CORNING INC /NY
Form 10-K
February 12, 2019
Index

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

Form 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2018

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	16-0393470
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

ONE RIVERFRONT PLAZA, CORNING, NY	14831
(Address of principal executive offices)	(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	Name of each exchange on which registered
Common Stock, $0.50 par value per share	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act.

Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the 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 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 if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment of this Form 10 K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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	Emerging growth company
Smaller reporting company	

If an emerging growth company, indicate 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 provided pursuant to Section 13(a) of the Exchange Act.

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

Yes No

As of June 30, 2018, the aggregate market value of the registrant’s common stock held by non-affiliates of the registrant was $22 billion based on the $27.51 price as reported on the New York Stock Exchange.

There were 786,761,073 shares of Corning’s common stock issued and outstanding as of January 31, 2019.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant’s Definitive Proxy Statement dated March 22, 2019, and filed for the Registrant’s 2019 Annual Meeting of Shareholders are incorporated into Part III of this Annual Report on Form 10-K, as specifically set forth in Part III.

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PART I

Corning Incorporated and its consolidated subsidiaries are hereinafter sometimes referred to as the “Company,” the “Registrant,” “Corning,” or “we.”

This report contains forward-looking statements that involve a number of risks and uncertainties. These statements relate to our future plans, objectives, expectations and estimates and may contain words such as “believes,” “expects,” “anticipates,” “estimates,” “forecasts,” or similar expressions. Our actual results could differ materially from what is expressed or forecasted in our forward-looking statements. Some of the factors that could contribute to these differences include those discussed under “Forward-Looking Statements,” “Risk Factors,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and elsewhere in this report.

Item 1. Business

General

Corning traces its origins to a glass business established in 1851. The present corporation was incorporated in the State of New York in December 1936. The Company’s name was changed from Corning Glass Works to Corning Incorporated on April 28, 1989.

Corning Incorporated is a leading innovator in materials science. For more than 165 years, Corning has combined its unparalleled expertise in glass science, ceramic science, and optical physics with deep manufacturing and engineering capabilities to develop category-defining products that transform industries and enhance people's lives. We succeed through sustained investment in research and development, a unique combination of material and process innovation, and deep, trust-based relationships with customers who are global leaders in their industries.

Corning’s capabilities are versatile and synergistic, which allows the company to evolve to meet changing market needs, while also helping our customers capture new opportunities in dynamic industries. Today, Corning’s markets include optical communications, mobile consumer electronics, display technology, automotive emissions control products, and life sciences vessels. Corning's industry-leading products include damage-resistant cover glass for mobile devices; precision glass for advanced displays; optical fiber, wireless technologies, and connectivity solutions

for state-of-the-art communications networks; trusted products to accelerate drug discovery and delivery; and clean-air technologies for cars and trucks.

Corning operates in five reportable segments: Display Technologies, Optical Communications, Environmental Technologies, Specialty Materials and Life Sciences, and manufactures products at 108 plants in 15 countries.

Display Technologies Segment

Corning's Display Technologies segment manufactures glass substrates for high performance displays, including organic light-emitting diode ("OLEDs") and liquid crystal displays ("LCDs") that are used primarily in televisions, notebook computers and flat panel desktop monitors. This segment develops, manufactures and supplies high quality glass substrates using technology expertise and a proprietary fusion manufacturing process, which Corning invented and is the cornerstone of the Company's technology leadership in the display glass industry. Our highly automated process yields glass substrates with a pristine surface and excellent thermal dimensional stability and uniformity – essential attributes in the production of large, high performance display panels. Corning's fusion process is scalable and we believe it is the most cost-effective process in producing large size substrates.

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We are recognized for providing product innovations that enable our customers to produce larger, lighter, thinner and higher-resolution displays. Some of the product innovations that we have launched over the past ten years utilizing our world-class processes and capabilities include the following:

- Corning® EAGLE XG® Glass, the industry's first LCD glass substrate that is free of heavy metals;
- Corning® EAGLE XG® Slim Glass, a line of thin glass substrates which enables lighter-weight portable devices and thinner televisions and monitors;
- Corning IRIS™ Glass, a light-guide plate solution which enables televisions and monitors to be less the 5-mm thick;
- The family of Corning LOTUS™ Glass, high-performance display glass developed to enable cutting-edge technologies, OLEDs and next generation LCDs. These substrate glasses provide industry-leading levels of low total pitch variation, resulting in brighter, more energy-efficient displays with higher resolutions for consumers and better yields for panel makers; and
- The world's first Gen 10 and Gen 10.5 glass substrates in support of improved efficiency in manufacturing large-sized televisions.

Corning has display glass manufacturing operations in South Korea, Japan, Taiwan and China, and services all its glass customers in all regions directly, utilizing its manufacturing facilities throughout Asia.

Patent protection and proprietary trade secrets are important to the Display Technologies segment's operations. Refer to the material under the heading "Patents and Trademarks" for information relating to patents and trademarks.

The Display Technologies segment represented 29% of Corning's segment net sales in 2018.

Optical Communications Segment

Corning invented the world's first low-loss optical fiber in 1970. Since that milestone, we have continued to pioneer optical fiber, cable and connectivity solutions. As global bandwidth demand driven by video usage grows exponentially, telecommunications networks continue to migrate from copper to optical-based systems that can deliver the required cost-effective bandwidth-carrying capacity. Our experience puts us in a unique position to design and deliver optical solutions that reach every edge of the communications network.

This segment is classified into two main product groupings – carrier network and enterprise network. The carrier network group consists primarily of products and solutions for optical-based communications infrastructure for services such as video, data and voice communications. The enterprise network group consists primarily of

optical-based communication networks sold to businesses, governments and individuals for their own use.

Our carrier network product portfolio encompasses an array of optical fiber products, including Vascade submarine optical fibers for use in submarine networks; LEAF optical fiber for long-haul, regional and metropolitan networks; SMF-28 ULL fiber for more scalable long-haul and regional networks; SMF-28e+ single-mode optical fiber that provides additional transmission wavelengths in metropolitan and access networks; ClearCurve ultra-bendable single-mode fiber for use in multiple-dwelling units and fiber-to-the-home applications; and Corning® SMF-28® Ultra Fiber, designed for high performance across the range of long-haul, metro, access, and fiber-to-the-home network applications, combining the benefits of industry-leading attenuation and improved macrobend performance in one fiber. A portion of our optical fiber is sold directly to end users and third-party cablers globally. Corning's remaining fiber production is cabled internally and sold to end users as either bulk cable or as part of an integrated optical solution. Corning's cable products support various outdoor, indoor/outdoor and indoor applications and include a broad range of loose tube, ribbon and drop cable designs with flame-retardant versions available for indoor and indoor/outdoor use.

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In addition to optical fiber and cable, our carrier network product portfolio also includes hardware and equipment products, including cable assemblies, fiber optic hardware, fiber optic connectors, optical components and couplers, closures, network interface devices, and other accessories. These products may be sold as individual components or as part of integrated optical connectivity solutions designed for various carrier network applications. Examples of these solutions include our FlexNAPTM terminal distribution system, which provides pre-connectorized distribution and drop cable assemblies for cost-effectively deploying fiber-to-the-home ("FTTH") networks; and the CentrixTM platform, which provides a high-density fiber management system with industry-leading density and innovative jumper routing that can be deployed in a wide variety of carrier switching centers.

To keep pace with surging demand for mobile bandwidth, Corning has a full complement of operator-grade distributed antenna systems ("DAS"), including the recently developed Optical Network Evolution wireless platform. The ONE™ Wireless Platform ("ONE") is the first all-optical converged cellular and Wi-Fi® solution built on an all-optical backbone with modular service support. It provides virtually unlimited bandwidth, and meets all wireless service needs of large-scale enterprises at a lower cost than the typical DAS solution.

In addition to our optical-based portfolio, Corning's carrier network portfolio also contains select copper-based products including subscriber demarcation, connection and protection devices, xDSL (different variations of digital subscriber lines) passive solutions and outside plant enclosures. In addition, Corning offers coaxial RF interconnects for the cable television industry as well as for microwave applications for GPS, radars, satellites, manned and unmanned military vehicles, and wireless and telecommunications systems.

Our enterprise network portfolio also includes optical fiber products, including ClearCurve ultra-bendable multimode fiber for data centers and other enterprise network applications; InfiniCor fibers for local area networks; and more recently ClearCurve VSDN ultra-bendable optical fiber designed to support emerging high-speed interconnects between computers and other consumer electronics devices. The remainder of Corning's fiber production is cabled internally and sold to end users as either bulk cable or as part of an integrated optical solution. Corning's cable products include a broad range of tight-buffered, loose tube and ribbon cable designs with flame-retardant versions available for indoor and indoor/outdoor applications that meet local building code requirements.

Corning's hardware and equipment for enterprise network applications include cable assemblies, fiber optic hardware, fiber optic connectors, optical components and couplers, closures and other accessories. These products may be sold as individual components or as part of integrated optical connectivity solutions designed for various network applications. Examples of enterprise network solutions include the Pretium EDGE platform, which provides high-density pre-connectorized solutions for data center applications, and continues to evolve with recent updates for upgrading to 40/100G applications and port tap modules for network monitoring; the previously mentioned ONE Wireless platform, which spans both carrier and enterprise network applications; and our recently introduced optical connectivity solutions to support customer initiatives.

In December 2017, Corning announced that it had entered into agreements with the 3M Company (3M) to purchase substantially all its Communication Markets Division ("CMD") in a cash transaction. During 2018, Corning acquired substantially all of CMD for $841 million.

Corning believes that this transaction will augment its Optical Communications segment's global market access and expand its broad portfolio of high-bandwidth optical connectors, assemblies, hardware, and accessories for carrier networks, enterprise LAN, and data center solutions.

Our optical fiber manufacturing facilities are in North Carolina, China and India. Cabling operations are in North Carolina, Germany, Poland, China and smaller regional locations. Our manufacturing operations for hardware and equipment products are in Texas, Arizona, Mexico, Brazil, Denmark, Germany, Poland, Israel, Australia and China.

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Patent protection is important to the segment's operations. The segment has an extensive portfolio of patents relating to its products, technologies and manufacturing processes. The segment licenses certain of its patents to third parties and generates revenue from these licenses, although the royalty income is not currently material to this segment's operating results. Corning is licensed to use certain patents owned by others, which are considered important to the segment's operations. Refer to the material under the heading "Patents and Trademarks" for information relating to the Company's patents and trademarks.

The Optical Communications segment represented 37% of Corning's segment net sales in 2018.

Specialty Materials Segment

The Specialty Materials segment manufactures products that provide more than 150 material formulations for glass, glass ceramics and fluoride crystals to meet demand for unique customer needs. Consequently, this segment operates in a wide variety of commercial and industrial markets that include display optics and components, semiconductor optics components, aerospace and defense, astronomy, ophthalmic products, telecommunications components and cover glass that is optimized for display devices.

Our cover glass, known as Corning® Gorilla® Glass, is a thin sheet glass designed specifically to function as a cover glass for display devices such as mobile phones, tablets and notebook PCs. Elegant and lightweight, Corning Gorilla Glass is durable enough to resist many real-world events that commonly cause glass failure, while maintaining optical clarity, touch sensitivity, and damage resistance, enabling exciting new applications in technology and design. In 2018, Corning unveiled its latest Corning Gorilla Glass innovation, Corning® Gorilla® Glass 6, which is designed to be stronger than previous formulas and provide further protection against breakage. Gorilla Glass 6 survives higher drop heights than Gorilla Glass 5, and survives repeated drops.

Corning Gorilla Glass is manufactured in Kentucky, South Korea, Japan and Taiwan.

Semiconductor optics manufactured by Corning includes high-performance optical material products, optical-based metrology instruments, and optical assemblies for applications in the global semiconductor industry. Corning's semiconductor optics products are manufactured in New York.

Other specialty glass products include glass lens and window components and assemblies and are made in New York, New Hampshire and France, and sourced from China.

Patent protection is important to the segment's operations. The segment has a growing portfolio of patents relating to its products, technologies and manufacturing processes. Brand recognition and loyalty, through well-known trademarks, are important to the segment. Refer to the material under the heading "Patents and Trademarks" for information relating to the Company's patents and trademarks.

The Specialty Materials segment represented approximately 13% of Corning's segment net sales in 2018.

Environmental Technologies Segment

Corning's Environmental Technologies segment manufactures ceramic substrates and filter products for emissions control in mobile applications around the world. In the early 1970s, Corning developed an economical, high-performance cellular ceramic substrate that is now the standard for catalytic converters in vehicles worldwide. As global emissions control regulations tighten, Corning has continued to develop more effective and durable ceramic substrate and filter products for gasoline and diesel applications. For example, in response to the growing popularity of gasoline direct injection engines, Corning introduced gasoline particulate filters to help automakers reduce particulate emissions generated by these engines. Corning manufactures substrate and filter products in New York, Virginia, China, Germany and South Africa. Corning sells its ceramic substrate and filter products worldwide to catalyzers and manufacturers of emission control systems who then sell to automotive and diesel vehicle or engine manufacturers. Although most sales are made to the emission control systems manufacturers, the use of Corning substrates and filters is generally required by the specifications of the automotive and diesel vehicle or engine manufacturers.

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Patent protection is important to the segment's operations. The segment has an extensive portfolio of patents relating to its products, technologies and manufacturing processes. Corning is licensed to use certain patents owned by others, which are also considered important to the segment's operations. Refer to the material under the heading "Patents and Trademarks" for information relating to the Company's patents and trademarks.

The Environmental Technologies segment represented 11% of Corning's segment net sales in 2018.

Life Sciences Segment

As a leading developer, manufacturer and global supplier of laboratory products for over 100 years, Corning's Life Sciences segment works with researchers and drug manufacturers seeking to increase efficiencies, reduce costs and compress timelines. Using unique expertise in the fields of materials science, polymer surface science, cell culture and biology, the segment provides innovative solutions that improve productivity and enable breakthrough research.

Life Sciences products include consumables (such as plastic vessels, specialty surfaces, cell culture media and serum), as well as general labware and equipment, that are used for advanced cell culture research, bioprocessing, genomics, drug discovery, microbiology and chemistry. Corning sells life sciences products under these primary brands: Corning, Falcon, Pyrex and Axygen. The products are marketed globally, primarily through distributors, to pharmaceutical and biotechnology companies, academic institutions, hospitals, government entities, and other facilities. Corning manufactures these products in the United States in California, Illinois, Maine, Massachusetts, New York, North Carolina, Utah and Virginia and outside of the U.S. in China, France, Mexico and Poland.

Patent protection is important to the segment's operations. The segment has a growing portfolio of patents relating to its products, technologies and manufacturing processes. Brand recognition and loyalty, through well-known trademarks, are important to the segment. Refer to the material under the heading "Patents and Trademarks" for more information.

The Life Sciences segment represented 8% of Corning's segment net sales in 2018.

All Other

All other segments 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 business and new product lines and development projects, as well as certain corporate investments such as Eurokera and Keraglass equity affiliates.

The All Other segment represented 2% of Corning’s segment net sales in 2018.

Additional explanation regarding Corning and its five reportable segments, as well as financial information about geographic areas, is presented in Management’s Discussion and Analysis of Financial Condition and Results of Operations and Note 17 (Reportable Segments) to the Consolidated Financial Statements.

Corporate Investments

Dow Corning Corporation and Hemlock Semiconductor Group (“HSG”). Prior to May 31, 2016, Corning and The Dow Chemical Company (“Dow Chemical”) each owned half of Dow Corning Corporation (“Dow Corning”), an equity company headquartered in Michigan that manufactures silicone products worldwide. Dow Corning was the majority-owner of HSG, a market leader in the production of high purity polycrystalline silicon for the semiconductor and solar energy industries.

On May 31, 2016, Corning completed the strategic realignment of its equity investment in Dow Corning pursuant to the Transaction Agreement announced in December 2015. Under the terms of the Transaction Agreement, Corning exchanged with Dow Corning its 50% stock interest in Dow Corning for 100% of the stock of a newly formed entity, which held an equity interest in HSG and approximately $4.8 billion in cash.

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Prior to realignment, HSG, a consolidated subsidiary of Dow Corning, was an indirect equity investment of Corning. Upon completion of the exchange, Corning now has a direct equity investment in HSG. Because our ownership percentage in HSG did not change as a result of the realignment, the investment in HSG is recorded at its carrying value, which had a negative carrying value of $383 million at the transaction date. The negative carrying value resulted from a one-time charge to this entity in 2014 for the permanent abandonment of certain assets. Excluding this charge, the entity is profitable and recovered its equity during 2018.

Pittsburgh Corning Corporation. Prior to the second quarter of 2016, 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. In the second quarter of 2016, Corning contributed its equity interests in PCC and Pittsburgh Corning Europe N.V. as required by the Plan and recognized a gain of $56 million for the difference between the fair value of the asbestos litigation liability and carrying value of the investment.

Additional information about corporate investments is presented in Note 5 (Investments) to the Consolidated Financial Statements.

Competition

Corning competes with many large and varied manufacturers, both domestic and foreign. Some of these competitors are larger than Corning, and some have broader product lines. Corning strives to maintain and improve its market position through technology and product innovation. For the foreseeable future, Corning believes its competitive advantage lies in its commitment to research and development, its commitment to reliability of supply and product quality and technical specification of its products. There is no assurance that Corning will be able to maintain or improve its market position or competitive advantage.

Display Technologies Segment

Corning is the largest worldwide producer of glass substrates for high performance display glass. The environment for high performance display glass substrate products is very competitive and Corning believes it has maintained its competitive advantages by investing in new products, providing a consistent and reliable supply, and continually improving its proprietary fusion manufacturing process. This process allows us to deliver glass that is larger, thinner and lighter, with exceptional surface quality and without heavy metals. Asahi Glass Co. Ltd. and Nippon Electric Glass Co. Ltd. are Corning's principal competitors in display glass substrates.

Optical Communications Segment

Corning believes it maintains a leadership position in the segment's principal product groups, which include carrier and enterprise networks. The competitive landscape includes industry consolidation, price pressure and competition for the innovation of new products. These competitive conditions are likely to persist. Corning believes its large-scale manufacturing experience, fiber process, technology leadership and intellectual property provide cost advantages relative to several of its competitors.

The primary competing producers of the Optical Communications segment are CommScope and Prysmian Group.

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Specialty Materials Segment

Corning has deep capabilities in materials science, optical design, shaping, coating, finishing, metrology, and system assembly. Additionally, we are addressing emerging needs of the consumer electronics industry with the development of chemically strengthened glass. Corning Gorilla Glass is a thin-sheet glass that is better able to survive events that most commonly cause glass failure. Its advanced composition allows a deeper layer of chemical strengthening than is possible with most other chemically strengthened glasses, making it both durable and damage resistant. Our products and capabilities in this segment position the Company to meet the needs of a broad array of markets including display, semiconductor, aerospace/defense, astronomy, vision care, industrial/commercial, and telecommunications. For this segment, Schott, Asahi Glass Co. Ltd., Nippon Electric Glass Co. Ltd. and Heraeus are the main competitors.

Environmental Technologies Segment

Corning believes it maintains a strong position in the worldwide market for automotive ceramic substrate and filter products, as well as in the heavy-duty and light-duty diesel vehicle markets. The Company believes its competitive advantage in automotive ceramic substrate products for catalytic converters and filter products for particulate emissions in exhaust systems is based on an advantaged product portfolio, collaborative engineering design services, customer service and support, strategic global presence and continued product innovation. Corning's Environmental Technologies products face principal competition from NGK Insulators, Ltd. and Ibiden Co. Ltd.

Life Sciences Segment

Corning seeks to maintain a competitive advantage by emphasizing product quality, global distribution, supply chain efficiency, a broad product line and superior product attributes. Our principal competitors include Thermo Fisher Scientific, Inc., Greiner Group AG, Eppendorf AG and Starstedt AG. Corning also faces increasing competition from large distributors that have pursued backward integration or introduced private label products.

Raw Materials

Corning's manufacturing processes and products require access to uninterrupted power sources, significant quantities of industrial water, certain precious metals, and various batch materials. Availability of resources (ores, minerals,

polymers, helium and processed chemicals) required in manufacturing operations, appears to be adequate. Corning's suppliers, from time to time, may experience capacity limitations in their own operations, or may eliminate certain product lines. Corning believes it has adequate programs to ensure a reliable supply of raw and batch materials as well as precious metals. For many of its materials, Corning has alternate suppliers that would allow operations to continue without interruption in the event of specific materials shortages.

Certain key materials and proprietary equipment used in the manufacturing of products are currently sole-sourced or available only from a limited number of suppliers. To minimize this risk, Corning closely monitors raw materials and equipment with limited availability or which are sourced through one supplier. However, any future difficulty in obtaining sufficient and timely delivery of components and/or raw materials could result in lost sales due to delays or reductions in product shipments, or reductions in Corning's gross margins.

Patents and Trademarks

Inventions by members of Corning's research and engineering staff continue to be important to the Company's growth. Patents have been granted on many of these inventions in the United States and other countries. Some of these patents have been licensed to other manufacturers. Many of our earlier patents have now expired, but Corning continues to seek and obtain patents protecting its innovations. In 2018, Corning was granted about 520 patents in the U.S. and over 1,430 patents in countries outside the U.S.

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Each business segment possesses a patent portfolio that provides certain competitive advantages in protecting Corning's innovations. Corning has historically enforced, and will continue to enforce, its intellectual property rights. At the end of 2018, Corning and its wholly-owned subsidiaries owned over 11,600 unexpired patents in various countries of which over 4,400 were U.S. patents. Between 2019 and 2021, approximately 11% of these patents will expire, while at the same time Corning intends to seek patents protecting its newer innovations. Worldwide, Corning has about 10,300 patent applications in process, with about 2,500 in process in the U.S. Corning believes that its patent portfolio will continue to provide a competitive advantage in protecting the Company's innovation, although Corning's competitors in each of its businesses are actively seeking patent protection as well.

While each of our reportable segments has numerous patents in various countries, no one patent is considered material to any of these segments. Important U.S.-issued patents in our reportable segments include the following:

- Display Technologies: patents relating to glass compositions and methods for the use and manufacture of glass substrates for display applications.
- Optical Communications: patents relating to (i) optical fiber products including low-loss optical fiber, high data rate optical fiber, and dispersion compensating fiber, and processes and equipment for manufacturing optical fiber, including methods for making optical fiber preforms and methods for drawing, cooling and winding optical fiber; (ii) optical fiber ribbons and methods for making such ribbon, fiber optic cable designs and methods for installing optical fiber cable; (iii) optical fiber connectors, hardware, termination and storage and associated methods of manufacture; and (iv) distributed communication systems.
- Environmental Technologies: patents relating to cellular ceramic honeycomb products, together with ceramic batch and binder system compositions, honeycomb extrusion and firing processes, and honeycomb extrusion dies and equipment for the high-volume, low-cost manufacture of such products.
- Specialty Materials: patents relating to protective cover glass, ophthalmic glasses and polarizing dyes, and semiconductor/microlithography optics and blanks, metrology instrumentation and laser/precision optics, glass polarizers, specialty fiber, and refractories.
- Life Sciences: patents relating to methods and apparatus for the manufacture and use of scientific laboratory equipment including multiwell plates and cell culture products, as well as equipment and processes for label independent drug discovery.

Products reported in All Other include development projects, new product lines, and other businesses or investments that do not meet the threshold for separate reporting.

Approximate number of patents granted to our reportable segments follows:

	Number of patents worldwide	U.S. patents	Important patents expiring between 2019 and 2021
Display Technologies	1,700	340	6
Optical Communications	5,060	2,340	27
Environmental Technologies	1,100	380	14
Specialty Materials	1,600	680	7
Life Sciences	560	240	1

Many of the Company's patents are used in operations or are licensed for use by others, and Corning is licensed to use patents owned by others. Corning has entered into cross-licensing arrangements with some major competitors, but the scope of such licenses has been limited to specific product areas or technologies.

Corning's principal trademarks include the following: Axygen, Corning, Celcor, ClearCurve, DuraTrap, Eagle XG, EDGE8, Gorilla, HPFS, LEAF, PYREX, Steuben, Falcon, SMF-28e, UniCam, Valor, Willow, LOTUS and IRIS.

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Protection of the Environment

Corning has an extensive program to ensure that its facilities are in compliance with state, federal and foreign pollution-control regulations. This program has resulted in capital and operating expenditures each year. To maintain compliance with such regulations, capital expenditures for pollution control in operations were approximately $11.3 million in 2018 and are estimated to be $21.1 million in 2019.

Corning's 2018 consolidated operating results were charged with approximately $47 million for depreciation, maintenance, waste disposal and other operating expenses associated with pollution control. Corning believes that its compliance program does not place it at a competitive disadvantage.

Employees

At December 31, 2018, Corning had approximately 51,500 full-time employees. From time to time, Corning also retains consultants, independent contractors, temporary and part-time workers.

Executive Officers of the Registrant

James P. Clappin Executive Vice President, Corning Glass Technologies

Mr. Clappin joined Corning in 1980 as a process engineer. He transitioned to GTE Corporation in 1983 and returned to Corning in 1988. He held a variety of manufacturing management roles in the consumer products division, transferring to the display business in 1994. He was appointed as general manager of Corning Display Technologies (CDT) in 2002, and was president of CDT from September 2005 to July 2010. He was appointed president, Corning Glass Technologies, in 2010. He was appointed to his present position in 2017. Age 61.

Martin J. Curran Executive Vice President and Corning Innovation Officer

Mr. Curran joined Corning in 1984 and has held a variety of roles in finance, manufacturing, and marketing. He has served as senior vice president, general manager for Corning Cable Systems Hardware and Equipment Operations in the Americas, responsible for operations in Hickory, North Carolina; Keller, Texas; Reynosa, Mexico; Shanghai,

China; and the Dominican Republic. He has also served as senior vice president and general manager for Corning Optical Fiber. Mr. Curran was appointed as Corning's first innovation officer in August 2012. Age 60.

Jeffrey W. Evenson Executive Vice President and Chief Strategy Officer

Dr. Evenson joined Corning in 2011 as senior vice president and operations chief of staff. In 2015, he was named Chief Strategy Officer. He serves on the Management Committee and oversees corporate strategy, corporate communications, and advanced analytics. Prior to joining Corning, Dr. Evenson was a senior vice president with Sanford C. Bernstein, where he served as a senior analyst. Before that, Dr. Evenson was a partner at McKinsey & Company, where he led technology and market assessment for early-stage technologies. He was appointed executive vice president in 2018. Age 53.

Clark S. Kinlin Executive Vice President

Mr. Kinlin joined Corning in 1981 in the Specialty Materials division. From 1985 to 1995 he worked in the Optical Fiber division. In 1995, he joined Corning Consumer Products. In 2000, Mr. Kinlin was named president, Corning International Corporation and, in 2003, he was appointed as general manager for Greater China. From April 2007 to March 2008, he was chief operating officer, Corning Cable Systems, (now Corning Optical Communications) with responsibility for global sales, marketing, and operations. He was named president and chief executive officer of Corning Cable Systems in April 2008. He was appointed executive vice president in 2012. Age 59.

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Lawrence D. McRae Vice Chairman and Corporate Development Officer

Mr. McRae joined Corning in 1985 and has held a broad range of leadership positions in various finance, sales, marketing, and general management across Corning's businesses. He was appointed vice president Corporate Development in 2000, senior vice president Corporate Development in 2003, senior vice president Strategy and Corporate Development in 2005, and executive vice president Strategy and Corporate Development in 2010. Mr. McRae has served on Corning's management committee since 2002 and was named vice chairman in 2015. Age 60.

David L. Morse Executive Vice President and Chief Technology Officer

Dr. Morse joined Corning in 1976 as a composition scientist in glass research. In 1985, he was named senior research associate, manager of consumer products development in 1987 and director of materials research in 1990. He served in a variety of technology leadership positions in organic materials and telecommunications before joining corporate research in 2001. Prior to his current role, he served as senior vice president and director, corporate research. Dr. Morse was appointed to his current position in 2012. He is a member of the National Academy of Engineering. Age 66.

Eric S. Musser Executive Vice President, Corning Technologies and International

Mr. Musser joined Corning in 1986 and served in a variety of manufacturing and general management roles in Corning's optical communications businesses. In 2005, he was named vice president and general manager of Optical Fiber. Mr. Musser served as general manager, Corning Greater China 2007-2012 and president of Corning International 2012-2014. He was appointed executive vice president in 2014. Age 59.

Christine M. Pambianchi Executive Vice President, People and Digital

Ms. Pambianchi joined Corning in 2000 as division human resource manager, Corning Optical Fiber, and later was named director, Human Resources, Corning Optical Communications. She was named division vice president, Business Human Resource in 2004. She has led the Human Resources function since January 2008 when she was named vice president, Human Resources. Ms. Pambianchi was appointed as senior vice president, Human Resources, in 2010 and to her current role in 2018. Age 50.

Edward A. Schlesinger Senior Vice President and Corporate Controller

Mr. Schlesinger joined Corning in 2013 as senior vice president and chief financial officer of Corning Optical Communications. He was elected vice president and corporate controller in September 2015 and principal accounting officer in December 2015. He was named senior vice president in February 2019. Prior to joining Corning, Mr. Schlesinger served as Vice President, Finance and Sector Chief Financial Officer for the Climate Solutions Sector for Ingersoll Rand. Mr. Schlesinger has a financial career that spans more than 20 years garnering extensive expertise in

technical financial management and reporting. Age 51.

Lewis A. Steverson Executive Vice President and General Counsel

Mr. Steverson joined Corning in 2013 as senior vice president and general counsel. Prior to joining Corning, Mr. Steverson served as senior vice president, general counsel, and corporate secretary of Motorola Solutions, Inc. During his 18 years with Motorola, he held a variety of law leadership roles across the company's numerous business units. Prior to Motorola, Mr. Steverson was in private practice at the law firm of Arnold & Porter. He was appointed executive vice president in 2018. Age 55.

R. Tony Tripeny Executive Vice President and Chief Financial Officer

Mr. Tripeny joined Corning Cable Systems in 1985 as the corporate accounting manager and became the Keller, Texas facility's plant controller in 1989. In 1993, he was appointed equipment division controller and, in 1996, corporate controller. Mr. Tripeny was appointed chief financial officer of Corning Cable Systems in July 2000 and, in 2003, he took on the additional role of group controller, Telecommunications. He was appointed division vice president, operations controller in August 2004, vice president, corporate controller in October 2005, and senior vice president and principal accounting officer in April 2009. Mr. Tripeny was then appointed as Corning's senior vice president and chief financial officer in September 2015. He was appointed executive vice president in 2018. Age 59.

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Wendell P. Weeks Chairman, Chief Executive Officer and President

Mr. Weeks joined Corning in 1983 in the finance group. He has held a variety of financial, business development, commercial, and general management roles. In 1993 he was named general manager of external development in Corning's telecommunications business. He was named vice president and general manager of the Optical Fiber business in 1996 and president, Corning Optical Communications in 2001. Mr. Weeks has been a member of Corning's Board of Directors since December 2000. He became Corning's president and chief operating officer in 2002. He was named chief executive officer in April 2005 and chairman of the board in April 2007. He added the title of president in 2010. Mr. Weeks is a director of Merck & Co. Inc. and Amazon.com, Inc. Age 59.

Document Availability

A copy of Corning's 2018 Annual Report on Form 10-K filed with the Securities and Exchange Commission is available upon written request to Corporate Secretary, Corning Incorporated, One Riverfront Plaza, Corning, NY 14831. The Annual Report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments pursuant to Section 13(a) or 15(d) of the Exchange Act of 1934 and other filings are available as soon as reasonably practicable after such material is electronically filed or furnished to the SEC, and can be accessed electronically free of charge at www.SEC.gov, or through the Investor Relations page on Corning's website at www.corning.com. The information contained on the Company's website is not included in, or incorporated by reference into, this Annual Report on Form 10-K.

Other

Additional information in response to Item 1 is found in Note 17 (Reportable Segments) to the Consolidated Financial Statements and in Item 6 (Selected Financial Data).

Item 1A. Risk Factors

We operate in rapidly changing economic, political, and technological environments that present numerous risks. Our operations and financial results are subject to risks and uncertainties, including those described below, that could adversely affect our business, financial condition, results of operations, cash flows, our ability to successfully execute our strategy and capital allocation framework, and the trading price of our common stock or debt. The following discussion identifies the most significant factors that may adversely affect our business, operations, financial position

or future financial performance. This information should be read in conjunction with our MD&A and the consolidated financial statements and related notes incorporated by reference into this report. The following discussion of risks is not all inclusive but is designed to highlight what we believe are important factors to consider, as these factors could cause our future results to differ from those in our forward-looking statements and from historical trends.

As a global company, we face many risks which could adversely impact our operations and financial results

We are a global company and derive a substantial portion of our revenues from, and have significant operations, outside of the United States. Our international operations include manufacturing, assembly, sales, research and development, customer support, and shared administrative service centers. Additionally, we rely on a global supply chain for key components and capabilities that are central to our ability to invent, make and sell products.

Compliance with laws and regulations increases our costs. We are subject to both U.S. laws and local laws which, among other things, include data privacy requirements, employment and labor laws, tax laws, anti-competition regulations, prohibitions on payments to governmental officials, import and trade restrictions and export requirements. Non-compliance or violations could result in fines, criminal sanctions against us, our officers or employees, and prohibitions on the conduct of our business. Such violations could result in prohibitions on our ability to offer our products and services in one or more countries and could also materially damage our reputation, our brand, our international expansion efforts, our ability to attract and retain employees, our business and operating results. Our success depends, in part, on our ability to anticipate and manage these risks.

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We are also subject to a variety of other risks in managing a global organization, including those related to:

- The economic and political conditions in each country or region;
- Complex regulatory requirements affecting international trade and investment, including anti-dumping laws, export controls, the Foreign Corrupt Practices Act and local laws prohibiting improper payments. Our operations may be adversely affected by changes in the substance or enforcement of these regulatory requirements, and by actual or alleged violations of them;
- Fluctuations in currency exchange rates, convertibility of currencies and restrictions involving the movement of funds between jurisdictions and countries;
- Governmental protectionist policies and sovereign and political risks that may adversely affect Corning's profitability and assets;
- Tariffs, trade duties and other trade barriers including anti-dumping duties;
- Geographical concentration of our factories and operations, and regional shifts in our customer base;
- Periodic health epidemic concerns;
- Political unrest, confiscation or expropriation of assets by foreign governments, terrorism and the potential for other hostilities;
- Difficulty in protecting intellectual property, sensitive commercial and operations data, and information technology systems;
- Differing legal systems, including protection and treatment of intellectual property and patents;
- Complex, or competing tax regimes;
- Difficulty in collecting obligations owed to us;
- Natural disasters such as floods, earthquakes, tsunamis and windstorms; and
- Potential loss of utilities or other disruption affecting manufacturing.

Corning's Display Technologies segment generates a significant amount of the Company's profits and cash flow. Any significant decrease in display glass pricing could have a material and negative impact on our financial results

Corning's ability to generate profits and operating cash flow depends largely on the profitability of our display glass business, which is subject to continuous pricing pressure due to industry competition, potential over-capacity, and development of new technologies. If we are not able to achieve proportionate reductions in costs and increases in volume to offset potential pricing pressures it could have a material adverse impact on our financial results.

Because we have a concentrated customer base in each of our businesses, our sales could be negatively impacted by the actions or insolvency of one or more key customers, as well as our ability to retain these customers

A relatively small number of end-customers accounted for a high percentage of net sales in each of our reportable segments. Mergers and consolidations between customers could result in further concentration of Corning's customer base. Further concentration, or the loss or insolvency of a key customer, could result in a substantial loss of sales and

reduction in anticipated in cash flows.

The following table details the number of combined customers of our segments that accounted for a large percentage of segment net sales:

	Number of combined customers	% of total segment net sales in 2018
Display Technologies	4	70%
Optical Communications	1	18%
Specialty Materials	3	58%
Environmental Technologies	3	78%
Life Sciences	2	44%

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Business disruptions could affect our operating results

A major earthquake, fire or other catastrophic event that results in the destruction or disruption of any of our critical facilities could severely affect our ability to conduct normal business operations and, as a result, our future financial results could be materially and adversely affected. For example, certain manufacturing sites require high quality, continuous, and uninterrupted power and access to industrial water. Unplanned outages could have a material negative impact on our operations and ability to supply our customers.

Additionally, a significant amount of the specialized manufacturing capacity for our reportable segments is concentrated in single-site locations. Due to the specialized nature of the assets, in the event such a location experiences disruption, it may not be possible to find replacement capacity quickly or substitute production from other facilities. Accordingly, disruption at a single-site manufacturing operation could significantly impact Corning's ability to supply its customers and could produce a near-term severe impact on our individual businesses and the Company as a whole.

Geopolitical events, as well as other events outside of Corning's control, could cause a disruption to our manufacturing operations and adversely impact our customers, resulting in a negative impact to Corning's net sales, net income, asset values and liquidity

A natural disaster, epidemic, labor strike, war or political unrest in regions where we operate could adversely affect Corning's ability to supply our customers and impact the value of our assets. Such events may also impact our customers' facilities and reduce our sales to such customers. For example, a sizeable portion of Corning's glass manufacturing capacity is in South Korea and we generate a significant portion of our sales through two South Korean customers. Deterioration of the geopolitical climate in such a region could cause a disruption to our manufacturing operations and adversely impact our customers, resulting in a negative impact to Corning's net sales, net income, asset values and liquidity.

We may experience difficulties in enforcing our intellectual property rights, which could result in loss of market share, and we may be subject to claims of infringement of the intellectual property rights of others

We rely on patent and trade secret laws, copyright, trademark, confidentiality procedures, controls and contractual commitments to protect our intellectual property rights. Despite our efforts, these protections may be limited and we may encounter difficulties in protecting our intellectual property rights or obtaining rights to additional intellectual

property necessary to permit us to continue or expand our businesses. We cannot provide assurance that the patents that we hold or may obtain will provide meaningful protection against our competitors. Changes in or enforcement of laws concerning intellectual property may affect our ability to prevent or address the misappropriation of, or the unauthorized use of, our intellectual property, potentially resulting in loss of market share. Litigation may be necessary to enforce our intellectual property rights. Litigation is inherently uncertain and outcomes are often unpredictable. If we cannot protect our intellectual property rights against unauthorized copying or use, or other misappropriation, we may not remain competitive.

The intellectual property rights of others could inhibit our ability to introduce new products. Other companies hold patents on technologies used in our industries and are aggressively seeking to expand, enforce and license their patent portfolios. We periodically receive notices from, or have lawsuits filed against us by third parties claiming infringement, misappropriation or other misuse of their intellectual property rights and/or breach of our agreements with them. These third parties often include entities that do not have the capabilities to design, manufacture, or distribute products or that acquire intellectual property like patents for the sole purpose of monetizing their acquired intellectual property through asserting claims of infringement and misuse. Such claims of infringement or misappropriation may result in loss of revenue, substantial costs, or lead to monetary damages or injunctive relief against us.

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Information technology dependency and cyber security vulnerabilities could lead to reduced revenue, liability claims, or competitive harm

The Company is dependent on information technology systems and infrastructure, including cloud-based services, ("IT systems") to conduct its business. Our IT systems may be vulnerable to disruptions from human error, outdated applications, computer viruses, natural disasters, unauthorized access, cyber-attack and other similar disruptions. Any significant disruption, breakdown, intrusion, interruption or corruption of these systems or data breaches could cause the loss of data or intellectual property, equipment damage, downtime, and/or safety related issues and could have a material adverse effect on our business. Like other global companies, we have, from time to time, experienced incidents related to our IT systems, and expect that such incidents will continue, including malware and computer virus outbreaks, unauthorized access, systems failures and disruptions. We have measures and defenses in place against such events, but we may not be able to prevent, immediately detect, or remediate all instances of such events. A material security breach or disruption of our IT systems could result in theft, unauthorized use, or publication of our intellectual property and/or confidential business information, harm our competitive position, disrupt our manufacturing, reduce the value of our investment in research and development and other strategic initiatives, impair our ability to access vendors, suppliers and cloud-based services, or otherwise adversely affect our business.

Additionally, we believe that utilities and other operators of critical infrastructure that serve our facilities face heightened security risks, including cyber-attack. In the event of such an attack, disruption in service from our utility providers could disrupt our manufacturing operations which rely on a continuous source of power (electrical, gas, etc.).

We may not earn a positive return from our research, development and engineering investments

Developing our products through our innovation model of research and development is expensive and often involves a long investment cycle. We make significant expenditures and investments in research, development and engineering that may not earn an economic return. If our investments do not provide a pipeline of products or technologies that our customers demand or lower our manufacturing costs, it could negatively impact our revenues and operating margins both near- and long-term.

We have significant exposure to foreign currency movements

A large portion of our sales, profit and cash flows are transacted in non-U.S. dollar currencies and we expect that we will continue to experience fluctuations in the US Dollar value of these activities if it is not possible or cost effective

to hedge our currency exposures or should we elect not to hedge certain currency exposures. Alternatively, we may experience gains or losses if the underlying exposure which we have hedged changes (increases or decreases) and we are unable to reverse, unwind, or terminate the hedges concurrent with changes in the underlying notional exposure.

Our ultimate realized loss or gain with respect to currency fluctuations will generally depend on the size and type of cross-currency exposures that we have, the exchange rates associated with these exposures and changes in those rates, whether we have entered into foreign currency contracts to offset these exposures and other factors.

Our hedge portfolio may reduce our ability to respond to price moves by our Display Technologies segment competitors. Foreign currency movements may impact our competitive cost position relative to our largest, Japan-based competitors in the Display Technologies segment. The profitability of customers may also be impacted as they typically purchase from us in Japanese yen and they sell in various currencies.

These factors could materially impact our results of operations, anticipated future results, financial position and cash flows, the timing of which is variable and generally outside of our control.

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We may have significant exposure to counterparties of our related derivatives portfolio

We maintain a significant portfolio of over the counter derivatives to hedge our projected currency exposure to the Japanese yen, New Taiwan dollar, South Korean won, Chinese yuan and euro. We are exposed to potential losses in the event of non-performance by our counterparties to these derivative contracts. Any failure of a counterparty to pay on such a contract when due could materially impact our results of operations, financial position, and cash flows.

If we are unable to obtain certain specialized equipment, raw and batch materials or natural resources required in our products or processes, our business will suffer

Our ability to meet customer demand depends, in part, on our ability to obtain timely and adequate delivery of equipment, parts, components and raw materials from our suppliers. We may experience shortages that could adversely affect our operations. Certain manufacturing equipment, components and raw materials are available only from single or limited sources, and we may not be able to find alternate sources in a timely manner. A reduction, interruption or delay of supply, or a significant increase in the price for supplies, such as manufacturing equipment, precious metals, raw materials, utilities including energy and industrial water, could have a material adverse effect on our businesses.

We use specialized raw materials from single-source suppliers (e.g., specific mines or quarries) and natural resources (e.g., helium) in certain products and processes. If a supplier is unable to provide the required raw materials or the natural resource is in scarce supply or not readily available, we may be unable to change our product composition or manufacturing process to prevent disruption to our business.

We have incurred, and may in the future incur, goodwill and other intangible asset impairment charges

At December 31, 2018, Corning had goodwill and other intangible assets of approximately $3.2 billion. While we believe the estimates and judgments about future cash flows used in the goodwill impairment tests are reasonable, we cannot provide assurance that additional impairment charges in the future will not be required if the expected cash flow as projected by management do not occur, especially if an economic downturn occurs and continues for a lengthy period or becomes severe, or if the Company’s acquisitions and investments fail to achieve expected returns.

Changes in our effective tax rate or tax liability may have an adverse effect on our results of operations

Our effective tax rate could be adversely impacted by several factors, including:

- Changes in the relative amounts of income before taxes in the various jurisdictions in which we operate;
- Changes in tax laws, tax treaties and regulations or the interpretation of them, including the impact of the Tax Cuts and Jobs Act (the "2017 Tax Act") which was passed by the U.S. Congress and signed into law on December 22, 2017;
- Changes to our assessment about the realizability of our deferred tax assets that are based on estimates of our future results, the prudence and feasibility of possible tax planning strategies, and the economic and political environments in which we do business;
- The outcome of current and future tax audits, examinations, or administrative appeals;
- Changes in generally accepted accounting principles that affect the accounting for taxes; and
- Limitations or adverse findings regarding our ability to do business in some jurisdictions.

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We may have additional tax liabilities

We are subject to income taxes in the U.S. and many foreign jurisdictions, and are commonly audited by various tax authorities. In the ordinary course of our business, there are many transactions and calculations where the ultimate tax determination is uncertain. Significant judgment is required in determining our worldwide provision for income taxes. Although we believe our tax estimates are reasonable, the final determination of tax audits and any related litigation could be materially different from our historical income tax provisions and accruals. The results of an audit or litigation could have a material effect on our financial statements in the period or periods for which that determination is made.

The 2017 Tax Act significantly impacted how U.S. global corporations are taxed. Among other things, the 2017 Tax Act required companies to pay a one-time mandatory tax on unrepatriated earnings of certain foreign subsidiaries that were previously tax deferred (the “toll charge”) and created new taxes on certain foreign sourced earnings. Significant guidance has been issued with the intention of clarifying the new tax provisions. To date, a considerable amount of this guidance has been issued in the form of proposed regulations. The volume and complexity of the proposed regulations as well as the impact of final regulations which were recently issued, has resulted in many questions regarding how the effect of such regulations should be considered. We continue to evaluate the impact of this legislation and certain changes could have a material adverse impact on our tax expense and cash flow.

Our innovation model depends on our ability to attract and retain specialized experts in our core technologies

Our innovation model requires us to employ highly specialized experts in glass science, ceramic science, and optical physics to conduct our research and development and engineer our products and design our manufacturing facilities. The loss of the services of any member of our key research and development or engineering team without adequate replacement, or the inability to attract new qualified personnel, could have a material adverse effect on our operations and financial performance.

We are subject to strict environmental regulations and regulatory changes that could result in fines or restrictions that interrupt our operations

Some of our manufacturing processes generate chemical waste, waste water, other industrial waste or greenhouse gases, and we are subject to numerous laws and regulations relating to the use, storage, discharge and disposal of such substances. We have installed anti-pollution equipment for the treatment of chemical waste and waste water at our facilities. We have taken steps to control the amount of greenhouse gases created by our manufacturing operations. However, we cannot provide assurance that environmental claims will not be brought against us or that

government regulators will not take steps to adopt more stringent environmental standards.

Any failure on our part to comply with any present or future environmental regulations could result in the assessment of damages or imposition of fines against us, or the suspension/cessation of production or operations. In addition, environmental regulations could require us to acquire costly equipment, incur other significant compliance expenses or limit or restrict production or operations and thus materially and negatively affect our financial condition and results of operations.

Changes in regulations and the regulatory environment in the U.S. and other countries, such as those resulting from the regulation and impact of global warming and CO_2 abatement, may affect our businesses and their results in adverse ways by, among other things, substantially increasing manufacturing costs, limiting availability of scarce resources, especially energy, or requiring limitations on production and sale of our products or those of our customers.

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Current or future litigation or regulatory investigations may harm our financial condition or results of operations

As a global technology and manufacturing company, we are engaged in various litigation and regulatory matters. Litigation and regulatory proceedings may be uncertain, and adverse rulings could occur, resulting in significant liabilities, penalties or damages. Such current or future substantial legal liabilities or regulatory actions could have a material adverse effect on our business, financial condition, cash flows and reputation.

Our global operations are subject to extensive trade and anti-corruption laws and regulations

Due to the international scope of our operations, we are subject to a complex system of import- and export-related laws and regulations, including U.S. regulations issued by Customs and Border Protection, the Bureau of Industry and Security, the Office of Anti-boycott Compliance, the Directorate of Defense Trade Controls and the Office of Foreign Assets Control, as well as the counterparts of these agencies in other countries. Any alleged or actual violation by an employee or the Company may subject us to government scrutiny, investigation and civil and criminal penalties, and may limit our ability to import or export our products or to provide services outside the United States. We cannot predict the nature, scope or effect of future regulatory requirements to which our operations might be subject or the way existing laws might be administered or interpreted.

In addition, the U.S. Foreign Corrupt Practices Act and similar foreign anti-corruption laws generally prohibit companies and their intermediaries from making improper payments or providing anything of value to improperly influence foreign government officials for the purpose of obtaining or retaining business, or obtaining an unfair advantage. Recent years have seen a substantial increase in the global enforcement of anti-corruption laws. Our continued operation and expansion outside the United States, including in developing countries, could increase the risk of alleged violations. Violations of these laws may result in severe criminal or civil sanctions, could disrupt our business, and result in an adverse effect on our reputation, business and results of operations or financial condition.

Moreover, several of our related partners are domiciled in areas of the world with laws, rules and business practices that differ from those in the United States, and we face the reputational and legal risk that our related partners may violate applicable laws, rules and business practices.

International trade policies may negatively impact our ability to sell and manufacture our products outside of the U.S.

Government policies on international trade and investment such as import quotas, tariffs, and capital controls, whether adopted by individual governments or addressed by regional trade blocs, can affect the demand for our products and services, impact the competitive position of our products or prevent us (including our equity affiliates/joint ventures) from being able to sell and/or manufacture products in certain countries. The implementation of more restrictive trade policies, such as higher tariffs or new barriers to entry, in countries in which we sell large quantities of products and services could negatively impact our business, results of operations and financial condition. For example, a government's adoption of "buy national" policies or retaliation by another government against such policies could have a negative impact on our results of operations. These policies also affect our equity companies.

Item 1B. Unresolved Staff Comments

None.

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Item 2. Properties

Corning operates 108 manufacturing plants and processing facilities in 15 countries, of which approximately 35% are in the U.S. We own 64% of our executive and corporate buildings of which 80% are located in and around Corning, New York. The Company also owns over 68% of our sales and administrative office square footage, 86% of our research and development square footage, 72% of our manufacturing square footage, and over 10% of our warehousing square footage.

For the years ended 2018, 2017 and 2016, we invested a total of $5.2 billion, primarily in facilities outside of the United States.

Manufacturing, sales and administrative, and research and development facilities have an aggregate floor space of approximately 43.2 million square feet. Distribution of this total area follows:

(million square feet)	Total	Domestic	Foreign
Manufacturing	35.5	9.0	26.5
Sales and administrative	2.6	1.8	0.8
Research and development	2.3	1.9	0.4
Warehouse	2.8	2.4	0.4
Total	43.2	15.1	28.1

Total assets and capital expenditures by operating segment are included in Note 17 (Reportable Segments) to the Consolidated Financial Statements. Information concerning lease commitments is included in Note 12 (Commitments, Contingencies and Guarantees) to the Consolidated Financial Statements.

Item 3. Legal Proceedings

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 in Note 12 (Commitments and Contingencies) to the Consolidated Financial Statements. 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.

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 December 31, 2018 and December 31, 2017, Corning had accrued approximately $30 million (undiscounted) and $38 million (undiscounted), respectively, for the 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.

Item 4. Mine Safety Disclosure

None.

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PART II

Item 5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

(a) Corning Incorporated common stock is listed on the New York Stock Exchange. In addition, it is traded on the Boston, Midwest and Philadelphia stock exchanges. Common stock options are traded on the Chicago Board Options Exchange. The ticker symbol for Corning Incorporated is “GLW”.

As of December 31, 2018, there were approximately 14,599 registered holders of common stock and approximately 468,550 beneficial shareholders.

Performance Graph

The following graph illustrates the cumulative total shareholder return over the last five years of Corning's common stock, the S&P 500 and the S&P Communications Equipment Companies. The graph includes the capital weighted performance results of those companies in the communications equipment company classification that are also included in the S&P 500.

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(b) Not applicable.

(c) The following table provides information about our purchases of our common stock during the fiscal fourth quarter of 2018:

Issuer Purchases of Equity Securities

Period	Number of shares purchased	Average price paid per share	Number of shares purchased as part of publicly announced plans or programs (1)	Approximate dollar value of shares that may yet be purchased under the plans or programs (1)
October 1-31, 2018	3,383,124	$ 31.95	3,338,983	
November 1-30, 2018	3,676,736	$ 32.10	3,658,311	
December 1-31, 2018	4,398,326	$ 30.64	4,378,063	
Total	11,458,186	$ 31.49	11,375,357	$ 1,348,213,211

(1) This column reflects the following transactions during the year ended December 31, 2018: (i) the deemed surrender to us of 31,702 shares of common stock to satisfy tax withholding obligations in connection with the vesting of employee restricted stock units; (ii) the surrender to us of 50,575 shares of common stock to satisfy tax withholding obligations in connection with the vesting of restricted stock issued to employees; (iii) the deemed surrender to us of 552 shares of common stock to pay the exercise price and to satisfy tax withholding obligations in connection with the exercise of employee stock options; and (iv) the purchase of 11,375,357 shares of common stock under the 2018 Repurchase Programs.

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Item 6. Selected Financial Data (Unaudited)

(In millions, except per share amounts and number of employees)

	Years ended December 31,				
	2018	2017	2016	2015	2014
Results of operations					
Net sales	$ 11,290	$ 10,116	$ 9,390	$ 9,111	$ 9,715
Research, development and engineering expenses	$ 993	$ 864	$ 736	$ 745	$ 811
Equity in earnings of affiliated companies	$ 390	$ 361	$ 284	$ 299	$ 266
Net income (loss) attributable to Corning Incorporated (1)(2)	$ 1,066	$ (497)	$ 3,695	$ 1,339	$ 2,472
Earnings (loss) per common share attributable to Corning Incorporated:					
Basic	$ 1.19	$ (0.66)	$ 3.53	$ 1.02	$ 1.82
Diluted	$ 1.13	$ (0.66)	$ 3.23	$ 1.00	$ 1.73
Cash dividends declared per common share	$ 0.72	$ 0.62	$ 0.54	$ 0.36	$ 0.52
Shares used in computing per share amounts:					
Basic earnings per common share	816	895	1,020	1,219	1,305
Diluted earnings per common share	941	895	1,144	1,343	1,427
Financial position					
Working capital	$ 3,723	$ 5,618	$ 6,297	$ 5,455	$ 7,914
Total assets	$ 27,505	$ 27,494	$ 27,899	$ 28,527	$ 30,041
Long-term debt	$ 5,994	$ 4,749	$ 3,646	$ 3,890	$ 3,205
Total Corning Incorporated shareholders’ equity	$ 13,792	$ 15,698	$ 17,893	$ 18,788	$ 21,579
Selected data					
Capital expenditures	$ 2,242	$ 1,804	$ 1,130	$ 1,250	$ 1,076
Depreciation and amortization	$ 1,293	$ 1,158	$ 1,195	$ 1,184	$ 1,200
Number of employees	51,500	46,200	40,700	35,700	34,600

(1) Year ended December 31, 2017 includes the impact of the 2017 Tax Act, including a provisional toll charge ($1.1 billion) and provisional re-measurement of deferred tax balances due to the reduction in Corning's tax rate ($347 million).
(2) Year ended December 31, 2016 includes a $2.7 billion non-taxable gain on the strategic realignment of our ownership interest in Dow Corning.

Reference should be made to the Notes to the Consolidated Financial Statements and Management's Discussion and Analysis of Financial Condition and Results of Operations.

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Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Organization of Information

Management's Discussion and Analysis provides a historical and prospective narrative on the Company's financial condition and results of operations. This discussion includes the following sections:

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

OVERVIEW

Strategy and Capital Allocation Framework

In October 2015, Corning announced a strategy and capital allocation framework (the "Framework") that reflects the Company's financial and operational strengths, as well as its ongoing commitment to increasing shareholder value. The Framework outlines our leadership priorities, and articulates the opportunities we see across our businesses. We designed the Framework to create significant value for shareholders by focusing our portfolio and leveraging our financial strength. Under the Framework we target generating $26 billion to $30 billion of cash through 2019, returning more than $12.5 billion to shareholders and investing $10 billion to extend our leadership positions and deliver growth.

Our probability of success increases as we invest in our world-class capabilities. Corning is concentrating approximately 80% of its research, development and engineering investment and capital spending on a cohesive set of three core technologies, four manufacturing and engineering platforms, and five market-access platforms. This strategy will allow us to quickly apply our talents and repurpose our assets as needed.

Performance against the Framework

Since introducing the Framework, we have distributed $11.8 billion to shareholders through share repurchases and dividends, and increased the annual dividend by 11.1% in 2019, 16.1% in 2018, 14.8% in 2017 and 12.5% in 2016 as part of our ongoing commitment to return cash to our investors.

Highlights of progress in Corning's market-access platforms include:

- Securing contracts with industry leaders in the carrier and data center segments that will add significant sales in 2019 and beyond, and completing the acquisition of CMD in Optical Communications;
- Extending the company's leadership in mobile consumer electronics with the launch and adoption of Gorilla Glass 6 as well as other cover glass and sensing technology innovations;
- Gaining significant new sales and platforms for gasoline particulate filters and strong pull for Gorilla Glass for Automotive solutions, particularly the industry's first AutoGrade Glass Solutions for automotive interiors, reaching more than 55 platforms to date;
- Increasing our shipments of Valor Glass by four times year-over-year, indicating progress toward certification across more pharmaceutical companies in Life Sciences Vessels; and
- Reaching stable returns in Display Technologies as the glass pricing environment continued to improve and Corning extended global leadership by successfully ramping the world's first Gen 10.5 LCD glass plant.

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2018 Results

Net sales in the year ended December 31, 2018 were $11.3 billion, an increase of $1.2 billion, or 12%, when compared to the year ended December 31, 2017, driven by sales increases across all segments.

For the year ended December 31, 2018, we generated net income of $1.1 billion, or $1.13 per share, compared to a net loss of $0.5 billion, or $(0.66) per share, for 2017. When compared to 2017, the $1.6 billion increase in net income was primarily due to the following items (amounts presented after tax):

- The absence of $1.5 billion in tax reform adjustments related to the 2017 Tax Act;
- Higher segment net income in our Optical Communications, Environmental Technologies, Specialty Materials and Life Sciences segments, up $123 million, $43 million, $12 million and $22 million, respectively; and
- The positive impact of $48 million in tax adjustments, primarily related to changes in the valuation allowances on deferred tax assets offset by the preliminary 2013-2014 IRS audit settlement.

Partially offsetting these events were the following items:

- An increase of $105 million in legal expenses, driven by a ruling in an intellectual property lawsuit and developments in civil litigation matters;
- An impact of $99 million resulting from an increase of mark-to-market loss for our defined benefit pension plans; and
- Lower segment net income in our Display Technologies and All Other segments in the amount of $53 million and $22 million, respectively.

Diluted earnings per share increased by $1.79 per share, or 271%, when compared to 2017, driven by the increase in net income described above, coupled with the repurchase of 74.8 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 2018, did not materially impact Corning’s consolidated net income in the year ended December 31, 2018 when compared to the year ended December 31, 2017.

2019 Corporate Outlook

We believe 2019 will be another year of strong growth and investment, consistent with our Strategy and Capital Allocation Framework. In our Display Technologies segment, we expect full year 2019 price declines to improve further to a mid-single digit percentage. We anticipate Corning's display glass volume will grow faster than the expected display glass market growth of mid-single digits, driven by television screen size growth and the ramp of our Gen 10.5 facility in China. In the Optical Communications segment, we expect sales to increase by low-teens in percentage terms, including the impact of a full year of sales from the acquisition of 3M's Communication Markets Division. We expect high-single digit sales growth in our Environmental Technologies segment. We expect growth in the Specialty Materials segment, the rate of which will depend on the adoption of our innovations. We anticipate low to mid-single digit percentage growth in sales for the Life Sciences segment.

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RESULTS OF OPERATIONS

Selected highlights from our operations follow (in millions):

	2018	2017	2016	% change 18 vs. 17	% change 17 vs. 16
Net sales	$ 11,290	$ 10,116	$ 9,390	12	8
Gross margin (gross margin %)	$ 4,461 40%	$ 4,020 40%	$ 3,763 40%	11	7
Selling, general and administrative expenses (as a % of net sales)	$ 1,799 16%	$ 1,473 15%	$ 1,462 16%	22	1
Research, development and engineering expenses (as a % of net sales)	$ 993 9%	$ 864 9%	$ 736 8%	15	17
Equity in earnings of affiliated companies (as a % of net sales)	$ 390 3%	$ 361 4%	$ 284 3%	8	27
Translated earnings contract loss, net (as a % of net sales)	$ (93) (1)%	$ (121) (1)%	$ (448) (5)%	23	73
Gain on realignment of equity investment (as a % of net sales)			$ 2,676 28%	*	*
Income before income taxes (as a % of net sales)	$ 1,503 13%	$ 1,657 16%	$ 3,692 39%	(9)	(55)
(Provision) benefit for income taxes (as a % of net sales)	$ (437) (4)%	$ (2,154) (21)%	$ 3 *	80	*
Net income (loss) attributable to Corning Incorporated (as a % of net sales)	$ 1,066 9%	$ (497) (5)%	$ 3,695 39%	*	*

* Percent change not meaningful.

Segment Net Sales

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

	Years ended December 31,			% change	% change
	2018	2017	2016	18 vs. 17	17 vs. 16
Display Technologies	$ 3,276	$ 3,137	$ 3,288	4%	(5)%
Optical Communications	4,192	3,545	3,005	18%	18%
Specialty Materials	1,479	1,403	1,124	5%	25%
Environmental Technologies	1,289	1,106	1,032	17%	7%
Life Sciences	946	879	839	8%	5%
All Other	216	188	152	15%	24%
Total segment net sales	$ 11,398	$ 10,258	$ 9,440	11%	9%

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For the year ended December 31, 2018, segment net sales increased by $1.1 billion, or 11%, when compared to the same period in 2017. The primary sales drivers by segment were as follows:

- Display Technologies segment net sales increased $139 million compared to the prior year. Total display glass market volume was up in 2018. Our volume growth in this market more than offset price declines on a year-over-year basis. 2018 was the best pricing environment in more than a decade, achieving the important milestone of mid-single digit year-over-year declines during the second half of the year;
- An increase of $647 million in the Optical Communications segment, due to higher sales of carrier and enterprise network products, up $364 million and $283 million, respectively. The acquisition of CMD driving $200 million of the increase in sales;
- An increase of $76 million in the Specialty Materials segment driven by higher net sales of Gorilla Glass products, advanced optics and other specialty glass;
- An increase of $183 million in the Environmental Technologies segment, driven by sales growth in all categories including sales of gas particulate filters; and
- An increase of $67 million in the Life Sciences segment, as the business continued to outpace the market.

Movements in foreign exchange rates did not materially impact Corning's consolidated net sales in the year ended December 31, 2018, respectively, when compared to the same period in 2017.

For the year ended December 31, 2017, net sales increased by $818 million, or 9%, when compared to the same period in 2016. The primary sales drivers by segment were as follows:

- A decrease of $151 million in the Display Technologies segment, driven by price declines of approximately 10%, partially offset by an increase in volume in the mid-single digits in percentage terms;
- An increase of $540 million in the Optical Communications segment, due to higher sales of carrier and enterprise network products, up $446 million and $94 million, respectively, combined with the absence of production issues related to the implementation of new manufacturing software in the first quarter of 2016. Strong growth in the North American market drove the increase in carrier network products;
- An increase of $279 million in the Specialty Materials segment, driven by strong growth in segment net sales of Corning Gorilla Glass products, combined with an increase of $42 million in advanced optics products;
- An increase of $74 million in the Environmental Technologies segment, driven by higher net sales of automotive products, up $42 million, due to market strength in Europe, China and Asia, and initial commercial sales of gas particulate filters. Diesel product sales increased $32 million with higher demand for heavy-duty diesel products in North America and Asia;
- An increase of $40 million in the Life Sciences segment, driven by higher sales in North America and China; and
- An increase of $36 million in the All Other segment, driven by an increase in sales in our emerging businesses.

Movements in foreign exchange rates did not materially impact Corning's consolidated net sales in the year ended December 31, 2017, respectively, when compared to the same period in 2016.

In 2018, 2017 and 2016, sales in international markets accounted for 69%, 69% and 72%, respectively, of total net sales.

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.

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Gross Margin

In the year ended December 31, 2018, gross margin dollars increased by $441 million, or 11%, and gross margin as a percentage of net sales was consistent when compared to the same period last year. The increase in gross margin dollars was primarily driven by the following items:

- Higher sales in the Optical Communications segment, driven by growth in Carrier and Enterprise products, resulting in increased gross margin of $291 million;
- An increase in Gorilla Glass and advanced optics product volume which contributed $48 million to gross margin; and
- Higher sales in the Environmental technologies segment drove an $85 million increase.

Gross margin increases were partially offset by higher costs related to capacity expansions across multiple business segments and display glass price declines.

Movements in foreign exchange rates did not materially impact Corning's consolidated gross margin in the year ended December 31, 2018, respectively, when compared to the same period in 2017.

In the year ended December 31, 2017, gross margin dollars increased by $257 million, or 7%, and gross margin as a percentage of net sales remained consistent at 40%, when compared to the same period last year. The increase in gross margin dollars was primarily driven by the following items:

- Higher volume in the Display Technologies segment, offset by higher costs related to capacity expansion;
- Higher volume in the Optical Communications segment, driven by growth in North America and Europe, partially offset by higher manufacturing expenses related to capacity expansion;
- An increase in Gorilla Glass and advanced optics product volume, slightly offset by higher raw materials costs; and
- Higher light-duty substrate demand in Europe, China and Asia, offset somewhat by lower North America demand, as well as an increase in demand for heavy-duty diesel products in North America and Asia. Partially offsetting the increase in demand was a decline in manufacturing efficiency due to the use of higher-cost manufacturing facilities and sales of lower margin products.

Display glass price declines of approximately 10% and the negative impact of movements in the Japanese yen and South Korean won in the amount of $73 million, which primarily impacted the Display Technologies segment, partially offset the increase.

Movements in foreign exchange rates did not materially impact Corning's consolidated net sales in the year ended December 31, 2017, respectively, when compared to the same period in 2016.

Selling, General and Administrative Expenses

When compared to the year ended December 31, 2017, selling, general and administrative expenses increased by $326 million, or 22%, in the year ended December 31, 2018. Selling, general and administrative expenses increased by 1% as a percentage of sales. The increase was primarily driven by the following items:

- An increase of $137 million in litigation and other legal expenses, driven by a ruling in an intellectual property lawsuit and developments in commercial litigation matters;
- An increase in the Optical Communications segment, up $65 million, largely driven by the acquisition of CMD;
- Increased corporate expenses of $55 million;
- Increased acquisition related costs of $25 million; and
- Increased costs in our emerging businesses, up $20 million, driven by investments in new customers and new business growth.

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When compared to the year ended December 31, 2016, selling, general and administrative expenses increased by $11 million in the year ended December 31, 2017. The increase was due to the following items:

- A decrease of $52 million in acquisition-related costs, driven by the absence of costs related to the realignment of our equity interests in Dow Corning completed in the second quarter of 2016, offset slightly by several small acquisitions occurring in 2017;
- A decrease of $64 million in litigation, regulatory and other legal costs, primarily driven by the absence of events occurring in the second quarter of 2016. In this period, we recorded litigation and other expenses related to the resolution of an investigation by the U.S. Department of Justice and an environmental matter in the amount of $98 million, offset somewhat by the gain on the contribution of our equity interests in PCC and PCE as partial settlement of the asbestos litigation in the amount of $56 million; and
- A decrease of $46 million in the mark-to-market of our defined benefit pension plans.

Offsetting these events were the following items:

- A decrease of $32 million in gains from the contingent consideration fair value adjustment;
- An increase of $51 million in the Optical Communications segment due to costs associated with acquisitions and growth initiatives; and
- An increase of $24 million in the Specialty Materials segment in support of new product launches.

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

Research, Development and Engineering Expenses

For year ended December 31, 2018, research, development and engineering expenses increased by $129 million, or 15%, when compared to 2017, driven by higher costs associated with new product launches and our emerging businesses. As a percentage of sales, these expenses were flat when compared to the same period last year.

In the year ended December 31, 2017, research, development and engineering expenses increased by $128 million, or 17%, when compared to the same period last year, driven by the absence of the impact of a 2016 joint development agreement in the Display Technologies segment, as well as higher costs associated with new product launches in the Optical Communications, Specialty Materials and Environmental Technologies segments, up $20 million, $11 million

and $7 million, respectively. As a percentage of sales, these expenses decreased one percent when compared to the same period last year.

Equity in Earnings of Affiliated Companies

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

	Years ended December 31,		
	2018	2017	2016
Dow Corning Corporation (1)			$ 82
Hemlock Semiconductor Group (2)	$ 388	$ 352	212
All other	2	9	(10)
Total equity earnings	$ 390	$ 361	$ 284

(1) Results include equity earnings for Dow Corning, which includes the silicones business and Hemlock Semiconductor business, through May 31, 2016, the date of the realignment of our ownership interest in Dow Corning.
(2) Results include equity earnings for HSG beginning on June 1, 2016.

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On May 31, 2016, Corning completed the strategic realignment of its equity investment in Dow Corning Corporation ("Dow Corning") pursuant to the Transaction Agreement announced on December 10, 2015. Under the terms of the Transaction Agreement, Corning exchanged with Dow Corning its 50% stock interest in Dow Corning for 100% of the stock of a newly formed entity, which held an equity interest in Hemlock Semiconductor Group (HSG) and approximately $4.8 billion in cash.

The equity in earnings line on our income statement for the year ended December 31, 2016 reflects both the equity earnings from the silicones and polysilicones (HSG) businesses of Dow Corning from January 1, 2016 through May 31, 2016. Prior to the realignment of Dow Corning, equity earnings from the HSG business were reported on the equity in earnings line in Corning's income statement, net of Dow Corning's 35% U.S. tax. Additionally, Corning reported its tax on equity earnings from Dow Corning on the tax provision line on its income statement at a U.S. tax provision rate of 7%. As part of the realignment, HSG was converted to a partnership. Each of the partners is responsible for the taxes on their portion of equity earnings. Therefore, post-realignment, HSG's equity earnings is reported before tax on the equity in earnings line and Corning's tax is reported on the tax provision line.

Refer to Note 12 (Commitments, Contingencies and Guarantees) to the consolidated financial statements for additional information.

Translated earnings contracts

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

Year ended December 31, 2018	Year ended December 31, 2017	Change