decrease the cash flow of these segments. Such events include, but are not limited to, a significant decrease in demand for products or a significant decrease in profitability in the Display Technologies or Specialty Materials segments.

Impairment of Goodwill

We are required to make certain subjective and complex judgments in assessing whether an event of impairment of goodwill has occurred, including assumptions and estimates used to determine the fair value of reporting units. Goodwill is tested for impairment at the reporting unit level. A reporting unit is equivalent to an operating segment or a component of an operating segment which constitutes a business and for which discrete financial information is regularly reviewed by segment management. An impairment loss generally would be recognized when the carrying amount of a reporting unit's net assets exceeds the estimated fair value of the reporting unit.

Corning has recorded goodwill in the Display Technologies, Optical Communications, Specialty Materials, Life Sciences and All Other operating segments. Each of these operating segments is a separate reporting unit; however, Specialty Materials and All Other are each made up of two separate reporting units. On a quarterly basis, or if an event occurs or circumstances change that indicate the carrying amount may be impaired, management performs a qualitative assessment of factors in each reporting unit within these operating segments to determine if there have been any triggering events. Considering the economic risks and uncertainties associated with COVID-19, we performed a quantitative test of goodwill during the three months ended March 31, 2020, and determined that the fair values significantly exceeded the carrying values for all reporting units. During the three months ended September 30, 2020, we performed an assessment to identify potential impairment indicators. An insignificant amount of goodwill was written off for a reporting unit within the All Other segment related to the reassessment and reprioritization of research and development programs. No indicators of impairment were present for remaining reporting units.

The quantitative assessment is performed by assessing various factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount. These factors include, but are not limited to, changes in macroeconomic conditions, industry and market considerations, cost factors, overall financial performance, other relevant entity-specific events, or a sustained decrease in share price.

NEW ACCOUNTING STANDARDS

Refer to Note 1 (Significant Accounting Policies) to the consolidated financial statements.

ENVIRONMENT

Corning has been named by the Environmental Protection Agency (“the Agency”) under the Superfund Act, or by state governments under similar state laws, as a potentially responsible party for 15 active hazardous waste sites. Under the Superfund Act, all parties who may have contributed any waste to a hazardous waste site, identified by the Agency, are jointly and severally liable for the cost of cleanup unless the Agency agrees otherwise. It is Corning’s policy to accrue for its estimated liability related to Superfund sites and other environmental liabilities related to property owned by Corning based on expert analysis and continual monitoring by both internal and external consultants. At September 30, 2020 and December 31, 2019, Corning had accrued approximately \$78 million and \$41 million, respectively, for the undiscounted estimated liability for environmental cleanup and related litigation. Based upon the information developed to date, management believes that the accrued reserve is a reasonable estimate of the Company’s liability and that the risk of an additional loss in an amount materially higher than that accrued is remote.

FORWARD-LOOKING STATEMENTS

The statements in this Quarterly Report on Form 10-Q, in reports subsequently filed by Corning with the SEC on Forms 8-K, and related comments by management that are not historical facts or information and contain words such as “will,” “believe,” “anticipate,” “expect,” “intend,” “plan,” “seek,” “see,” “would,” and “target” and similar expressions are forward-looking statements. Such statements relate to future events that by their nature address matters that are, to different degrees, uncertain. These forward-looking statements relate to, among other things, the Company’s future operating performance, the Company’s share of new and existing markets, the Company’s revenue and earnings growth rates, the Company’s ability to innovate and commercialize new products, and the Company’s implementation of cost-reduction initiatives and measures to improve pricing, including the optimization of the Company’s manufacturing capacity.

Although the Company believes that these forward-looking statements are based upon reasonable assumptions regarding, among other things, current estimates and forecasts, general economic conditions, its knowledge of its business, and key performance indicators that impact the Company, actual results could differ materially. The Company does not undertake to update forward-looking statements. Some of the risks, uncertainties and other factors that could cause actual results to differ materially from those expressed in or implied by the forward-looking statements include, but are not limited to:

- the duration and severity of the recent COVID-19 pandemic, and its ultimate impact across our businesses on demand, operations and our global supply chains;
- the effects of acquisitions, dispositions and other similar transactions;
- global business, financial, economic and political conditions;
- tariffs and import duties;
- currency fluctuations between the U.S. dollar and other currencies, primarily the Japanese yen, new Taiwan dollar, euro, Chinese yuan and South Korean won;
- product demand and industry capacity;
- competitive products and pricing;
- availability and costs of critical components and materials;
- new product development and commercialization;
- order activity and demand from major customers;
- the amount and timing of our cash flows and earnings and other conditions, which may affect our ability to pay our quarterly dividend at the planned level or to repurchase shares at planned levels;
- possible disruption in commercial activities due to terrorist activity, cyber-attack, armed conflict, political or financial instability, natural disasters, or major health concerns;
- loss of intellectual property due to theft, cyber-attack, or disruption to our information technology infrastructure;
- unanticipated disruption to equipment, facilities, IT systems or operations;
- effect of regulatory and legal developments;
- ability to pace capital spending to anticipated levels of customer demand;
- rate of technology change;
- ability to enforce patents and protect intellectual property and trade secrets;
- adverse litigation;
- product and components performance issues;
- retention of key personnel;
- customer ability, most notably in the Display Technologies segment, to maintain profitable operations and obtain financing to fund ongoing operations and manufacturing expansions and pay receivables when due;
- loss of significant customers;
- changes in tax laws and regulations including the 2017 Tax Cuts and Jobs Act;
- the impacts of audits by taxing authorities;
- the potential impact of legislation, government regulations, and other government action and investigations; and
- other risks detailed in Corning’s SEC filings.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market Risk Disclosures

As noted in the 2019 Form 10-K, we operate and conduct business in many foreign countries and as a result are exposed to fluctuations between the U.S. dollar and other currencies. Volatility in the global financial markets could increase the volatility of foreign currency exchange rates which would, in turn, impact sales and net income. For a discussion of the Company's exposure to market risk and how we mitigate that risk, refer to Part II, Item 1A, Risk Factors in this Quarterly Report on Form 10-Q and Part II, Item 7A, Quantitative and Qualitative Disclosures About Market Risks, contained in the 2019 Form 10-K.

ITEM 4. CONTROLS AND PROCEDURES

Under the supervision of and with the participation of Corning's management, including the chief executive officer and chief financial officer, we evaluated the effectiveness of the design and operation of the Company's disclosure controls and procedures (as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended), as of September 30, 2020, the end of the period covered by this report. Based on that evaluation, we have concluded that the Company's disclosure controls and procedures were effective as of that date. Corning's disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by Corning in the reports that it files or submits under the Exchange Act is accumulated and communicated to Corning's management, including Corning's principal executive and principal financial officers, or other persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.

An evaluation of internal controls over financial reporting was also performed to determine whether any changes have occurred during the period covered by this report that have materially affected, or are reasonably likely to materially affect, the internal control over financial reporting. The chief executive officer and chief financial officer concluded that there was no change in Corning's internal control over financial reporting that materially affected, or is reasonably likely to materially affect, internal control over financial reporting.

Part II – Other Information

ITEM 1. LEGAL PROCEEDINGS

Environmental Litigation. See the 2019 Form 10-K, Part I, Item 3. For additional information and updates to estimated liabilities as of September 30, 2020, see Part I, Item 1, Financial Statements, Note 6 (Commitments, Contingencies and Guarantees) of the notes to the consolidated financial statements included under Item 1 of this Quarterly Report, which is incorporated herein by reference.

ITEM 1A. RISK FACTORS

The COVID-19 pandemic is adversely affecting, and is expected to continue to adversely affect, our operations and supply chains, and we have experienced and expect to continue to experience unpredictable reductions in demand for certain of our products.

COVID-19 has impacted and may further impact the global economy and could have additional impacts on economic growth, the proper functioning of financial and capital markets, foreign currency exchange rates, and interest rates. We are unable to predict the duration and severity of the spread of the coronavirus, and responses thereto, which are highly uncertain and will, to a large degree, be a function of factors beyond our control, such as the continued spread or recurrence of contagion, the implementation of effective preventative and containment measures, the development of effective medical solutions, the extent to which governmental restrictions on travel, public gatherings, mobility and other activities remain in place or are augmented, financial and other market reactions to the foregoing, and reactions and responses of communities and societies.

While we expect the impacts of COVID-19 to have an adverse effect on our business, financial condition and results of operations, we are unable to predict the extent or nature of these impacts. The severity of the impact will depend on our ability to adjust to this uncertainty as well as many other factors, including, but not limited to, the duration and severity of the pandemic and the extent and severity of the impact on the Company's customers, disruptions and restrictions on availability of labor, as well as temporary disruptions to our supply chain, all of which are uncertain and cannot be predicted. The Company's future results of operations and liquidity could be adversely impacted by reduced revenues, delays in payments of outstanding receivable amounts beyond normal payment terms, supply chain disruptions and uncertain demand, and the impact of any initiatives or programs that the Company may undertake to address financial and operations challenges faced by its customers.

In addition to other information set forth in this report, you should carefully consider the factors discussed in Part I, Item 1A. Risk Factors in Corning's 2019 Form 10-K, which could materially impact the Company's business, financial condition or future results. Risks disclosed in the 2019 Form 10-K are not the only risks facing the Company. Additional risks and uncertainties not currently known to us or that we currently deem immaterial may materially adversely impact Corning's business, financial condition or operating results. There have been no material changes to Part I, Item 1A. Risk Factors in the 2019 Form 10-K, other than the addition of the preceding risk factor related to COVID-19.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

This table provides information about purchases of common stock during the third quarter of 2020:

Issuer Purchases of Equity Securities

Period	Total number of shares purchased (1)	Average price paid per share	Number of shares purchased as part of publicly announced programs (2)	Approximate dollar value of shares that may yet be purchased under the programs
July 1 - 31, 2020	46,543	\$ 29.12		
August 1 - 31, 2020	734	32.32		
September 1 - 30, 2020	4,007	32.40		
Total	51,284	\$ 29.42	—	\$ 5,318,357,637

- (1) This column reflects the following transactions during the third quarter of 2020: (i) the deemed surrender to us of 17,487 shares of common stock to satisfy tax withholding obligations relating to the vesting of employee restricted stock units; and (ii) the deemed surrender to us of 33,797 shares of common stock to satisfy tax withholding obligations relating to the vesting of restricted stock issued to employees.
- (2) The Company has suspended share repurchases.

ITEM 6. EXHIBITS

(a) Exhibits

Exhibit Number	Exhibit Name
31.1	Certification of Chief Executive Officer Pursuant to Rule 13a-14(a) under the Exchange Act
31.2	Certification of Chief Financial Officer Pursuant to Rule 13a-14(a) under the Exchange Act
32	Certification Pursuant to 18 U.S.C. Section 1350
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Calculation Linkbase Document
101.LAB	XBRL Taxonomy Label Linkbase Document
101.PRE	XBRL Taxonomy Presentation Linkbase Document
101.DEF	XBRL Taxonomy Definition Document

SIGNATURES

Pursuant to the requirements of the Securities and Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Corning Incorporated
(Registrant)

October 29, 2020

/s/ Edward A. Schlesinger

CHIEF EXECUTIVE OFFICER CERTIFICATION

I, Wendell P. Weeks, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Corning Incorporated (the registrant);
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting.
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls over financial reporting.

October 29, 2020

/s/ Wendell P. Weeks

Wendell P. Weeks
Chairman and Chief Executive Officer
(Principal Executive Officer)

CHIEF FINANCIAL OFFICER CERTIFICATION

I, R. Tony Tripeny, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Corning Incorporated (the registrant);
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting.
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls over financial reporting.

October 29, 2020

/s/ R. Tony Tripeny

R. Tony Tripeny
Executive Vice President and Chief Financial Officer
(Principal Financial Officer)

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Corning Incorporated (the Company) on Form 10-Q for the period ended September 30, 2020 as filed with the Securities and Exchange Commission on the date hereof (the Report), we, Wendell P. Weeks, Chairman and Chief Executive Officer and R. Tony Tripeny, Executive Vice President and Chief Financial Officer, of the Company, certify, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350, that:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: October 29, 2020

/s/ Wendell P. Weeks

Wendell P. Weeks
Chairman and Chief Executive Officer

/s/ R. Tony Tripeny

R. Tony Tripeny
Executive Vice President and Chief Financial Officer

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