

**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, 2022

OR

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

Commission File No. 001-35456

ALLISON TRANSMISSION HOLDINGS, INC.

(Exact Name of Registrant as Specified in Its Charter)

Delaware
(State of Incorporation)

26-0414014
(I.R.S. Employer
Identification Number)



One Allison Way
Indianapolis, IN 46222

(Address of Principal Executive Offices and Zip Code)

(317) 242-5000

(Registrant's Telephone Number, Including Area Code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, \$0.01 par value	ALSN	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 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 Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

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

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company Emerging growth company

If an emerging growth company, 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 has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements.

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b).

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

The aggregate market value of the voting and non-voting stock held by non-affiliates was approximately \$3,680 million as of June 30, 2022.

As of February 1, 2023, there were 91,864,356 shares of Common Stock outstanding.

Documents Incorporated by Reference

Portions of the Registrant's definitive Proxy Statement for its 2023 annual meeting of stockholders will be incorporated by reference in Part III of this Annual Report on Form 10-K.

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Cautionary Note Regarding Forward-Looking Statements

This Annual Report on Form 10-K contains forward-looking statements. The words “believe,” “expect,” “anticipate,” “intend,” “estimate” and other expressions that are predictions of or indicate future events and trends and that do not relate to historical matters identify forward-looking statements. You should not place undue reliance on these forward-looking statements. Although forward-looking statements reflect management’s good faith beliefs, reliance should not be placed on forward-looking statements because they involve known and unknown risks, uncertainties and other factors, which may cause actual results, performance or achievements to differ materially from anticipated future results, performance or achievements expressed or implied by such forward-looking statements. Forward-looking statements speak only as of the date the statements are made. We undertake no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events, changed circumstances or otherwise. These forward-looking statements are subject to numerous risks and uncertainties, including, but not limited to: our participation in markets that are competitive; our ability to prepare for, respond to and successfully achieve our objectives relating to technological and market developments, competitive threats and changing customer needs, including with respect to electric hybrid and fully electric commercial vehicles; increases in cost, disruption of supply or shortage of labor, freight, raw materials, energy or components used to manufacture or transport our products or those of our customers or suppliers, including as a result of geopolitical risks, wars and pandemics; global economic volatility; general economic and industry conditions, including the risk of recession; labor strikes, work stoppages or similar labor disputes, which could significantly disrupt our operations or those of our principal customers or suppliers; the duration and spread of the COVID-19 pandemic, including new variants of the virus and the pace and availability of vaccines and boosters, mitigating efforts deployed by government agencies and the public at large, and the overall impact from such outbreak on economic conditions, financial market volatility and our business, including but not limited to the operations of our manufacturing and other facilities, the availability of labor, our supply chain, our distribution processes and demand for our products and the corresponding impacts to our net sales and cash flow; the highly cyclical industries in which certain of our end users operate; uncertainty in the global regulatory and business environments in which we operate; the concentration of our net sales in our top five customers and the loss of any one of these; the failure of markets outside North America to increase adoption of fully automatic transmissions; the success of our research and development efforts, the outcome of which is uncertain; U.S. and foreign defense spending; risks associated with our international operations, including acts of war and increased trade protectionism; the discovery of defects in our products, resulting in delays in new model launches, recall campaigns and/or increased warranty costs and reduction in future sales or damage to our brand and reputation; our ability to identify, consummate and effectively integrate acquisitions and collaborations; and risks related to our indebtedness.

Important factors that could cause actual results to differ materially from our expectations are disclosed under Part I, Item 1A., “Risk Factors” in this Annual Report on Form 10-K. All written and oral forward-looking statements attributable to us, or persons acting on our behalf, are expressly qualified in their entirety by these cautionary statements as well as other cautionary statements that are made from time to time in our other Securities and Exchange Commission filings or public communications. You should evaluate all forward-looking statements made in this Annual Report on Form 10-K in the context of these risks and uncertainties.

Certain Trademarks

This Annual Report on Form 10-K includes trademarks, such as Allison Transmission, eGen Flex, eGen Power, FracTran, TerraTran, ReTran and Walker Die Casting, which are protected under applicable intellectual property laws and are our property and/or the property of our subsidiaries. This report also contains trademarks, service marks, copyrights and trade names of other companies, which are the property of their respective owners. We do not intend our use or display of other companies’ trademarks, service marks, copyrights or trade names to imply a relationship with, or endorsement or sponsorship of us by, any other companies. Solely for convenience, our trademarks and trade names referred to in this report may appear without the ® or ™ symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks and trade names.

PART I.

ITEM 1. Business

Overview

Allison Transmission Holdings, Inc. and its subsidiaries (“Allison,” the “Company,” “we,” “us” or “our”) design and manufacture vehicle propulsion solutions, including commercial-duty on-highway, off-highway and defense fully automatic transmissions and electric hybrid and fully electric systems. The business was founded in 1915 and has been headquartered in Indianapolis, Indiana since inception. Allison is traded on the New York Stock Exchange under the symbol “ALSN”.

We have approximately 3,500 employees. Although approximately 74% of revenues were generated in North America in 2022, we have a global presence by serving customers in Asia, Europe, South America and Africa. We serve customers through an independent network of approximately 1,600 independent distributor and dealer locations worldwide.

Global markets continue to experience supply chain, labor, energy and raw material constraints as a result of global economic volatility, the war in Ukraine and the COVID-19 pandemic, that impacted our business in 2022 and continue to impact our business performance. As a result, during 2022 we experienced raw material and component part price inflation, increased freight and logistics costs, increased labor costs, production constraints due to labor shortages and increased foreign exchange volatility. In addition, our net sales for 2022 were negatively impacted as a result of our customers’ inability to secure components from the broader commercial vehicle supply base which resulted in reduced commercial vehicle build schedules and the inability of the commercial vehicle market to produce sufficient quantities to meet demand. We expect that commercial vehicle build schedules will continue to be negatively impacted by the availability of components in 2023.

Our Business

We are the world’s largest manufacturer of fully automatic transmissions for medium- and heavy-duty commercial vehicles and medium- and heavy-tactical U.S. defense vehicles and a leader in electrified propulsion systems. Allison products are used in a wide variety of applications, including on-highway trucks (distribution, refuse, construction, fire and emergency), buses (primarily school and transit), motorhomes, off-highway vehicles and equipment (primarily energy, mining and construction applications) and defense vehicles (tactical wheeled and tracked). We believe the Allison brand is one of the most recognized in our industry as a result of the performance, reliability and fuel efficiency of our propulsion solutions and is associated with high quality, durability, vocational value, technological leadership and superior customer service.

We introduced the world’s first fully automatic transmission for commercial vehicles over 75 years ago. Since that time, we have driven the trend in North America and other parts of the world towards increasing automaticity by targeting a diverse range of commercial vehicle vocations. Allison products are optimized for the unique performance requirements of end users, which typically vary by vocation. Our products are highly engineered, requiring advanced manufacturing processes, and employ complex software algorithms for our propulsion system controls to maximize end user performance. We have more than 200 different models that are compatible with more than 500 combinations of engine brands, models and ratings (including diesel, gasoline, natural gas and other alternative fuels). Additionally, we have created thousands of unique Allison-developed calibrations available to be used with our control modules.

Our Industry

Commercial vehicles typically employ one of three transmission types: manual, automated manual or fully automatic. Manual and automated manual transmissions ("AMT") are the most prevalent transmission type used in Class 8 tractors in North America. Manual transmissions are the most prevalent in medium- and heavy-duty commercial vehicles, generally, outside North America. Manual transmissions utilize a disconnect clutch causing power to be interrupted during each gear shift resulting in energy loss-related inefficiencies and less work being accomplished for a given amount of fuel consumed. In long-distance trucking, this power interruption is not a significant factor, as the manual transmission provides its highest degree of fuel economy during steady-state cruising. However, steady-state cruising is only one part of the duty cycle. When the duty cycle requires a high degree of "start and stop" activity or speed transients, as is common in many vocations as well as in urban environments, we believe manual transmissions result in reduced performance, lower fuel efficiency, lower average speed for a given amount of fuel consumed and inferior ride quality. Moreover, the clutches must be replaced regularly, resulting in increased maintenance expense and vehicle downtime. Manual transmissions also require a skilled driver to operate the disconnect clutch when launching the vehicle and shifting gears. AMTs are manual transmissions that feature automated operation of the disconnect clutch. Fully automatic transmissions utilize technology that smoothly shifts gears instead of a disconnect clutch, thereby delivering uninterrupted power to the wheels during gear shifts and requiring minimal driver input. These transmissions deliver superior acceleration, higher productivity, increased fuel efficiency, reduced operating costs, less driveline shock and smoother shifting relative to both manual transmissions and AMTs in vocations with a high degree of "start and stop" activity, as well as in urban environments.

Emerging technologies in commercial-duty propulsion solutions include electric hybrid and fully electric propulsion solutions in certain end markets and are in part driven by efforts to reduce fuel consumption, noise and greenhouse gas emissions. Fully electric powertrains differ from electric hybrid powertrains because they only propel the vehicle with an electric motor; while electric hybrids generally utilize both a conventional internal combustion power source and powertrain as well as the means to propel the vehicle electrically. While both emerging technologies are gaining use in automotive markets and electric hybrids and fully electric propulsion solutions have gained use in the bus market, fully electric propulsion solutions remain in a developmental phase in the medium- and heavy-duty commercial vehicle market.

Our Served Markets

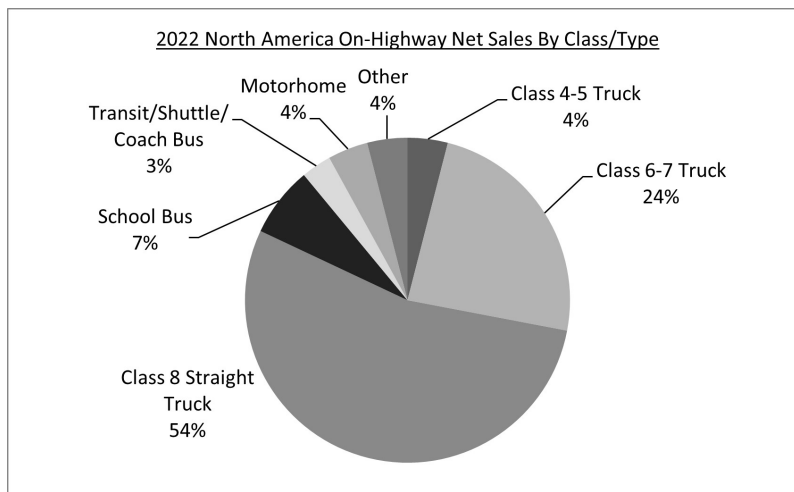
We sell our propulsion solutions globally for use in medium- and heavy-duty on-highway commercial vehicles, off-highway vehicles and equipment and defense vehicles. In addition to the sale of propulsion solutions, we also sell branded replacement parts, support equipment, aluminum die cast components and other products necessary to service the installed base of vehicles utilizing our solutions. The following table provides a summary of our business by end market, for the fiscal year ended December 31, 2022.

END MARKET	NORTH AMERICA		OUTSIDE NORTH AMERICA		DEFENSE	SERVICE PARTS, SUPPORT EQUIPMENT & OTHER
	ON-HIGHWAY	OFF-HIGHWAY	ON-HIGHWAY	OFF-HIGHWAY		
2022 NET SALES (IN MILLIONS)	\$ 1,359	\$ 86	\$ 463	\$ 127	\$ 146	\$ 588
% OF TOTAL	49%	3%	17%	5%	5%	21%
	<ul style="list-style-type: none"> • Construction • Day Cab Tractors • Distribution • Emergency • Motorhome • Refuse • School, transit, shuttle and coach buses • Utility 	<ul style="list-style-type: none"> • Construction • Energy • Mining • Specialty vehicle 	<ul style="list-style-type: none"> • Construction • Distribution • Emergency • Mining • Refuse • School, transit, shuttle and coach buses • Specialty • Utility 	<ul style="list-style-type: none"> • Construction • Energy • Mining • Specialty vehicle 	<ul style="list-style-type: none"> • North America medium- and heavy-tactical wheeled platforms • Global tracked combat platforms 	<ul style="list-style-type: none"> • Aluminum die cast components • Extended transmission coverage • Remanufactured transmissions • Royalties • Saleable engineering • Service parts • Support equipment • Transmission fluids

Refer to "Note 19. Concentration of Risk" in Part II, Item 8., of this Annual Report on Form 10-K for additional information on our significant original equipment manufacturer ("OEM") customers.

North America

On-Highway. We are the largest manufacturer of fully automatic transmissions for the on-highway medium- and heavy-duty commercial vehicle market in North America. The following is a summary of our on-highway net sales by vehicle class in North America.



Our core North American on-highway market includes Class 4-5, Class 6-7 and Class 8 straight trucks, conventional transit, shuttle and coach buses, school buses and motorhomes. Class 8 trucks are subdivided into two markets: straight and tractor (which includes both line-haul and regional haul day cab tractors). Class 8 straight trucks are those with a unified body (e.g., refuse, construction, and dump trucks), while tractors have a vehicle chassis that is separable from the trailer they pull. We have been supplying transmissions for Class 8 straight trucks for decades, and it is a core end market for us. We have limited exposure to the Class 8 line-haul tractor market because lower priced manual transmissions and AMTs generally meet the needs of these vehicles which are primarily used in long distance hauling.

We also provide electric hybrid and fully electric propulsion solutions within the North American on-highway market. The interest in conserving fuel and reducing greenhouse gas emissions is driving demand for more fuel-efficient commercial vehicles. Our electric hybrid and fully electric propulsion customers include bus and truck applications. We compete primarily with BAE Systems plc and manufacturers of fully electric propulsion solutions such as Dana Incorporated ("Dana") and Cummins, Inc. as well as certain vertically integrated OEMs.

We sell substantially all of our propulsion solutions in the North American on-highway market to OEMs. These OEMs, in turn, install our propulsion solutions in vehicles in which our product is either the exclusive propulsion solution available or is specifically requested by end users. In 2022, OEM customers representing over 90% of our North American on-highway unit volume participated in long-term agreements ("LTAs") with us. Generally, these LTAs offer the OEM customer defined levels of mutual commitment with respect to growing Allison's presence in the OEMs' products and promotional efforts, pricing and sharing of commodity cost risk. The length of our LTAs is typically between three and five years. We often compete in this market against independent manufacturers of manual transmissions, AMTs, electric hybrid and fully electric propulsion solutions, fully automatic transmissions manufactured by Ford Motor Company ("Ford"), ZF Friedrichshafen AG ("ZF") and Voith GmbH ("Voith") and against vertically integrated OEMs in certain weight classes that use their own internally manufactured transmissions in certain vehicles.

The following table presents a summary of our market share by vehicle class in the North America On-Highway end market.

	CLASS 4-5 TRUCKS	MOTOR HOME	SCHOOL BUS	CLASS 6-7 TRUCKS	CLASS 8 STRAIGHT TRUCKS	CLASS 8 DAY CAB
2022 SHARE	13%	44%	85%	79%	78%	5%

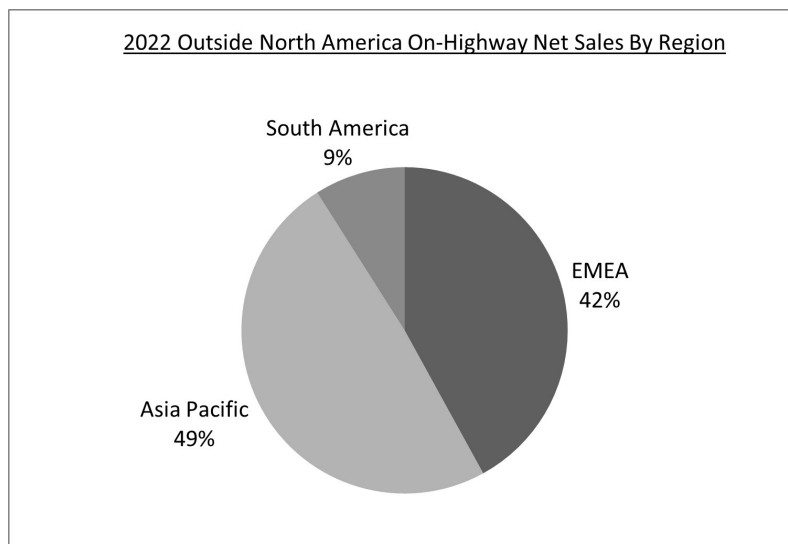
Off-Highway. We have provided products used in vehicles and equipment that serve energy, mining and construction applications in North America for over 70 years. Off-highway energy applications include hydraulic fracturing equipment, well-stimulation equipment, pumping equipment, and well-servicing rigs, which often use a fully automatic transmission in stationary pumping applications. We supply our heavy duty off-highway transmissions to producers of well-stimulation and well-servicing equipment. Competition in this end market includes Caterpillar Inc. ("Caterpillar") and Twin Disc, Inc. ("Twin Disc").

We also provide heavy-duty transmissions used in mining trucks, specialty vehicles and construction vehicles. Off-highway mining and construction applications include trucks used to haul various commodities and other products around construction sites and mines, including underground mines. These trucks include rigid dump trucks, wide-body dump trucks, underground trucks, and long-haul tractor trailer trucks with load capacities between 40 to 110 tons. Our major competitors in this end market include vertically integrated companies that manufacture fully automatic transmissions for their vehicles. These vertically integrated competitors include Caterpillar, Komatsu Ltd. ("Komatsu"), and Volvo Group ("Volvo"). We also compete with independent manufacturers ZF and Dana. Specialty vehicles using our heavy-duty off-highway transmissions include airport rescue and firefighting vehicles. Our major competitor in this end market is Twin Disc.

Outside North America

Outside North America we serve several different markets, including: Asia-Pacific, Europe, Middle East, Africa (collectively, "EMEA"), and South America.

On-Highway. We are the largest manufacturer of fully automatic transmissions for the commercial vehicle market outside of North America. We also provide electric hybrid and fully electric propulsion solutions within the outside North America on-highway market. While the use of fully automatic transmissions in the medium- and heavy-duty commercial vehicle market has been widely accepted in North America, markets outside North America continue to be dominated by manual transmissions. Where adopted, fully automatic transmission-equipped medium- and heavy-duty commercial vehicles are concentrated in certain vocational end markets. We often compete in this market against independent manufacturers of manual transmissions, AMTs, electric hybrid and fully electric propulsion solutions, fully automatic transmissions manufactured by ZF, Voith, and Shaanxi Fast Gear Co., Ltd. and against vertically integrated OEMs. The following is a summary of our on-highway net sales by region outside of North America.

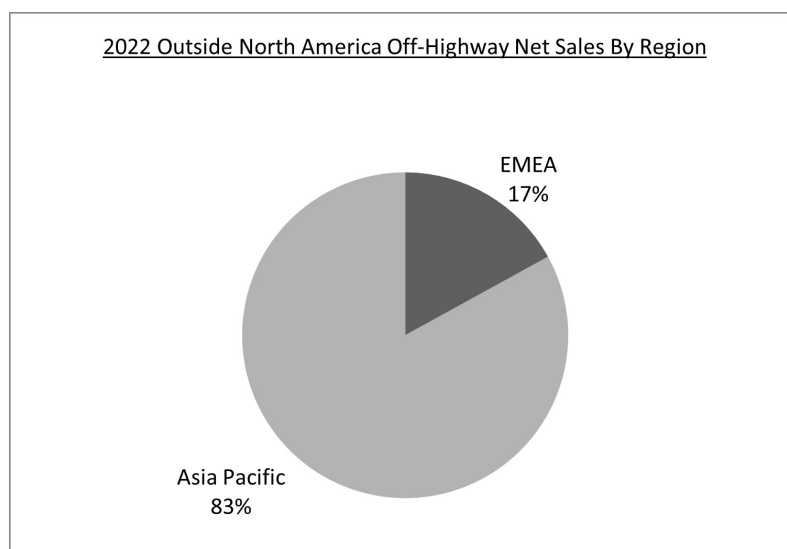


Asia-Pacific. Our key Asia-Pacific markets include China, Japan, South Korea, Australia and India; however, we actively participate in several other important Asia-Pacific countries including Indonesia, Malaysia, Singapore, Taiwan and Thailand. In addition, OEMs in the Asia-Pacific market are increasingly exporting their products to other regions. Within Asia-Pacific, our sales efforts are principally focused on the transit bus, vocational truck, severe service and distribution markets. Currently, manual transmissions are the predominant transmissions used in commercial vehicles in the Asia-Pacific region. In China, government subsidies and regulations by governmental entities continue to drive the development and adoption of fully electric propulsion solutions for use in the bus and truck markets.

Europe, Middle East, Africa. EMEA is composed of several different markets, each of which differs from our core North American market by the degree of market maturity, sophistication and acceptance of fully automatic transmission and electric propulsion solution technology. Within Europe, we serve Western European developed markets, as well as Eastern European emerging markets, principally in the refuse, emergency, transit bus, coach bus, distribution and utility markets. Competition in Western Europe is most notably characterized by a high level of vertical powertrain integration, with OEMs often utilizing their own manual transmissions and AMTs in their vehicles, and electric hybrid and fully electric propulsion solutions. The Middle East and Africa regions are generally characterized by very limited local vehicle production, with imports from China, Europe, India, South America, Turkey and the U.S. accounting for the majority of vehicles.

South America. The South American region is characterized by a high level of OEM vertical integration, with captive manual transmission and AMT manufacturing. Currently, manual transmissions are the predominant transmissions used in commercial vehicles in South America. We serve the South American region primarily in the bus, refuse, vocational truck and agricultural markets.

Off-Highway. The following is a summary of our off-highway net sales by region outside of North America.



Asia-Pacific. Off-highway markets in Asia are shared by energy, mining and construction applications. Our primary competitors are Caterpillar, Danyang Winstar Auto Parts Co., Ltd., Twin Disc and manufacturers of electrified solutions in energy applications; Caterpillar, Xi'an FC Intelligence Transmission Co. Ltd. and Komatsu in mining applications; and Caterpillar, Volvo and ZF in construction applications.

Europe, Middle East, Africa. Our off-highway markets in EMEA are mining and construction. Our major off-highway competitors are Caterpillar and Komatsu, both of which are vertically integrated manufacturers of off-highway mining vehicles, including the specific fully automatic transmission used in their mining trucks. A typical construction application is a rigid or articulated dump truck, with competition from Caterpillar, Dana, Volvo and ZF.

Defense

We have a long-standing relationship with the U.S. Department of Defense (the "DOD") dating back to 1946, when we began developing our first-generation tank transmission. Today, we sell substantially all of the propulsion solutions for medium- and heavy-tactical wheeled vehicles used by the U.S. military, including the Joint Light Tactical Vehicle, Light Armored Vehicle, Stryker Armored Vehicle, the Family of Medium Tactical Vehicles, Heavy Expanded Mobility Tactical Trucks, Palletized Loading Systems, Heavy Dump Trucks and Heavy Equipment Transporters. Propulsion solutions for tactical wheeled vehicles are typically sold to OEMs.

We supply tracked vehicle propulsion solutions to the U.S. Army, including the Abrams M1A2 Main Battle Tank, Joint Assault Bridge, Assault Breacher Vehicles, Mobile Protected Firepower Assault Vehicles and the M113A3 Armored Personnel Carrier family of vehicles. We also sell parts kits to the U.S. Army for Abrams Tank sustainment. See Part I, Item 1A., "Risk Factors" of this Annual Report on Form 10-K for a discussion of risks associated with our contracts with the DOD.

We have defense products in 110 countries around the world. Increasingly, we are supplying vehicle propulsion solutions for international tracked vehicles, such as light tracked personnel carriers, armored fighting vehicles, heavy tracked artillery systems, and Main Battle Tanks. Our defense products are manufactured at our headquarters in Indianapolis and by our licensees internationally for export world-wide.

Globally, we face competition primarily from Renk AG/Renk America, SAPA S.p.A, ST Kinetics and QinetiQ Group plc for supply of tracked vehicle propulsion solutions. Additionally, we face competition from ZF in certain defense wheeled vehicles using automatic transmissions and from several AMT suppliers.

Service Parts, Support Equipment and Other

Our service parts, support equipment and other end market is comprised of: Allison-branded service parts and transmission fluids, aluminum die cast components, extended transmission coverage, remanufactured transmissions, royalties, saleable engineering and support equipment. The aftermarket provides us with a relatively stable source of revenues as the installed base of vehicles and equipment utilizing our solutions continues to grow. The need for replacement parts is driven by normal vehicle and equipment maintenance requirements. Uninterrupted operation is generally critical for end users' profitability.

The sale of Allison-branded parts and fluids, remanufactured transmissions and support equipment is fundamental to our brand promise. We have assembled a worldwide network of approximately 1,600 independent distributor and dealer locations to sell, service and support our solutions. As part of our brand strategy, our distributors and dealers are required to sell genuine Allison-branded parts. Within the aftermarket, we offer remanufactured transmissions under our ReTran brand, which provides a cost-effective alternative for transmission repairs and replacements. We also provide support equipment to our OEMs to assist in installing new Allison solutions into vehicles, and, therefore, sales of support equipment are dependent upon sales of new solutions. The competition for service parts and ReTran transmissions comes from a variety of smaller-scale companies sourcing non-genuine "will-fit" parts from unauthorized manufacturers. These "will-fit" parts often do not meet our product specifications, and therefore may be of lesser quality than genuine Allison parts.

Our Product Offerings

Allison transmissions and electric propulsion solutions are sold under the Allison Transmission brand name and remanufactured transmissions are sold under the ReTran brand name. The following is a summary of our product lines.

On-Highway Products		
Product		Applications
1000 Series	Distribution Motorhome Refuse School and Shuttle Bus	Services Specialty Wheeled Defense
2000 Series	Distribution Motorhome Refuse School and Shuttle Bus	Services Specialty Wheeled Defense
3000 Series	Coach and Transit Bus Construction Day Cab Tractors Distribution Fire and Emergency	Motorhome Refuse Services Specialty Wheeled Defense
4000 Series	Articulated and Wide Body Mining Dump Trucks Coach and Transit Bus Construction Day Cab Tractors Distribution	Fire and Emergency Motorhome Refuse Specialty Wheeled Defense
eGen Flex Electric Hybrid Propulsion Solutions	Transit and Shuttle Bus	
eGen Power Fully Electric Propulsion Solutions	Coach and Transit Bus Day Cab Tractors Distribution Fire and Emergency	Line-Haul Tractors Refuse School and Shuttle Bus

Off-Highway Products		
Product		Applications
5000 Series	Rigid and Articulated Dump Truck Underground Mine Truck Well Service Rigs	
6000 Series	Rigid and Articulated Dump Truck Underground Mine Truck Well Service Rigs	
8000 Series	Hydraulic Fracturing Equipment Rigid Dump Trucks	
9000 Series	Hydraulic Fracturing Equipment Rigid Dump Trucks	
FracTran	Hydraulic Fracturing Equipment	

Defense Products		
Product		Applications
X200	Tracked Vehicles	
3040MX	Tracked Vehicles	
X1100	Tracked Vehicles	

Product Development and Engineering

We maintain product development and engineering capability dedicated to the design, development, refinement and support of our fully automatic transmissions and electric hybrid and fully electric propulsion systems. We believe our customers expect our products to provide unparalleled performance and value defined in various ways, including delivering maximum cargo in minimum time, using the least amount of fuel possible while employing the fewest vehicles possible and experiencing maximum vehicle uptime. In response to those needs and the evolving customer focus on fuel efficiency and reduced emissions, we provide vehicle specification guidelines, propulsion control software and mechanical components to optimize fuel economy while delivering desired vehicle performance.

Further, we are developing new products and technology to improve the fuel efficiency and fuel economy of our conventional products, including by allowing engines to operate more efficiently and at lower speeds to avoid consuming fuel without compromising performance, and to expand our portfolio of electric hybrid and fully electric propulsion solutions. Some examples of these development efforts in 2022 include the expansion of our eGen portfolio of electric propulsion solutions through the addition of the 130S fully electric axle and the eGen Flex, our next generation electric hybrid system capable of full electric vehicle operation for up to 50% of a bus's route depending on duty-cycle. Our product development and engineering efforts in 2022 also extended into our off-highway and Defense end-markets through the launch of FracTran, a more efficient and higher-horsepower hydraulic fracturing transmission, and the development of eGen Force, a new cross-drive transmission for tracked applications that enables electric hybrid propulsion and electric only silent maneuverability. In 2022, we also began production of our next generation of electronic controls that are capable of delivering advanced communications, functional safety, cybersecurity and over-the-air programming.

Sales and Marketing Organization

Our sales and marketing effort is organized along geographic and customer lines and is comprised of marketing, sales and service professionals, supported by application engineers worldwide. In North America, selling efforts in the on-highway end market are organized by distributor area responsibility, OEM sales and, for our large end users, national accounts. Outside North America, we manage our sales, marketing, service and application engineering professionals through regional areas of responsibility. These regional management teams distribute OEM service and application engineering resources globally. We manage our defense products sales, marketing and service geographically, with North America and Outside North America sales supported by application engineering through professionals based in Indianapolis, Indiana.

We have developed a marketing strategy to reach OEM customers as well as end users. We target our end users primarily through marketing activities by our sales staff, who directly call on end users and attend local trade shows, targeting specific vocations globally and through our plant tour programs, where end users may test our products on our Indianapolis test track and our enhanced customer experience demonstration track at our Hungary facility.

While our marketing management uses the term "customer" interchangeably for OEMs and end users, the primary objective of our marketing strategy is to create demand for propulsion solutions through:

- OEM promotion of our products and incorporation of our propulsion solutions in their commercial vehicle product offerings;
- Allison representative and/or Allison distributor contact with identified, major end users; and
- Our network of independent dealers who contact other end users.

The process is interactive, as Allison representatives, Allison distributors, OEMs and dealers educate customers and respond to the specific applications, requirements and needs of numerous specialty markets.

Similarly, we work with customers, dealers and OEMs to educate, improve and simplify how they specify vehicles and vehicle systems in order to optimize vehicle performance and fuel consumption. Our field organization also works closely with distributors who, in turn, work with dealers to provide end users with education, parts, service and warranty support. The defense group focuses on industry OEMs and collaborative dialogue with OEMs and government leaders to understand program requirements and determine our long-term product development strategy.

Manufacturing

Our manufacturing strategy provides for distributed capability in manufacturing and assembly of our products for the global commercial vehicle market. Our primary manufacturing facilities, located in Indianapolis, Indiana, consist of approximately 2.3 million square feet of usable manufacturing space in six plants. Our high volume on-highway products are produced in multiple global locations (United States, Chennai, India and Szentgotthard, Hungary), while off-highway, electric hybrid propulsion and defense tracked products are produced in Indianapolis and fully electric propulsion solutions are produced in Auburn Hills, Michigan. In addition, our aluminum die cast components are produced in Lewisburg, Tennessee. We also have established customization and parts distribution in the United States, the Netherlands, Brazil, China, Hungary, India and Japan.

Suppliers and Raw Materials

A significant amount of the part numbers that make up our propulsion solutions are purchased from outside suppliers, and during 2022, we purchased approximately \$969 million of direct materials and components from outside suppliers. The largest elements of our direct spending are aluminum and steel castings and forgings that are formed by our suppliers into our larger components and assemblies for use in our propulsion solutions. Our spending on aluminum and steel raw materials directly and indirectly through our purchase of these components constituted approximately 22% of our direct material and component costs in 2022. The balance of our direct and indirect materials and components costs are primarily composed of value-added services and conversion costs. Our supply contracts, along with an intensive supplier selection and performance monitoring process, have enabled us to establish and maintain close relationships with suppliers and have contributed to our overall operating efficiency and quality.

Intellectual Property

Patents, trademarks, and other proprietary rights are important to the continued success of our business. We also rely upon trade secrets, know-how, continuing technological innovation and licensing opportunities to develop and maintain our competitive position. We protect our proprietary rights through a variety of methods, including confidentiality agreements and proprietary information agreements with suppliers, employees, consultants and others who may have access to our proprietary information. We own and have licensing arrangements for a number of U.S. and foreign patents related to our products and business. We do not consider our business to be dependent on any single patent, nor will the expiration of any single patent materially affect our business. Our current patents will expire over various periods and we continue to file new patent applications on newly-developed technology.

Seasonality

Overall, the demand for our products is relatively consistent over the year. However, in typical market conditions, the North American truck market experiences a higher level of production in the first half of the year due to fewer holidays and the practice of plant shutdowns in July and December. Due to ongoing supply chain and labor constraints caused by global economic volatility, the war in Ukraine and the COVID-19 pandemic, demand for our products may not align with the demand we have experienced during typical market conditions.

Human Capital

At Allison, we believe in the power of our people, our processes and our products. For more than 105 years, we have built our business on these values: Quality, Customer Focus, Integrity, Innovation, and Teamwork. We use a variety of human capital measures in managing our business, including: workforce demographics; inclusion and diversity; and employee health and safety.

Workforce Demographics. Our people continue to be a critical component in our continued success, the delivery of our values and the execution of our growth initiatives. As of December 31, 2022, we had a highly skilled workforce of approximately 3,500 employees, with approximately 89% of those employees in the U.S. Approximately 46% of our U.S. employees are represented by the International Union, United Automobile, Aerospace and Agricultural Implement Workers of America (“UAW”) and are subject to a collective bargaining agreement. In December 2017, we entered into a six-year collective bargaining agreement with UAW Local 933 that expires in November 2023. There have been no strikes or work stoppages due to Allison-specific issues in over 40 years.

Inclusion and Diversity. Allison recognizes the power of different thought, accepts and respects each individual and strives to create an inclusive workplace where everyone can reach their full potential, driving innovation and business results. Our inclusion and diversity efforts in 2022 included the participation by employees in unconscious bias training, continuing our speaker series to facilitate dialogue about inclusion and diversity, continuing to increase our focus on the recruitment of underrepresented groups including by participating in career fairs with Historically Black Colleges and Universities, Hispanic institutions, veterans and people with disabilities and continuing our virtual mentoring program to connect team members from different offices, departments and backgrounds.

Employee Health & Safety. Allison’s overriding priority is to protect the health and safety of each employee. As part of our health and safety programs, employees participate in training focused on this topic and metrics are reviewed regularly, including the number of injury incidents that occur and those incidents that result in lost work days. For 2022, we achieved an overall recordable rate of 2.26, meaning that for every 100 employees, 2.26 employees incurred an injury that resulted in recordable medical treatment and the number of lost work days was 0.87, meaning that for every 100 employees, 0.87 individuals experienced an incident that resulted in days away from work.

Government Regulations

We are subject to a variety of federal, state, local and foreign laws and regulations, including those governing the discharge of pollutants into the air or water, the management and disposal of hazardous substances or wastes, and the cleanup of contaminated sites. Some of our operations require environmental permits and controls to prevent and reduce air and water pollution. These permits are subject to modification, renewal and revocation by issuing authorities. In addition, certain of our products and our customer’s products are subject to certification requirements by a variety of regulatory bodies. We believe we are in substantial compliance with all material environmental laws and regulations applicable to our plants and operations. Historically, our annual costs of achieving and maintaining compliance with environmental, health and safety requirements have not been material to our financial results.

Increasing global efforts to control emissions of carbon dioxide, methane, ozone, nitrogen oxide and other greenhouse gases and pollutants, as well as the shifting focus of regulatory efforts towards total emissions output, have the potential to impact our facilities, costs, products and customers. The U.S. Environmental Protection Agency has taken action to control greenhouse gases from certain stationary and mobile sources. In addition, several states have taken steps, such as adoption of cap and trade programs or other regulatory systems, to address greenhouse gases. There have also been international efforts seeking legally binding reductions in emissions of greenhouse gases. These developments and further actions that may be taken in the U.S. and in other countries, states or provinces could affect our operations both positively and negatively (e.g., by affecting the demand for or suitability of some of our products).

We also may be subject to liability as a potentially responsible party under the Comprehensive Environmental Response, Compensation and Liability Act and similar state or foreign laws for contaminated properties that we currently own, lease or operate or that we or our predecessors have previously owned, leased or operated, and sites to which we or our predecessors sent hazardous substances. Such liability may be joint and several so that we may be liable for more than our share of any contamination, and any such liability may be determined without regard to causation or knowledge of contamination. We or our predecessors have been named potentially responsible parties at contaminated sites from time to time. We do not anticipate our liabilities relating to contaminated sites will be material to our financial results.

Competition

We compete on the basis of product performance, quality, price, distribution capability, service and fuel efficiency, in addition to other factors. We face competition from numerous manufacturers of various types of propulsion solutions for commercial vehicles. Furthermore, we face an increasing amount of competition from vertical integration, as some of our customers are OEMs that manufacture propulsion solutions for their own products. Despite their propulsion solutions manufacturing capabilities, we believe that our existing OEM customers have chosen to purchase certain propulsion solutions from us due to the quality, reliability and strong brand of our propulsion solutions and in order to limit fixed costs, minimize production risks and maintain company focus on commercial vehicle design, production and marketing.

Corporate Information

Allison Transmission Holdings, Inc. was incorporated in Delaware on June 22, 2007. Our principal executive offices are located at One Allison Way, Indianapolis, IN 46222 and our telephone number is (317) 242-5000. Our internet address is www.allisontransmission.com. We file annual, quarterly and current reports, proxy statements and other documents with the United States Securities and Exchange Commission ("SEC"), under the Securities Exchange Act of 1934, as amended (the "Exchange Act"). These periodic and current reports and all amendments to those reports are available free of charge on the investor relations page of our website at <https://ir.allisontransmission.com> as soon as reasonably practicable after we electronically file them with, or furnish them to, the SEC. We have included our website address throughout this filing as textual references only. The information contained on, or accessible through, our website is not incorporated into this Annual Report on Form 10-K. The SEC also maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC at <http://www.sec.gov>.

ITEM 1A. Risk Factors

The following is a cautionary discussion of risks, uncertainties and assumptions that we believe are material to our business. In addition to the factors discussed elsewhere in this Annual Report on Form 10-K, the following are the material factors that, individually or in the aggregate, we believe could make our actual results differ materially from those described in any forward-looking statements.

Risks Related to Our Business and Operations

We participate in markets that are competitive, and our competitors' actions could have a material adverse effect on our business, results of operations and financial condition.

Our business operates in competitive markets. We compete against other existing or new global manufacturers of transmissions and propulsion solutions for commercial vehicles on the basis of product performance, quality, price, distribution capability, service and fuel efficiency in addition to other factors. In addition, we compete with manufacturers developing alternative technologies, including fully electric propulsion solutions, that may or may not require a transmission. A focus on climate change and environmental sustainability, including through regulations enacted and subsidies offered by governmental entities, continues to drive the development and adoption of various alternative technologies, including electric propulsion solutions, in the commercial vehicle industry. If the pace of adoption of electric vehicles proceeds faster than we are anticipating, we may not be in a position to meet customer demand or our competitors may be better positioned to meet customer demand, which may result in a decline in our market share or negatively impact our ability to execute our growth initiatives. Actions by our competitors or accelerated adoption of electric vehicles, in particular if our competitors are able to develop, validate and release new technologies more quickly than we do, could also lead to downward pressure on prices and/or a decline in our market share, either or both of which could adversely affect our results.

In addition, some of our customers or future customers are OEMs that manufacture or could in the future manufacture transmissions, propulsion solutions or alternate technologies, including electric propulsion solutions, for their own products. Despite their manufacturing capabilities, our existing OEM customers have chosen to purchase certain transmissions and propulsion solutions from us due to end user demand. However, we cannot be certain these customers will continue to purchase our products in the future. Increased levels of production insourcing by these customers could result from a number of factors, such as shifts in our customers' business strategies, acquisition by a customer of another transmission or propulsion solution manufacturer, the inability of third-party suppliers to meet specifications and the emergence of low-cost production opportunities in foreign countries. As a result, these OEMs may use products produced internally or by another manufacturer and no longer choose to purchase products from us. A significant reduction in the level of external sourcing by our OEM customers could significantly impact our net sales and cash flows and, accordingly, have a material adverse effect on our business, results of operations and financial condition.

Increases in cost, disruption of supply or shortage of raw materials or components used in our products could harm our business and profitability.

Our products contain various raw materials, including corrosion-resistant steel, non-ferrous metals such as aluminum and nickel, and precious metals such as platinum and palladium. We use raw materials directly in manufacturing and in components that we purchase from our suppliers. We generally purchase components with significant raw material content on the open market. The prices for and availability of these raw materials fluctuate depending on market conditions. Volatility in the prices of raw materials such as steel, aluminum and nickel could increase the cost of manufacturing our products. Additionally, our suppliers are also subject to fluctuations in the prices of raw materials and may attempt to pass all or a portion of such increases on to us. In the event they are successful in doing so, our margins would decline. Industry-wide shortages of raw materials have continued to

occur in 2022, which led to increased raw material price volatility and cost increases, which we expect to continue in 2023. We may not be able to pass on these costs to our customers, and this could have a material adverse effect on our business, results of operations and financial condition. Even in the event that increased costs can be passed through to customers, our gross margin percentages would decline as the recovery of these costs from customers generally lags six to twelve months.

In 2022, approximately 75% of our total spending on components was sourced from approximately 40 suppliers, many of which are the single source for such components. All of the suppliers from which we purchase materials and components used in our business are fully validated suppliers, meaning the suppliers' manufacturing processes and inputs have been validated under a production part approval process ("PPAP"). Furthermore, there are only a limited number of suppliers for certain of the materials used in our business, such as corrosion-resistant steel. As a result, our business is subject to the risk of additional price fluctuations and periodic delays in the delivery of our materials or components if supplies from a validated supplier are interrupted and a new supplier, if one is available, must be validated or materials and components must be purchased from a supplier without a completed PPAP, which could increase our risk of purchasing non-conforming components. Any such price fluctuations or delays, if significant, could harm our profitability or operations. In addition, the loss of a supplier could result in significant material cost increases or reduce our production capacity.

We have experienced, and expect to continue to experience, delays in the availability and receipt of raw materials and component parts as a result of global economic uncertainty, the war in Ukraine and the COVID-19 pandemic, some of which have materially impacted, and may continue to materially impact, our ability to meet customer demand. We also cannot guarantee we will be able to maintain favorable arrangements and relationships with these suppliers. An increase in the cost or a sustained interruption in the supply or shortage of some of these raw materials or components that may be caused by a deterioration of our relationships with suppliers or by events such as natural disasters and extreme weather events which may increase in frequency and intensity as a result of climate change, power outages, labor strikes and public health crisis such as pandemics and epidemics or the like could negatively impact our business, results of operations and financial condition. Although we have agreements with many of our customers that we will pass such price increases through to them, such contracts may be canceled by our customers and/or we may not be able to recoup the costs of such price increases. Additionally, if we are unable to continue to purchase our required quantities of raw materials on commercially reasonable terms, or at all, if we are unable to maintain or enter into purchasing contracts for commodities, or if delivery of materials or component parts from suppliers is delayed or non-conforming, our operations could be disrupted, we may not be able to meet customer demand, and our profitability and our financial results may be materially impacted.

Labor cost inflation, employee attraction and retention or labor unrest could have an adverse effect on our business, results of operations and financial condition.

As of December 31, 2022, approximately 46% of our U.S. employees, representing approximately 41% of our total employees, were represented by the UAW and are subject to a collective bargaining agreement. Our current collective bargaining agreement with UAW Local 933 is effective through November 2023. Any new collective bargaining agreement we negotiate with the UAW to replace the existing collective bargaining agreement upon its expiration may result in increased costs to us, in particular labor costs, which could have an adverse effect on our results of operations. In addition to our unionized work force, many of our direct and indirect customers and vendors have unionized work forces. Strikes, work stoppages or slowdowns experienced by these customers or vendors or their other suppliers could result in slowdowns or closings of assembly plants that use our products or supply materials for use in the production of our products. Organizations responsible for shipping our products may also be impacted by strikes. Any interruption in the delivery of our products could reduce demand for our products and could have a material adverse effect on us.

In general, we consider our labor relations with all of our employees to be good. However, in the future we may be subject to labor unrest. If strikes, work stoppages or lock-outs at our facilities or at the facilities of our vendors or customers occur or continue for a long period of time, our business, results of operations and financial condition may be materially adversely affected.

Our success depends on our ability to identify, recruit and retain highly skilled, qualified personnel, and there is currently increased competition for talent. We have experienced labor shortages and wage inflation amid low levels of unemployment and workforce availability. As a result, we may not be able to attract and retain qualified personnel, which may impact our ability to manufacture, design and develop our propulsion solutions and to compete effectively. In addition, we may continue to experience increased labor costs, which may impact our results of operations.

Prolonged inflation could result in higher costs and decreased margins and earnings.

Recent inflationary pressures have resulted in increased raw material, labor, energy, freight and logistics expenses and other costs, which impacted our margins in 2022 and may continue to adversely affect our results of operations. If our costs are subject to continuing significant inflationary pressures, we may not be able to fully offset such higher costs through price increases. Our inability to do so could harm our results of operation.

Geopolitical risks, including the war in Ukraine, may have an adverse effect on our results of operations and financial conditions, including on the availability of raw materials for our products or component parts, our supply chain, our customers and our long-term sales opportunities.

Political, economic and other conditions in foreign countries and regions, including geopolitical risks such as escalating tensions between China and western countries and the current conflict between Russia and Ukraine, may have an adverse effect on our results of operations and financial condition. As a result of Russia's invasion of Ukraine and actions by the U.S. and other governments to implement sanctions against Russia, as well as certain businesses, individuals and banks in Russia, we have suspended indefinitely all sales and exports of our products to customers in Russia and Belarus and Russian- and Belarusian-affiliated, owned or controlled entities. These actions did not have a material impact on our net sales in 2022 and are not expected to have a material impact on our net sales in 2023. However, the duration of the war in Ukraine, its impact on the regional and global economy, and the breadth, severity and duration of sanctions imposed by the U.S. and other governments is uncertain. An extended war could impact our ability or those of our suppliers or customers to obtain certain raw materials or component parts and could limit the availability and cost of energy throughout Europe, which could increase our costs, impact our ability to deliver our products or reduce customer demand. In addition, certain of our competitors may continue to sell products in Russia during this time, which may have a negative impact on our long-term sales opportunities in Russia. Since the beginning of the war in Ukraine, we have also experienced, and may continue to experience, an increase in cybersecurity attacks, which, if successful, may harm our business.

Volatility in and disruption to the global economic environment, including the impact of an economic recession, and changes in the regulatory and business environments in which we operate may have a material adverse effect on our business, results of operations and financial condition.

Increasing inflation, geopolitical risks and supply chain, labor and energy constraints have caused and may continue to cause volatility in and disruption to the global economic environment. Historically, the commercial vehicle industry as a whole has been more adversely affected by volatile economic conditions, such as a recession, than many other industries, as the purchase or replacement of commercial vehicles, which are durable items, can be deferred for many reasons, including reduced spending by end users. Future changes in the regulatory and business environments in which we operate, including increased geopolitical risks, trade protectionism and tariffs, may adversely affect our ability to sell our products or source materials needed to manufacture our products.

Furthermore, financial instability or bankruptcy at any of our suppliers or customers could disrupt our ability to manufacture our products and impair our ability to collect receivables, any or all of which may have a material adverse effect on our business, results of operations and financial condition. In addition, some of our customers and suppliers may experience serious cash flow problems and, thus, may find it difficult to obtain financing, if financing is available at all. As a result, our customers' need for and ability to purchase our products or services may decrease, and our suppliers may increase their prices, reduce their output or change their terms of sale. Any inability of customers to pay us for our products and services, or any demands by suppliers for different payment terms, may materially and adversely affect our results of operations and financial condition. Furthermore, our suppliers may not be successful in generating sufficient sales or securing alternate financing arrangements, and therefore may no longer be able to supply goods and services to us. In that event, we would need to find alternate sources for these goods and services, and there is no assurance we would be able to find such alternate sources on favorable terms, if at all. Any such disruption in our supply chain could adversely affect our ability to manufacture and deliver our products on a timely basis, and thereby affect our results of operations.

Our financial condition and results of operations have been and may continue to be materially adversely affected by pandemics, including the coronavirus pandemic.

The effects of the COVID-19 pandemic on the global economy continued to have an impact on commercial vehicle production schedules, which impacted the sales of our products and our results of operations during 2022. While we continued to experience a recovery in demand for our products during 2022, ongoing supply chain, labor, raw material, energy, freight and logistics constraints have negatively impacted, and may continue to negatively impact, the sales of our products, costs and our results of operations. In addition, future pandemic-related impacts on the global economy, including inflation, may continue to adversely impact our business and results of operations. The extent to which the COVID-19 pandemic may continue to adversely impact our business depends on future developments, which are highly uncertain and unpredictable, including the severity and duration of the outbreak, emerging variants of the virus that may be more contagious than current variants and the actions taken by governments to contain or mitigate its effects, including the availability, pace of distribution, acceptance of and effectiveness of vaccines. Any future financial impact cannot be estimated reasonably at this time, but may materially adversely affect our business, supply chain, sales, results of operations, financial condition and cash flows.

Certain of our end users operate in highly cyclical industries, which can result in uncertainty and significantly impact the demand for our products, which could have a material adverse effect on our business, results of operations and financial condition.

Some of the markets in which we operate, including energy, mining, construction, distribution and motorhomes, exhibit a high degree of cyclicity. Decisions to purchase our products are largely a result of the performance of these and other industries we serve. If demand for output in these industries decreases, the demand for our products will likely decrease. Demand in these industries is impacted by numerous factors, including prices of commodities, rates of infrastructure spending, housing starts, real estate equity values, interest rates, consumer spending, fuel costs, energy demands, municipal spending, commercial construction and global pandemics, among others. Increases or decreases in these variables globally may significantly impact the demand for our products, which could have a material adverse effect on our business, results of operations and financial condition. If we are unable to accurately predict demand, we may be unable to meet our customers' needs, resulting in the loss of potential sales, or we may manufacture excess products, resulting in increased inventories and overcapacity in our production facilities, increasing our unit production cost and decreasing our operating margins.

Our sales are concentrated among our top five OEM customers and the loss or consolidation of any one of these customers or the discontinuation of particular vehicle models for which we are a significant supplier could reduce our net sales and have a material adverse effect on our results of operations and financial condition.

We have in the past and may in the future derive a significant portion of our net sales from a relatively limited number of OEM customers. For the years ended December 31, 2022, 2021 and 2020, our top five OEM customers accounted for approximately 51%, 52% and 53% of our net sales, respectively. Our top three customers, Daimler AG, Traton SE and PACCAR Inc., accounted for approximately 20%, 10% and 9%, respectively, of our net sales during 2022. The loss of, or consolidation of, any one of these customers, or a significant decrease in business from, one or more of these customers could harm our business. In addition, the discontinuation of particular vehicle models for which we are a significant supplier could reduce our net sales and have a material adverse effect on our results of operations.

We are subject to cybersecurity risks to operational systems, security systems, or infrastructure owned by Allison or third-party vendors or suppliers.

We are at risk for interruptions, outages, and breaches of: (i) operational systems, including business, financial, accounting, product development, data processing, or manufacturing processes, owned by us or our third-party vendors or suppliers; (ii) facility security systems, owned by us or our third-party vendors or suppliers; and/or (iii) vehicle propulsion control modules or other in-product technology, owned by us or our third-party vendors or suppliers. Such cyber incidents could materially disrupt operational systems; result in loss of intellectual property, trade secrets or other proprietary or competitively sensitive information; compromise personally identifiable information of employees, customers, suppliers, or others; jeopardize the security of our facilities; and/or affect the performance of vehicle propulsion control modules or other in-product technology. A cyber incident could be caused by malicious third parties using sophisticated, targeted methods to circumvent firewalls, encryption, and other security defenses, including hacking, fraud, trickery, or other forms of deception. The techniques used by third parties change frequently and may be difficult to detect for long periods of time. A significant cyber incident could impact production capability, harm our reputation and/or subject us to regulatory actions or litigation, including those as result of global privacy and security regulations, any of which could materially affect our business, results of operations and financial condition. While we utilize a number of measures to prevent, detect and mitigate these threats, including employee education, monitoring of networks and systems, and maintenance of backup and protective systems, there is no guarantee such efforts will be successful in preventing a cyber incident.

Our sales to the Defense end market are to government entities and contractors for the U.S. and foreign governments, and the loss of a significant number of our contracts, or budgetary declines or future reductions or changes in spending by the U.S. or foreign governments could have a material adverse effect on our results of operations and financial condition.

Our net sales to the Defense end market are derived from contracts (revenue arrangements) with agencies of, and prime system contractors for, the U.S. government and foreign governments. If a significant number of our Defense contracts and subcontracts are simultaneously delayed or cancelled for budgetary, performance or other reasons, it would have a material adverse effect on our results of operations and financial condition. Approximately 5%, or \$146 million, of our net sales for the year ended December 31, 2022 were from our Defense end market.

Our future financial results may be adversely affected by:

- declines in, or uncertainty regarding, U.S. or foreign government defense budgets;
- curtailment of the U.S. government's use of technology or other services and product providers, including curtailment due to government budget reductions, future government shutdowns and related fiscal matters;

- geopolitical developments, including economic sanctions, that affect demand for our products and services;
- technological developments that impact purchasing decisions or our competitive position; and
- increased regulatory requirements for defense contractors.

Our brand and reputation are dependent on the continued participation and level of service of our numerous independent distributors and dealers.

We work with a network of approximately 1,600 independent distributors and dealers that provide post-sale service, service parts and support equipment. Because we depend on the pull-through demand generated by end users for our products, any actions by the independent distributors or dealers, which are not in our control, may harm our reputation and damage the brand loyalty among our customer base. In the event that we are not able to maintain our brand reputation because of the actions of our independent distributors and dealers, we may face difficulty in maintaining our pricing positions with respect to some of our products or have reduced demand for our products, which could negatively impact our business, results of operations and financial condition. In addition, if a significant number of independent dealers were to terminate their contracts, it could adversely impact our business, results of operations and financial condition.

In the event of a catastrophic loss of our key manufacturing facility, our business would be adversely affected.

While we manufacture our products in several facilities and maintain insurance covering our facilities, including business interruption insurance, a catastrophic loss of the use of all or a portion of one of our manufacturing facilities due to accident, labor issues, weather conditions, acts of war, political unrest, terrorist activity, natural disaster or extreme weather events, which may increase in frequency and intensity as a result of climate change, public health crises, such as pandemics and epidemics or otherwise, whether short- or long-term, would have a material adverse effect on our business, results of operations and financial condition. Our most significant concentration of manufacturing is around our corporate headquarters in Indianapolis, Indiana, where we produce approximately 90% of our transmissions. In addition to our Indianapolis manufacturing facilities, we currently operate manufacturing facilities for our fully electric propulsion solutions in Auburn Hills, Michigan, for our transmissions in both Szentgotthard, Hungary and Chennai, India and for our aluminum die cast components in Lewisburg, Tennessee. In the event of a disruption at the Indianapolis facilities, our other facilities may not be adequately equipped to operate at a level sufficient to compensate for the volume of production at the Indianapolis facility due to their size and the fact that they have not yet been tested for such significant increases in production volume.

Strategic Risks

Our success depends on research and development efforts, and we may not be successful in developing or introducing new products and technologies, including electric propulsion solutions, and responding to customer needs.

Our success depends on our ability to develop or introduce new products and technologies and improve the efficiency and performance of our current products, and we invest significant resources in research and development in order to do so. We currently have enhancements to our existing products and technologies and new products and technologies under development, including electric hybrid and fully electric propulsion solutions, for planned introduction into certain end markets. The development of new products and technologies is difficult, time-consuming and costly and the timetable for commercial release is uncertain. Not all of our new product launches have been successful, and we may not be successful in the future in introducing other new products and

responding to customer needs. In addition, it often takes significant time, in some cases multiple fleet buy cycles, before customers gain experience with new products and technologies and those new products and technologies become widely-accepted by the market, if at all. Given the early stages of development of some of these new products and technologies, there can be no guarantee of future market acceptance and investment returns with respect to these products. In addition, the increased adoption of electric propulsion solutions could result in lower demand for our fully automatic transmissions and, over time, the demand for related service parts and support equipment, which would impact our margins. If we do not adequately anticipate the changing needs of our customers by keeping pace with improvements and changes in vehicle propulsion technology and developing and introducing new and effective products and technologies on a timely basis, or if the products and technologies we develop do not become market-leading, our competitive position and prospects could be harmed. If our competitors are able to respond to changing market demands and adopt new technologies more quickly than we do, demand for our products could decline, our competitive position could be harmed, our future research and development activities may be constrained due to intellectual property rights of others, licenses for technologies that would enable us to keep pace with our competitors may not be available on commercially reasonable terms if at all and we may not be able to recoup a return on our development investments. Moreover, changing customer demands as well as evolving regulatory, safety and environmental standards could require us to adapt our products and technologies to address such changes. As a result, in the future we may experience delays in the introduction of some or all of our new products or modifications or enhancements of existing products. Furthermore, there may be production delays due to unanticipated technological setbacks, which may, in turn, delay the release of new products to our end users. If the rate of adoption of new technologies, including electric vehicles for the medium- and heavy-duty commercial market, occurs at a pace that is faster than we are anticipating, we may not have products available to meet that accelerated timeframe. If we experience significant delays or increased costs in the production, launch or acceptance of our products and technologies, our net sales and results of operations may be materially adversely affected.

Our long-term growth prospects and results of operations may be impaired if the rate of adoption of fully automatic transmissions in commercial vehicles outside North America does not increase.

Our long-term growth strategy depends in part on an increased rate of automaticity outside North America. As part of that strategy, we have established manufacturing facilities in India and Hungary. We have also dedicated significant human resources to serve markets where we anticipate increased adoption of automaticity. However, manual transmissions remain the market leader outside North America, and there can be no assurance that adoption of automatic transmissions will increase. Factors potentially impacting adoption of automatic transmissions outside of North America include the large existing installed base of manual transmissions, customer preferences for manual transmissions, commercial vehicle OEM vertical integration into manual transmission and AMT manufacturing, increased competition from AMTs, electric propulsion solutions, and other alternative transmission and propulsion solution technologies and failure to further develop the Allison brand. If the rate of adoption of fully automatic transmissions does not increase as we have anticipated, our long-term growth prospects and results of operations may be impaired.

Our international operations, in particular our emerging markets, are subject to various risks which could have a material adverse effect on our business, results of operations and financial condition.

Our business is subject to certain risks associated with doing business internationally, particularly in emerging markets. Outside-North America net sales represented approximately 26% of our net sales for 2022. Most of our operations are in the U.S., but we also have manufacturing and customization facilities in India and Hungary with a services agreement with Stellantis NV and customization capability in Brazil, the Netherlands, China and Japan. Further, we intend to continue to pursue growth opportunities for our business in a variety of business environments

outside the U.S., which could exacerbate the risks set forth below. Our international operations are subject to, without limitation, the following risks:

- the burden of complying with multiple and possibly conflicting laws and any unexpected changes in regulatory requirements;
- foreign currency exchange controls, sanctions, import and export restrictions and tariffs, including restrictions promulgated by the Office of Foreign Assets Control of the U.S. Department of the Treasury, and other trade protection regulations and measures;
- political risks, including increased trade protectionism and risks of loss due to civil disturbances, acts of terrorism, acts of war, guerilla activities and insurrection;
- unstable economic, financial and market conditions and increased expenses as a result of inflation, higher energy costs or higher interest rates;
- difficulties in enforcement of third-party contractual obligations and intellectual property rights and collecting receivables through foreign legal systems;
- difficulty in staffing and managing international operations and the application of foreign labor regulations;
- differing local product preferences and product requirements;
- fluctuations in currency exchange rates to the extent that our assets or liabilities are denominated in a currency other than the functional currency of the country where we operate;
- potentially adverse tax consequences from changes in tax laws, requirements relating to withholding taxes on remittances and other payments by subsidiaries and restrictions on our ability to repatriate dividends from our subsidiaries; and
- exposure to liabilities under anti-corruption and anti-money laundering laws, including the U.S. Foreign Corrupt Practices Act ("FCPA") and similar laws and regulations in other jurisdictions.

Any one of these factors could materially adversely affect our sales of products or services to international customers or harm our reputation, which could have a material adverse effect on our business, results of operations and financial condition.

We may not be able to identify or consummate acquisitions or partnerships or achieve expected benefits from or effectively integrate acquisitions or partnerships, which could harm our growth.

From time to time, we evaluate selective acquisitions, partnerships and strategic investments. Potential and completed acquisitions and partnerships involve many risks that could have an adverse effect on our business, financial condition or results of operations, including:

- our ability to identify suitable acquisition or partnership candidates, prevail against competing potential acquirers or partners and negotiate and consummate acquisitions or partnerships on terms attractive to us;
- difficulties in integrating personnel and sales forces, operations, manufacturing, logistics, research and development, information technology, communications, purchasing, accounting, marketing, administration and other systems and processes and otherwise assimilating the operations of the acquired company;
- the diversion of resources, including diverting management's attention from our current operations;
- risks of entering new geographic or product markets in which we have limited or no direct prior experience;
- the potential loss of key customers, employees or suppliers of the acquired company or adverse effects on our existing business relationships with our suppliers and customers;
- the potential incurrence of indebtedness to fund the acquisition or partnerships;

- the acquired business or partnership not achieving anticipated revenues, earnings, cash flow or market share;
- excess capacity;
- failure to achieve the expected synergies or cost savings;
- the need for additional investments post-investment or post-acquisition that could be greater than anticipated;
- the impact of U.S. and foreign competition laws and regulations on our ability to make certain acquisitions, to enter into certain partnerships or to make certain strategic investments;
- inaccurate assessment of undisclosed, contingent or other liabilities or problems and unanticipated costs associated with the acquisition or partnership;
- incorrect estimates made in accounting for acquisitions, incurrence of non-recurring charges and write-off of significant amounts of goodwill that could adversely affect our financial results; and
- dilution of earnings.

We may also face liability with respect to acquired businesses for violations of environmental or other laws occurring prior to the date of our acquisition, and some or all of these liabilities may not be covered by environmental or other insurance secured to mitigate the risk or by indemnification from the sellers from which we acquired these businesses. We could also incur significant costs, including, but not limited to, remediation costs, natural resources damages, civil or criminal fines and sanctions and third-party claims, as a result of past or future violations of, or liabilities associated with, environmental or other laws.

We cannot offer any assurance that we will be able to consummate any future acquisitions, strategic investments, partnerships or other business combinations. If we are unable to identify suitable acquisition candidates or to consummate and successfully integrate our recent and any future acquisitions, our business and results of operations may be adversely affected as a result.

Legal and Regulatory Risks

Any events that impact our brand name, including if the products we manufacture or distribute are found to be defective, could have an adverse effect on our reputation, cause us to incur significant costs and negatively impact our business, results of operations and financial condition.

We face exposure to product liability claims in the event that the use of our products has, or is alleged to have, resulted in injury, death or other adverse effects. We currently maintain product liability insurance coverage, but we cannot be assured that we will be able to obtain such insurance on acceptable terms in the future, if at all, or that any such insurance will provide adequate coverage against potential claims. Product liability claims can be expensive to defend and can divert the attention of management and other personnel for long periods of time, regardless of the ultimate outcome. An unsuccessful product liability defense could have a material adverse effect on our business, results of operation, financial condition or prospects. If one of our products is determined to be defective, we may face substantial warranty costs and may be responsible for significant costs associated with a product recall or a redesign. We have had defect and warranty issues associated with certain of our products in the past, and similar product defects may occur in the future. See "Note 10. Product Warranty Liabilities" of Notes to Consolidated Financial Statements included in Part II, Item 8. of this Annual Report on Form 10-K for additional details regarding these warranty issues.

Furthermore, our business depends on the strong brand reputation we believe we have developed. In addition to the risk of defective products, we also face significant risks in our efforts to penetrate new markets, where we have limited brand recognition. We also rely on our reputation with end users of our products to specify our products when purchasing new vehicles from our OEM customers. In the event we are not able to maintain or enhance our

brand in these new markets or our reputation is damaged in our existing markets as a result of product defects or recalls, we may face difficulty in maintaining our pricing positions with respect to some of our products or experience reduced demand for our products, which could negatively impact our business, results of operations and financial condition.

Additionally, we license the “Allison Transmission” name and certain related trademarks to third parties. If any third party uses the trade name “Allison Transmission” in ways that adversely affect such trade name or trademark, our reputation could suffer damage, which in turn could have a material adverse effect on our business, results of operations and financial condition.

Many of the key patents and unpatented technology we use in our business are licensed to us, not owned by us, and our ability to use and enforce such patents and technology is restricted by the terms of the license.

Protecting our intellectual property rights is critical to our ability to compete and succeed as a company. General Motors Company (“GM”) has granted us an irrevocable, perpetual, royalty-free, worldwide license under a large number of U.S. and foreign patents and patent applications, as well as certain unpatented technology and know-how, to design, develop, manufacture, use and sell fully automatic transmissions and electric hybrid propulsion solutions for use in certain vocational vehicles, defense vehicles and off-road products. For the bulk of the intellectual property licensed to us, our license is exclusive with respect to the design, development, manufacture, use and sale of fully automatic transmissions and electric hybrid propulsion solutions in vocational vehicles above certain weight rating thresholds, certain defense vehicles and certain off-road products. It is non-exclusive with respect to certain other products that are within the scope of the licensed patents or to which the licensed technology can be applied. GM continues to own such patents and technology, and GM has the right, in the first instance, to control the maintenance, enforcement and defense of such patents and the prosecution of the licensed patent applications. In addition, our ability to sublicense our rights is limited.

We rely on unpatented technology, which exposes us to certain risks.

We currently do, and may continue in the future to, rely on unpatented proprietary technology. In such regard, we cannot be assured that any of our applications for protection of our intellectual property rights will be approved or that others will not infringe or challenge our intellectual property rights. It is possible our competitors will independently develop the same or similar technology or otherwise obtain access to our unpatented technology.

Although we believe the loss or expiration of any single patent would not have a material effect on our business, results of operations or financial position, there can be no assurance that any one, or more, of the patents or any other intellectual property owned by or licensed to us will not be challenged, invalidated or circumvented by third parties. In fact, a number of the patents licensed to us are set to expire in the next few years. When a patent expires, the inventions it discloses can be used freely by others. Thus, the competitive advantage that we gain from the patents licensed to us will decrease over time, and a greater burden will be placed on our own research and development and licensing efforts to develop and otherwise acquire technologies to keep pace with improvements of transmission-related technology in the marketplace. We enter into confidentiality and invention assignment agreements with employees, and into non-disclosure agreements with suppliers and appropriate customers so as to limit access to and disclosure of our proprietary information. We cannot be assured that these measures will provide meaningful protection for our trade secrets, know-how or other proprietary information in the event of any unauthorized use, misappropriation or disclosure. If we are unable to maintain the proprietary nature of our technologies, our ability to sustain margins on some or all of our products may be affected, which could reduce our sales and profitability. Moreover, the protection provided for our intellectual property by the laws and courts of foreign nations may not be as advantageous to us as the protection available under U.S. law.

Environmental, health and safety laws and regulations may impose significant compliance costs and liabilities on us.

Our manufacturing operations are subject to many environmental, health and safety laws and regulations governing emissions to air, discharges to water, the generation, handling and disposal of waste and the cleanup of contaminated properties. Compliance with these laws and regulations is costly. We have incurred and expect to continue to incur significant costs to maintain or achieve compliance with applicable environmental, health and safety laws and regulations. Moreover, regulatory bodies are increasingly adopting regulations that target limiting greenhouse gases and combatting climate change, which may impact our ability to sell our current products or require us to develop new products or technologies. If these environmental, health and safety laws and regulations that impact our operations or products become more stringent or expand to include a larger portion of our products or our customer's products in the future, we could incur additional costs in order to ensure that our business and products comply with such regulations. In addition, we may not be successful in developing products or technologies that comply with, or the vehicle or customer OEMs to which we sell our products may choose not to comply with, such laws and regulations, which could impact our ability to sell our products in certain locations, negatively impact our business and result in a loss of market share. Furthermore, if our products that are already placed in service are found to be non-compliant with certain laws, regulations and certifications, we may incur additional costs and fines. We cannot assure that we are in full compliance with all environmental, health and safety laws and regulations. Our failure to comply with applicable environmental, health and safety laws and regulations and permit requirements could result in civil or criminal fines, penalties or enforcement actions, third-party claims for property damage and personal injury, requirements to clean up property or to pay for the costs of cleanup or regulatory or judicial orders enjoining or curtailing operations or requiring corrective measures, including the installation of pollution control equipment or remedial actions. Our failure to comply could also result in our failure to secure adequate insurance for our business, resulting in significant exposure, diminished ability to hedge our risks and material modifications of our business operations.

We may be subject to liability as a potentially responsible party under the Comprehensive Environmental Response, Compensation and Liability Act and similar state or foreign laws for contaminated properties that we currently own, lease or operate or that we or our predecessors have previously owned, leased or operated, and sites to which we or our predecessors sent hazardous substances. Such liability may be joint and several so that we may be liable for more than our share of any contamination, and any such liability may be determined without regard to causation or knowledge of contamination. We or our predecessors have been named potentially responsible parties at contaminated sites from time to time.

There can be no assurances that future environmental remediation obligations will not have a material adverse effect on our results of operations and financial condition. In addition, we occasionally evaluate alternatives with respect to our facilities, including possible dispositions or closings. Investigations undertaken in connection with these activities may lead to discoveries of contamination that must be remediated, and closings of facilities may trigger remediation requirements that are not applicable to operating facilities. We may also face lawsuits brought by third parties that either allege property damage or personal injury as a result of, or seek reimbursement for costs associated with, such contamination.

Our business and financial results may be adversely affected by U.S. government contracting risks.

We are subject to various laws and regulations applicable to parties doing business with the U.S. government, including laws and regulations governing performance of U.S. government contracts, the use and treatment of U.S. government furnished property and the nature of materials used in our products. We may be unilaterally suspended or barred from conducting business with the U.S. government, or become subject to fines or other sanctions if we are found to have violated such laws or regulations. As a result of the need to comply with these laws and regulations, we are subject to increased risks of governmental investigations, civil fraud actions, criminal

prosecutions, whistleblower lawsuits and other enforcement actions. The laws and regulations to which we are subject include, but are not limited to, Export Administration Regulations, the Federal Acquisition Regulation, International Traffic in Arms Regulations and regulations from the Bureau of Alcohol, Tobacco, Firearms and Explosives and the FCPA.

U.S. government contracts are subject to modification, curtailment or termination by the U.S. government without prior written notice, either for convenience or for default as a result of our failure to perform under the applicable contract. If terminated by the U.S. government as a result of our default, we could be liable for additional costs the U.S. government incurs in acquiring undelivered goods or services from another source and any other damages it suffers. Additionally, we cannot assign prime U.S. government contracts without the prior consent of the U.S. government contracting officer, and we are required to register with the Central Contractor Registration Database. Furthermore, the U.S. government periodically audits our governmental contract costs, which could result in fines, penalties or adjustment of costs and prices under the contracts. The result of, or expiration of the statute of limitations for, such audits could have an impact on reported liabilities, net income and cash flow from operations.

Provisions of our amended and restated certificate of incorporation and amended and restated bylaws and Delaware law might discourage, delay or prevent a change of control of our company or changes in our management and, as a result, depress the trading price of our common stock.

Our amended and restated certificate of incorporation and amended and restated bylaws and certain provisions of the Delaware General Corporation Law contain provisions that could discourage, delay or prevent a change in control of our company or changes in our management that the stockholders of our company may deem advantageous. These provisions:

- authorize the issuance of blank check preferred stock that our Board of Directors could issue to increase the number of outstanding shares and to discourage a takeover attempt;
- prohibit our stockholders from calling a special meeting of stockholders;
- prohibit stockholder action by written consent, which requires all stockholder actions to be taken at a meeting of our stockholders;
- provide that the Board of Directors is expressly authorized to adopt, or to alter or repeal, our bylaws;
- establish advance notice requirements for nominations for election to our Board of Directors or for proposing matters that can be acted upon by stockholders at stockholder meetings; and
- require the approval of holders of at least two-thirds of the outstanding shares of common stock to amend the bylaws and certain provisions of the certificate of incorporation.

These anti-takeover defenses could discourage, delay or prevent a transaction involving a change in control of our company that our stockholders may believe to be in their best interests. These provisions could also discourage proxy contests and make it more difficult for our stockholders to elect directors of their choosing and cause us to take corporate actions other than those they desire.

Risks Related to Our Indebtedness and Financial Risks

Our indebtedness could adversely affect our financial health, restrict our activities and affect our ability to meet our obligations.

As of December 31, 2022, we had total indebtedness of \$2,525 million, and we would have been able to borrow an additional \$644 million, net of \$6 million of outstanding letters of credit, under Allison Transmission Inc.'s ("ATI"), our wholly-owned subsidiary, revolving credit facility with commitments in the amount of \$650 million due September 2025 ("Revolving Credit Facility"). As of December 31, 2022, we had no outstanding borrowings against

the Revolving Credit Facility. At December 31, 2022, \$625 million of our total indebtedness was associated with ATI's term loan facility due March 2026 ("Term Loan", and together with the Revolving Credit Facility, the "Senior Secured Credit Facility"), \$400 million of our total indebtedness was associated with ATI's 4.75% Senior Notes due October 2027 ("4.75% Senior Notes"), \$500 million of our total indebtedness was associated with ATI's 5.875% Senior Notes due June 2029 ("5.875% Senior Notes") and \$1,000 million of our total indebtedness was associated with ATI's 3.75% Senior Notes due January 2031 ("3.75% Senior Notes", and together with the 4.75% Senior Notes and 5.875% Senior Notes, the "Senior Notes"). For a complete description of the terms of the Senior Secured Credit Facility and the Senior Notes, please see "Note 8. Debt" in Part II, Item 8., of this Annual Report on Form 10-K .

Our indebtedness could have important consequences. For example, it could:

- make it more difficult for us to satisfy our obligations under our indebtedness;
- require us to further dedicate a substantial portion of our cash flow from operations to payments of principal and interest on our indebtedness, thereby reducing the availability of our cash flow to fund acquisitions, working capital, capital expenditures, research and development efforts and other general corporate purposes;
- increase our vulnerability to and limit our flexibility in planning for, or reacting to, downturns or changes in our business and the industry in which we operate;
- restrict us from making strategic acquisitions or cause us to make non-strategic divestitures;
- expose us to the risk of increased interest rates as borrowings under the Senior Secured Credit Facility are subject to variable rates of interest;
- place us at a competitive disadvantage compared to our competitors that have less debt; and
- limit our ability to borrow additional funds.

In addition, the Revolving Credit Facility contains a maximum total senior secured leverage ratio. The Senior Secured Credit Facility and the indentures governing the Senior Notes also contain other negative and affirmative covenants that will limit our ability to engage in activities that may be in our long-term best interests. Our failure to comply with any of the covenants could result in an event of default which, if not cured or waived, could result in the acceleration of all of our indebtedness.

To service our indebtedness, we will require a significant amount of cash, and our ability to generate cash depends on many factors beyond our control.

Our ability to make cash payments on our indebtedness and to fund planned capital expenditures will depend on our ability to generate significant operating cash flow in the future. This, to a significant extent, is subject to general economic, financial, competitive, legislative, regulatory and other factors that are beyond our control.

We cannot ensure that our business will generate sufficient cash flow from operations or that future borrowings will be available to us under the Revolving Credit Facility in an amount sufficient to enable us to pay our indebtedness or to fund our other liquidity needs. In such circumstances, we may need to refinance all or a portion of our indebtedness on or before maturity. We cannot ensure that we will be able to refinance any of our indebtedness on commercially reasonable terms or at all. If we cannot service our indebtedness, we may have to take actions such as selling assets, seeking additional equity or reducing or delaying capital expenditures, strategic acquisitions, investments and alliances. We cannot ensure that any such actions, if necessary, could be effected on commercially reasonable terms or at all.

Despite current indebtedness levels, we and our subsidiaries may still be able to incur additional indebtedness, which could further exacerbate the risks associated with our substantial financial leverage.

We and our subsidiaries may be able to incur additional indebtedness in the future because the terms of our indebtedness do not fully prohibit us or our subsidiaries from doing so. Subject to covenant compliance and certain conditions, our indebtedness permits additional borrowing, including total borrowing up to \$644 million under the Revolving Credit Facility, net of \$6 million in letters of credit. If new debt is added to our current debt levels and our subsidiaries' current debt levels, the related risks that we and they now face could intensify.

Our pension and other post-retirement benefits funding obligations could increase as a result of a variety of factors.

Our earnings may be positively or negatively impacted by the amount of income or expense recorded for our defined benefit pension plans and other post-retirement benefits ("OPEB"). Accounting principles generally accepted in the United States of America ("GAAP") require that income or expense for defined benefit pension plans be calculated at the annual measurement date, or more frequently if certain events occur, using actuarial assumptions and calculations. These calculations reflect certain assumptions, the most significant of which relate to the capital markets, interest rates, health care inflation rates and other economic conditions. Changes in key economic indicators can change these assumptions. These assumptions, along with the actual value of assets at the measurement date, will impact the calculation of pension expense for the year. Although GAAP pension expense and pension contributions are not directly related, the key economic indicators that affect GAAP pension expense also affect the amount of cash that we would contribute to our defined benefit pension plans. Because the values of these defined benefit pension plans' assets have fluctuated and will fluctuate in response to changing market conditions, the amount of gains or losses that will be recognized in subsequent periods, the impact on the funded status of the defined benefit pension plans and the future minimum required contributions, if any, could have a material adverse effect on our business, results of operations and financial condition. The magnitude of such impact cannot be determined with certainty at this time. However, the effect of a one percentage point decrease in the assumed discount rate would result in an increase in the December 31, 2022 defined benefit pension plans obligation of approximately \$17 million. Likewise, a one percentage point decrease in the effective interest rate for determining defined benefit pension plans contributions would result in an increase in the minimum required contributions for 2023 of approximately \$2 million. Similarly, a one percentage point decrease in the assumed discount rate would result in an increase in the December 31, 2022 OPEB obligation of approximately \$8 million. As of December 31, 2022, the unfunded status of our defined benefit pension plans was \$3 million and the unfunded status of our OPEB plan was \$73 million.

An impairment in the carrying value of goodwill, other intangible assets or long-lived assets could negatively affect our consolidated results of operations and net worth.

Pursuant to GAAP, we are required to assess our goodwill and indefinite-lived intangible assets to determine if they are impaired on an annual basis, or more often if events or changes in circumstances indicate that impairment may have occurred. Intangible assets with finite lives are amortized over the useful life and are reviewed for impairment on triggering events such as events or changes in circumstances indicating that an impairment may have occurred. If the testing performed indicates that impairment has occurred, we are required to record a non-cash impairment charge for the difference between the carrying value of the goodwill and the implied fair value of the goodwill or the carrying value of the intangible assets and the fair value of the intangible assets in the period the determination is made. Disruptions to our business, end market conditions, protracted economic weakness, unsuccessful development of product and unexpected significant declines in operating results may result in charges for goodwill and other asset impairments. See "Note 2. Summary of Significant Accounting Policies" and "Note 6.

Goodwill and Other Intangible Assets” of Notes to Consolidated Financial Statements included in Part II, Item 8. of this Annual Report on Form 10-K for additional details.

The carrying value of long-lived assets is evaluated whenever events or circumstances indicate that the carrying value of a long-lived asset may not be recoverable. Events or circumstances that would result in an impairment review primarily include a significant change in the use of an asset, a significant change in the projected future cash flows generated by an asset or the planned sale or disposal of an asset. The asset would be considered impaired when there is no future use planned for the asset or the future net undiscounted cash flows generated by the asset or asset group are less than its carrying value. An impairment loss would be recognized based on the amount by which the carrying value exceeds fair value and could have a material adverse effect on the results of our operations. See "Note 2. Summary of Significant Accounting Policies" and "Note 5. Property, Plant and Equipment" of Notes to Consolidated Financial Statements included in Part II, Item 8. of this Annual Report on Form 10-K for additional details.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our world headquarters, which we own, is located at One Allison Way, Indianapolis, Indiana 46222. As of December 31, 2022, we have 19 manufacturing and certain other facilities in eight countries. The following table sets forth certain information regarding our significant facilities.

Plant	Location	Approximate Size (ft ²)	Owned / Leased	Description
Plant #3	Indianapolis	927,000	Own	Engineering, Operational Support
Plant #4	Indianapolis	425,900	Own	Manufacturing
Plant #6	Indianapolis	431,500	Own	Manufacturing
Plant #12	Indianapolis	534,900	Own	Manufacturing
Plant #14 and #15	Indianapolis	481,100	Own	Manufacturing
Plant #16	Indianapolis	391,700	Own	Manufacturing
Plant #17	Indianapolis	389,000	Own	Parts Distribution Center
Innovation Center	Indianapolis	96,000	Own	Engineering, Research and Development
Vehicle Electrification + Environmental Test (VE+ET) Center	Indianapolis	66,000	Own	Research and Development
Auburn Hills	Auburn Hills, Michigan, USA	110,400	Lease	Engineering, Operational Support, Manufacturing
Walker Die Casting	Lewisburg, Tennessee, USA	774,100	Own	Manufacturing
Chennai	India	331,700	Own	Manufacturing
Szentgotthard	Hungary	149,000	Own	Manufacturing & Customization

We believe all our facilities are suitable for their intended purpose, are being efficiently utilized and provide adequate capacity to meet demand for the next several years. The table above does not include sales offices located in various countries.

ITEM 3. LEGAL PROCEEDINGS

We are subject to various contingencies, including routine legal proceedings and claims arising out of the normal course of business. These proceedings primarily involve commercial claims, product liability claims, personal injury claims and workers' compensation claims. The outcome of these lawsuits, legal proceedings and claims cannot be predicted with certainty. Nevertheless, we believe the outcome of any of these currently existing proceedings, even if determined adversely, would not have a material adverse effect on our financial condition or results of operations. See also "Note 18. Commitments and Contingencies" in Part II, Item 8., of this Annual Report on Form 10-K.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II.**ITEM 5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities****Market Information**

Our common stock is listed on the NYSE under the symbol “ALSN.”

Holder

As of February 1, 2023, there were approximately 92,975 stockholders of record of our common stock, which includes the actual number of holders registered on the books of the Company and holders of shares in “street name” or persons, partnerships, associations, corporations or other entities identified in security position listings maintained by depositories.

Unregistered Sales of Equity Securities

During the period covered by this Annual Report on Form 10-K, we did not offer or sell any equity securities that were not registered under the Securities Act of 1933, as amended (the “Securities Act”).

Issuer Purchases of Equity Securities

The Company's current stock repurchase program (the "Repurchase Program") was authorized by the Board of Directors in 2016, with increases approved by the Board of Directors on each of November 8, 2017, July 30, 2018, May 9, 2019 and February 24, 2022, which in the aggregate authorized total repurchases of up to \$4,000 million in shares of our common stock. The Repurchase Program has no termination date, and the timing and amount of stock purchases are subject to market conditions and corporate needs. The Repurchase Program may be modified, suspended or discontinued at any time at the Company’s discretion.

The following table sets forth information related to our repurchase of our common stock on a monthly basis in the three months ended December 31, 2022:

	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Programs ⁽¹⁾	Approximate Dollar Value of Shares that May Yet Be Purchased Under Programs ⁽¹⁾
October 1 – October 31, 2022	1,492,094	\$ 36.16	1,492,094	\$ 1,035,298,103
November 1 – November 30, 2022	4,100	\$ 40.94	4,100	\$ 1,035,130,253
December 1 – December 31, 2022	—	\$ —	—	\$ 1,035,130,253
Total	1,496,194	36.17	1,496,194	

⁽¹⁾ These values reflect repurchases made under the Repurchase Program.

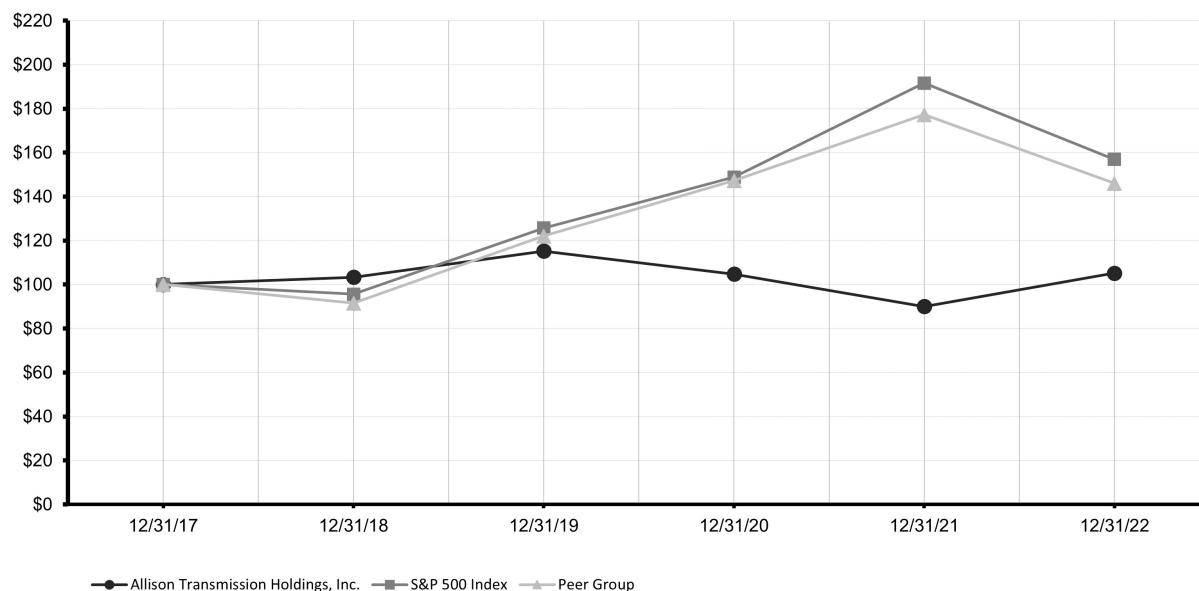
Issuances Under Equity Compensation Plans

For information regarding the securities authorized for issuance under our equity compensation plans, see Part III, Item 12. of this Annual Report on Form 10-K.

Comparative Stock Performance Graph

The information included under the heading “Comparative Stock Performance Graph” in this Item 5. of Part II of this Annual Report on Form 10-K shall not be deemed to be “soliciting material” or subject to Regulation 14A or 14C, shall not be deemed “filed” for purposes of Section 18 of the Exchange Act, or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act or the Exchange Act.

Set forth below is a graph comparing the total cumulative returns of ALSN, the S&P 500 Index and an index of peer companies selected by us. Our peer group includes Donaldson Company, Inc., Graco Inc., Roper Technologies, Inc., Gentex Corporation, Rockwell Automation, Inc. and Sensata Technologies Holding PLC. The graph assumes \$100 was invested on December 31, 2017 in our common stock and each of the indices and that all dividends, if any, are reinvested.



	As of December 31, 2017	As of December 31, 2018	As of December 31, 2019	As of December 31, 2020	As of December 31, 2021	As of December 31, 2022
Allison Transmission Holdings, Inc.	\$ 100.00	\$ 103.34	\$ 115.22	\$ 104.75	\$ 90.00	\$ 105.16
S&P 500 Index	100.00	95.62	125.72	148.85	191.58	156.88
Peer Group	100.00	91.57	122.08	147.25	177.25	145.98

ITEM 6. [RESERVED]

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

The following discussion contains forward-looking statements regarding industry trends, our expectations regarding our future performance, liquidity and capital resources and other non-historical statements that involve risks and uncertainties. Our actual results may differ materially from those discussed in or implied by the forward-looking statements as a result of various factors, including, without limitation, those set forth under Part I, Item 1A., "Risk Factors," and other matters included elsewhere in this Annual Report on Form 10-K. The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and the notes thereto included elsewhere in this Annual Report on Form 10-K.

This section of this Annual Report on Form 10-K generally discusses 2022 and 2021 items and year-over-year comparisons between 2022 and 2021. A detailed discussion of 2020 items and year-over-year comparisons between 2021 and 2020 that are not included in this Annual Report on Form 10-K can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7. of our Annual Report on Form 10-K for the year ended December 31, 2021, as filed with the SEC on February 17, 2022.

Overview

We design and manufacture vehicle propulsion solutions, including commercial-duty on-highway, off-highway and defense fully automatic transmissions and electric hybrid and fully electric systems. The business was founded in 1915 and has been headquartered in Indianapolis, Indiana since inception. Allison is traded on the New York Stock Exchange under the symbol, "ALSN".

We have approximately 3,500 employees. Although approximately 74% of revenues were generated in North America in 2022, we have a global presence by serving customers in Asia, Europe, South America and Africa. We serve customers through an independent network of approximately 1,600 independent distributor and dealer locations worldwide.

Trends Impacting Our Business

Global markets continue to experience supply chain, labor, energy and raw material constraints as a result of global economic volatility, the war in Ukraine and the COVID-19 pandemic, that impacted our business in 2022 and continue to impact our business performance. As a result, during 2022 we experienced raw material and component part price inflation, increased freight and logistics costs, increased labor costs, production constraints due to labor shortages and increased foreign exchange volatility. In addition, our net sales for 2022 were negatively impacted as a result of our customers' inability to secure components from the broader commercial vehicle supply base which resulted in reduced commercial vehicle build schedules and the inability of the commercial vehicle market to produce sufficient quantities to meet demand. We expect that commercial vehicle build schedules will continue to be negatively impacted by the availability of components in 2023.

Our net sales are driven by commercial vehicle production, which tends to be highly correlated to macroeconomic conditions. In 2023, we expect higher net sales driven by price increases on certain products and the continued execution of growth initiatives.

Full Year 2022 and 2021 Net Sales by End Market (in millions)

End Market	2022 Net Sales	2021 Net Sales	% Variance
North America On-Highway	\$ 1,359	\$ 1,177	15 %
North America Off-Highway	86	58	48 %
Defense	146	186	(22)%
Outside North America On-Highway	463	381	22 %
Outside North America Off-Highway	127	83	53 %
Service Parts, Support Equipment and Other	588	517	14 %
Total Net Sales	\$ 2,769	\$ 2,402	15 %

North America On-Highway end market net sales were up 15% for the year ended December 31, 2022 compared to the year ended December 31, 2021, principally driven by strength in customer demand for last mile delivery, regional haul and vocational trucks.

Global Off-Highway end market net sales were up 51% for the year ended December 31, 2022 compared to the year ended December 31, 2021, principally driven by demand for hydraulic fracturing applications in the energy sector as well as higher demand in the mining and construction sectors.

Defense end market net sales were down 22% for the year ended December 31, 2022 compared to the year ended December 31, 2021, principally driven by lower usage of defense vehicles during the COVID-19 pandemic leading to lower demand for Tracked and Wheeled vehicle applications.

Outside North America On-Highway end market net sales were up 22% for the year ended December 31, 2022 compared to the year ended December 31, 2021, principally driven by the continued execution of our growth initiatives in EMEA, Asia-Pacific and South America.

Service Parts, Support Equipment and Other end market net sales were up 14% for the year ended December 31, 2022 compared to the year ended December 31, 2021, principally driven by higher demand for global service parts and support equipment and price increases on certain products.

Key Components of our Results of Operations**Net sales**

We generate our net sales primarily from the sale of vehicle propulsion solutions, service and component parts, support equipment, defense kits, engineering services, royalties and extended transmission coverage to a wide array of OEMs, distributors and the U.S. government. Sales are recorded in accordance with the terms of the contract, net of provisions for customer allowances and other rebates. Engineering services are recorded as net sales in accordance with the terms of the contract. The associated costs are recorded in cost of sales. We also have royalty agreements with third parties that provide net sales as a result of joint efforts in developing marketable products.

Cost of sales

Our primary components of cost of sales are purchased parts, the overhead expense related to our manufacturing operations and direct labor associated with the manufacture and assembly of vehicle propulsion solutions and parts. For the year ended December 31, 2022, direct material costs were approximately 66%, overhead costs were approximately 27% and direct labor costs were approximately 7% of total cost of sales. We are subject to changes in our cost of sales caused by movements in underlying commodity prices. We seek to hedge against this risk by using LTAs. See Part II, Item 7A., "Quantitative and Qualitative Disclosures about Market Risk—Commodity Price Risk" included in this Annual Report on Form 10-K.

Selling, general and administrative

The principal components of our selling, general and administrative expenses are salaries and benefits for our office personnel, advertising and promotional expenses, product warranty expense, expenses relating to certain information technology systems and amortization of our intangible assets.

Engineering — research and development

We incur costs in connection with research and development programs that are expected to contribute to future earnings. Such costs are expensed as incurred.

Non-GAAP Financial Measures

We use Adjusted Earnings before Interest, Taxes, Depreciation, and Amortization (“EBITDA”) and Adjusted EBITDA as a percent of net sales to measure our operating profitability. We believe that Adjusted EBITDA and Adjusted EBITDA as a percent of net sales provide management, investors and creditors with useful measures of the operational results of our business and increase the period-to-period comparability of our operating profitability and comparability with other companies. Adjusted EBITDA as a percent of net sales is also used in the calculation of management’s incentive compensation program. The most directly comparable GAAP measure to Adjusted EBITDA and Adjusted EBITDA as a percent of net sales is Net income and Net income as a percent of net sales, respectively. Adjusted EBITDA is calculated as earnings before interest expense, net, income tax expense, amortization of intangible assets, depreciation of property, plant and equipment and other adjustments as defined by the Second Amended and Restated Credit Agreement dated as of March 29, 2019 as amended (the “Credit Agreement”) governing ATI’s term loan facility due March 2026 (“Term Loan”). Adjusted EBITDA as a percent of net sales is calculated as Adjusted EBITDA divided by net sales.

We use Adjusted free cash flow to evaluate the amount of cash generated by our business that, after the capital investment needed to maintain and grow our business and certain mandatory debt service requirements, can be used for repayment of debt, stockholder distributions and strategic opportunities, including investing in our business. We believe that Adjusted free cash flow enhances the understanding of the cash flows of our business for management, investors and creditors. Adjusted free cash flow is also used in the calculation of management’s incentive compensation program. The most directly comparable GAAP measure to Adjusted free cash flow is Net cash provided by operating activities. Adjusted free cash flow is calculated as Net cash provided by operating activities, excluding non-recurring restructuring charges, after additions of long-lived assets.

The following is a reconciliation of Net income and Net income as a percent of net sales to Adjusted EBITDA and Adjusted EBITDA as a percent of net sales and a reconciliation of Net cash provided by operating activities to Adjusted free cash flow:

(unaudited, in millions)	For the years ended December 31,		
	2022	2021	2020
Net income (GAAP)	\$ 531	\$ 442	\$ 299
plus:			
Interest expense, net	118	116	137
Income tax expense	114	130	94
Depreciation of property, plant and equipment	109	104	96
Amortization of intangible assets	46	46	52
Unrealized loss (gain) on marketable securities (a)	22	(4)	—
Stock-based compensation expense (b)	18	14	17
Unrealized loss on foreign exchange (c)	6	—	2
Technology-related investment gain (d)	(6)	(3)	—
Acquisition-related earnouts (e)	2	1	1
Pension curtailment (f)	1	—	—
UAW Local 933 retirement incentive (g)	—	(2)	7
Restructuring charges (h)	—	—	14
Expenses related to long-term debt refinancing (i)	—	—	13
Adjusted EBITDA (Non-GAAP)	\$ 961	\$ 844	\$ 732
Net sales (GAAP)	\$ 2,769	\$ 2,402	\$ 2,081
Net income as a percent of net sales (GAAP)	19.2%	18.4%	14.4%
Adjusted EBITDA as a percent of net sales (Non-GAAP)	34.7%	35.1%	35.2%
Net cash provided by operating activities (GAAP)	\$ 657	\$ 635	\$ 561
(Deductions) or additions to reconcile to Adjusted free cash flow:			
Additions of long-lived assets	(167)	(175)	(115)
Restructuring charges (h)	—	—	12
Adjusted free cash flow (Non-GAAP)	\$ 490	\$ 460	\$ 458

- (a) Represents losses (gains) (recorded in Other (expense) income, net) related to an investment in the common stock of Jing-Jin Electric Technologies Co. Ltd.
- (b) Represents stock-based compensation expense (recorded in Cost of sales, Selling, general and administrative, and Engineering — research and development).
- (c) Represents losses (recorded in Other (expense) income, net) on intercompany financing transactions related to investments in plant assets for our India facility.
- (d) Represents gains (recorded in Other (expense) income, net) related to investments in co-development agreements to expand our position in propulsion solution technologies.
- (e) Represents expenses (recorded in Selling, general and administrative and Engineering — research and development) for earnouts related to our acquisition of Vantage Power Limited.
- (f) Represents a curtailment loss (recorded in Selling, general and administrative) for our European subsidiary's defined benefit pension plan.
- (g) Represents (adjustments) charges (recorded in Cost of sales) related to a 2018 to 2021 retirement incentive program for certain employees represented by the International Union, United Automobile, Aerospace and Agricultural Implement Workers of America ("UAW") pursuant to the UAW Local 933 collective bargaining agreement effective through November 2023.
- (h) Represents restructuring and pension plan settlement charges (recorded in Cost of sales, Selling, general and administrative, Engineering — research and development, and Other (expense) income, net) related to voluntary and involuntary separation programs for both hourly and salaried employees in 2020.
- (i) Represents expenses (recorded in Other (expense) income, net) related to the redemption of ATI's 5.0% Senior Notes due 2024 ("5.0% Senior Notes") in the fourth quarter of 2020.

Results of Operations

The following table sets forth certain financial information for the years ended December 31, 2022 and 2021. The following table and discussion should be read in conjunction with the information contained in our consolidated financial statements and the notes thereto included in Part II, Item 8. of this Annual Report on Form 10-K.

Comparison of years ended December 31, 2022 and 2021

(dollars in millions)	Years ended December 31,			
	2022	% of net sales	2021	% of net sales
Net sales	\$ 2,769	100%	\$ 2,402	100%
Cost of sales	1,472	53	1,257	52
Gross profit	1,297	47	1,145	48
Operating expenses:				
Selling, general and administrative	328	12	305	13
Engineering — research and development	185	7	171	7
Total operating expenses	513	19	476	20
Operating income	784	28	669	28
Other expense, net:				
Interest expense, net	(118)	(4)	(116)	(5)
Other (expense) income, net	(21)	(1)	19	1
Total other expense, net	(139)	(5)	(97)	(4)
Income before income taxes	645	23	572	24
Income tax expense	(114)	(4)	(130)	(6)
Net income	\$ 531	19%	\$ 442	18%

Net sales

Net sales for the year ended December 31, 2022 were \$2,769 million compared to \$2,402 million for the year ended December 31, 2021, an increase of 15%. The increase was principally driven by a \$182 million, or 15%, increase in net sales in the North America On-Highway end market principally driven by strength in customer demand for last mile delivery, regional haul and vocational trucks, an \$82 million, or 22%, increase in net sales in the Outside North America On-Highway end market principally driven by the continued execution of our growth initiatives in EMEA, Asia-Pacific and South America, a \$72 million, or 51%, increase in net sales in the Global Off-Highway end market principally driven by demand for hydraulic fracturing applications in the energy sector as well as higher demand in the mining and construction sectors and a \$71 million, or 14%, increase in net sales in the Service Parts, Support Equipment and Other end market principally driven by higher demand for global service parts and support equipment and price increases on certain products, partially offset by a \$40 million, or 22%, decrease in net sales in the Defense end market principally driven by lower usage of defense vehicles during the COVID-19 pandemic leading to lower demand for Tracked and Wheeled vehicle applications.

Cost of sales

Cost of sales for the year ended December 31, 2022 was \$1,472 million compared to \$1,257 million for the year ended December 31, 2021, an increase of 17%. The increase was principally driven by increased direct material and manufacturing expense commensurate with increased net sales and higher direct material costs.

Gross profit

Gross profit for the year ended December 31, 2022 was \$1,297 million compared to \$1,145 million for the year ended December 31, 2021, an increase of 13%. The increase was principally driven by \$170 million related to increased net sales and \$119 million of price increases on certain products, partially offset by \$96 million of higher direct material costs and \$38 million of higher manufacturing expense commensurate with increased net sales. Gross profit as a percent of net sales for the year ended December 31, 2022 decreased 90 basis points compared to the same period in 2021 principally driven by increased cost of goods sold, partially offset by price increases on certain products.

Selling, general and administrative

Selling, general and administrative expenses for the year ended December 31, 2022 were \$328 million compared to \$305 million for the year ended December 31, 2021, an increase of 8%. The increase was principally driven by higher product warranty expense and higher commercial activities spending.

Engineering — research and development

Engineering expenses for the year ended December 31, 2022 were \$185 million compared to \$171 million for the year ended December 31, 2021, an increase of 8%. The increase was principally driven by increased product initiatives spending.

Interest expense, net

Interest expense, net for the year ended December 31, 2022 was \$118 million compared to \$116 million for the year ended December 31, 2021, an increase of 2%. The increase was principally driven by \$10 million of higher interest expense on ATI's Term Loan due to higher variable interest rates, partially offset by \$8 million of lower interest expense on interest rate hedges.

Other (expense) income, net

Other (expense) income, net for the year ended December 31, 2022 was (\$21) million compared to \$19 million for the year ended December 31, 2021. The change was principally driven by \$26 million of unfavorable change in marketable securities, \$6 million of unfavorable foreign exchange on intercompany financing and \$5 million of unfavorable change associated with assets held in a rabbi trust.

Income tax expense

Income tax expense for the year ended December 31, 2022 was \$114 million resulting in an effective tax rate of 18%, compared to \$130 million of income tax expense and an effective tax rate of 23% for the year ended December 31, 2021. The decrease in income tax expense was principally driven by enacted state tax rate legislation that resulted in a deferred tax benefit, partially offset by increased taxable income. The decrease in the effective tax rate was principally driven by enacted state tax rate legislation that resulted in a deferred tax benefit.

Liquidity and Capital Resources

We generate cash primarily from operations to fund our operating, investing and financing activities. Our principal uses of cash are operating expenses, capital expenditures, working capital needs, debt service, dividends on common stock, stock repurchases, and strategic growth initiatives, including investments, acquisitions and collaborations. Our ability to generate cash in the future and our future uses of cash are subject to general economic, financial, competitive, legislative, regulatory and other factors that may be beyond our control. We had total available cash and cash equivalents of \$232 million and \$127 million as of December 31, 2022 and 2021, respectively. Of the available cash and cash equivalents, \$121 million was deposited in operating accounts and \$111 million was invested in U.S. government backed securities as of December 31, 2022, compared to December 31, 2021, when all of the \$127 million was deposited in operating accounts.

As of December 31, 2022, the total of cash held by foreign subsidiaries was \$57 million, the majority of which was at our subsidiaries located in China, the Netherlands, Japan and India. We manage our worldwide cash requirements considering available funds among the subsidiaries through which we conduct our business and the cost effectiveness with which those funds can be accessed. As a result, we do not currently anticipate that local liquidity restrictions will preclude us from funding our targeted expectations or operating needs with local resources.

We have not recognized any deferred tax liabilities associated with earnings in foreign subsidiaries, except for our subsidiary located in China, as they are intended to be permanently reinvested and used to support foreign operations or have no associated tax requirements. We have recorded a deferred tax liability of \$3 million for the tax liability associated with the remittance of previously taxed income and unremitted earnings for our subsidiary located in China. The remaining deferred tax liabilities, if recorded, related to unremitted earnings that are indefinitely reinvested are not material.

Our liquidity requirements are significant, primarily due to our debt service requirements. As of December 31, 2022, we had \$625 million of indebtedness associated with ATI's Term Loan, \$400 million of indebtedness associated with ATI's 4.75% Senior Notes due October 2027 ("4.75% Senior Notes"), \$500 million of indebtedness associated with ATI's 5.875% Senior Notes due June 2029 ("5.875% Senior Notes") and \$1,000 million of indebtedness associated with ATI's 3.75% Senior Notes due January 2031 ("3.75% Senior Notes" and, together with the 4.75% Senior Notes and 5.875% Senior Notes, the "Senior Notes"). Short-term and long-term debt service liquidity requirements consist of \$2 million of minimum required quarterly principal payments on ATI's Term Loan through its maturity date of March 2026 and periodic interest payments on ATI's Term Loan and the Senior Notes. There are no required quarterly principal payments on the Senior Notes. Long-term debt service liquidity requirements also consist of the payment in full of any remaining principal balance of ATI's Term Loan and the Senior Notes upon their respective maturity dates.

We made \$7 million of principal payments on the Term Loan during each of the years ended December 31, 2022 and 2021. Our ability to make payments on and refinance our indebtedness and to fund planned capital expenditures and growth initiatives will depend on our ability to generate cash in the future.

The Senior Secured Credit Facility provides for a \$650 million Revolving Credit Facility, net of an allowance for up to \$75 million in outstanding letter of credit commitments. Throughout the year ended December 31, 2022, we made periodic withdrawals and payments on the Revolving Credit Facility as part of our cash management plans. The maximum amount outstanding at any time during the year ended December 31, 2022 was \$75 million. As of December 31, 2022, we had \$644 million available under the Revolving Credit Facility, net of \$6 million in letters of credit. As of December 31, 2022, we had no amounts outstanding under the Revolving Credit Facility. If we have commitments outstanding on the Revolving Credit Facility at the end of a fiscal quarter, the Senior Secured Credit Facility requires us to maintain a specified maximum first lien net leverage ratio of 5.50x. Additionally, within the terms of the Senior Secured Credit Facility, a first lien net leverage ratio at or below 4.00x results in the elimination of excess cash flow payments on the Senior Secured Credit Facility for the applicable year. As of December 31, 2022, our first lien net leverage ratio was 0.41x. The Senior Secured Credit Facility also provides certain financial incentives based on our first lien net leverage ratio. A first lien net leverage ratio at or below 4.00x and above 3.50x results in a 25 basis point reduction to the applicable margin on the Revolving Credit Facility. A first lien net leverage ratio at or below 3.50x results in an additional 25 basis point reduction to the applicable margin on the Revolving Credit Facility. These reductions remain in effect as long as we achieve a first lien net leverage ratio at or below the related threshold.

In addition, the Credit Agreement includes, among other things, customary restrictions (subject to certain exceptions) on our ability to incur certain indebtedness, grant certain liens, make certain investments, engage in acquisitions, consolidations and mergers, declare or pay certain dividends, and repurchase shares of our common stock. The indentures governing the Senior Notes contain negative covenants restricting or limiting our ability to, among other things, incur or guarantee additional indebtedness, incur liens, pay dividends on, redeem or repurchase our capital stock, make certain investments, permit payment or dividend restrictions on certain of our subsidiaries, sell assets, engage in certain transactions with affiliates, and consolidate or merge or sell all or substantially all of our assets. As of December 31, 2022, we were in compliance with all covenants under the Senior Secured Credit Facility and indentures governing the Senior Notes.

Our credit ratings are reviewed by Moody's Investors Service ("Moody's") and Fitch Ratings ("Fitch"). As of December 31, 2022, our credit ratings from both Moody's and Fitch are shown in the table below:

<i>Credit Ratings</i>	December 31, 2022	
	Moody's	Fitch
Corporate Credit	Ba1	BB+
Term Loan	Baa2	BBB-
4.75% Senior Notes	Ba2	BB+
5.875% Senior Notes	Ba2	BB+
3.75% Senior Notes	Ba2	BB+

We anticipate that our capital expenditures in 2023 will be lower than 2022 and expect increased cash income taxes as a result of lower deductions in 2023 related to our intangible assets.

Our current stock repurchase program was originally authorized by the Board of Directors in 2016. On February 24, 2022, the Board of Directors authorized us to repurchase an additional \$1,000 million of our common stock, bringing the total amount authorized under the Repurchase Program to \$4,000 million. During 2022, we repurchased approximately \$278 million of our common stock under the Repurchase Program. All of the repurchase transactions during 2022 were settled in cash during the same period. As of December 31, 2022, we had approximately \$1,035 million available under the Repurchase Program.

The following table shows our sources and uses of funds for the years ended December 31, 2022, 2021 and 2020 (in millions):

<i>Statement of Cash Flows Data</i>	Years ended December 31,		
	2022	2021	2020
Cash flows provided by operating activities	\$ 657	\$ 635	\$ 561
Cash flows used for investing activities	(183)	(212)	(111)
Cash flows used for financing activities	(367)	(604)	(335)

Generally, cash provided by operating activities has been adequate to fund our operations. We have significant liquidity, including \$232 million of cash and cash equivalents and \$644 million available under the Revolving Credit Facility, net of \$6 million in letters of credit, as of December 31, 2022. At this time, we believe cash provided by operating activities, cash and cash equivalents and borrowing capacity under the Revolving Credit Facility will be sufficient to meet our known and anticipated cash requirements for the next twelve months and thereafter.

Cash provided by operating activities

Operating activities for the year ended December 31, 2022 generated \$657 million of cash compared to \$635 million for the year ended December 31, 2021. The increase was principally driven by higher gross profit, partially offset by higher cash incentive compensation payments, higher cash income taxes and higher cash interest payments.

Cash used for investing activities

Investing activities for the year ended December 31, 2022 used \$183 million of cash compared to \$212 million for the year ended December 31, 2021. The decrease was principally driven by a \$41 million investment in marketable securities in 2021 that did not reoccur in 2022 and an \$8 million decrease in capital expenditures, partially offset by \$23 million in cash paid for business acquisitions during 2022 compared to none in 2021.

Cash used for financing activities

Financing activities for the year ended December 31, 2022 used \$367 million of cash compared to \$604 million for the year ended December 31, 2021. The decrease was principally driven by \$278 million of stock repurchases in 2022 compared to \$513 million of stock repurchases in 2021 under the Repurchase Program.

Critical Accounting Estimates

The preparation of the consolidated financial statements in accordance with GAAP requires management to make estimates and assumptions that affect the reported amounts of some assets and liabilities and, in some instances, the reported amounts of net sales and expenses during the applicable reporting period. Differences between actual amounts and estimates are recorded in the period identified. Estimates can require a significant amount of judgment, and a different set of judgments could result in changes to our reported results. A summary of our critical accounting estimates is included below.

Revenue Recognition

Revenue recognition contains uncertainties because it requires management to make assumptions and to apply judgment to estimate the amount of sales incentives and provision for government price reductions. Distributor and customer sales incentives, consisting of allowances and other rebates, are estimated at the time of sale based upon history and experience and are recorded as a reduction to net sales. Incentive programs are generally product specific or region specific. Some factors used in estimating the cost of incentives include the number of transmissions that will be affected by the incentive program and the rate of acceptance of any incentive program. If the actual number of affected transmissions differs from this estimate, or if a different mix of incentives is actually paid, the impact on net sales would be recorded in the period that the change was identified. Assuming our current mix of sales incentives, a 10% change in sales incentives would correspondingly change our earnings by approximately \$10 million.

Under the terms of certain previous U.S. government contracts, there were price reduction clauses and provisions for potential price reductions which are estimated at the time of sale based upon history and experience, and finalized after completion of U.S. government audits. Given our current price reduction reserve for government contracts, a 10% adjustment in our price reduction reserve would correspondingly change our earnings by approximately \$5 million. Since 2014, Allison contracts with the U.S. Government have generally been firm, fixed price contracts and therefore have not required re-calculation of pricing based on cost principles.

Further information is provided in "Note 2. Summary of Significant Accounting Policies" of Notes to Consolidated Financial Statements included in Part II, Item 8., of this Annual Report on Form 10-K.

Goodwill and Other Intangible Assets

We have elected to perform our annual impairment tests for goodwill and indefinite-lived intangible assets on October 31 of every year using a multi-step impairment test. In Step 0, we have the option to evaluate various qualitative factors to determine the likelihood of impairment. If we determine that the fair value is more likely than not less than the carrying value, then we are required to perform Step 1. If we do not elect to perform Step 0, we can voluntarily proceed directly to Step 1. In Step 1, we perform a quantitative analysis to compare the fair value to our carrying value. If the fair value exceeds the carrying value, no impairment is recorded, and we are not required to perform further testing. If the carrying value exceeds fair value, we would record an impairment loss equal to the difference.

A qualitative assessment contains uncertainties because it requires management to make assumptions and to apply judgment to assess business changes, economic outlook, financial trends and forecasts, growth rates, credit ratings, equity ratings, discount rates, industry data and other relevant qualitative factors.

A quantitative analysis contains uncertainties because it is performed utilizing a discounted cash flow model which includes key assumptions, such as financial forecasts; net sales growth derived from market information, industry reports, marketing programs and future new product introductions; operating margin improvements derived from cost reduction programs and fixed cost leverage driven by higher sales volumes; and a risk-adjusted discount rate.

Goodwill represents the excess of purchase price paid over the fair value of net assets acquired. In accordance with the Financial Accounting Standards Board's ("FASB") authoritative accounting guidance on goodwill, we do not amortize goodwill but rather evaluate it for impairment on an annual basis, or more often if events or circumstances change that could cause goodwill to become impaired. Goodwill is tested for impairment at the reporting unit level, which is the same as our one operating and reportable segment. We do not aggregate any components into our reporting unit.

Goodwill impairment testing for 2022 was performed using the Step 0 analysis by assessing certain qualitative trends and factors. These trends and factors were compared to, and based on, the assumptions used in prior years. After reviewing the various qualitative factors mentioned above, our 2022 annual goodwill impairment test indicated that the fair value for the reporting unit more likely than not exceeded its carrying value, indicating no impairment.

Other intangible assets have both indefinite and finite useful lives. Intangible assets with indefinite useful lives are not amortized but are tested annually for impairment, or more often if events or circumstances change that could cause intangible assets with indefinite useful lives to become impaired. After reviewing the various qualitative factors mentioned above, our annual 2022 indefinite-lived intangible assets impairment tests, as of October 31, 2022, indicated that the fair value of our indefinite-lived intangible assets more likely than not exceeded their respective carrying values, indicating no impairment.

Intangible assets with finite lives are amortized over their estimated useful lives and reviewed for impairment when circumstances change that would create a triggering event. Customer relationships are amortized over the life in which expected benefits are to be consumed. The other remaining finite life intangibles are amortized on a straight-line basis over their useful lives. We evaluate the remaining useful life of the other intangible assets on a periodic basis to determine whether events or circumstances warrant a revision to the remaining useful life. Assumptions and estimates about future values and remaining useful lives of our intangible and other long-lived assets are complex and subjective. Such assumptions and estimates can be affected by a variety of factors, including external factors such as industry and economic trends, and internal factors, such as changes in our business strategy and internal forecasts. Although management believes the historical assumptions and estimates are reasonable and appropriate, different assumptions and estimates could materially impact our reported financial results. Further information is provided in "Note 6. Goodwill and Other Intangible Assets" of Notes to Consolidated Financial Statements included in Part II, Item 8., of this Annual Report on Form 10-K.

Impairment of Long-Lived Assets

The carrying value of long-lived assets is evaluated whenever events or circumstances indicate that the carrying value of a long-lived asset may not be recoverable. Events or circumstances that would result in an impairment review primarily include a significant change in the use of an asset, or the planned sale or disposal of an asset. The asset would be considered impaired when there is no future use planned for the asset or the future net undiscounted cash flows generated by the asset or asset group are less than its carrying value. An impairment loss would be recognized based on the amount by which the carrying value exceeds fair value.

Assumptions and estimates used to determine cash flows in the evaluation of impairment and the fair values used to determine the impairment are subject to a degree of judgment and complexity. Any changes to the assumptions and estimates resulting from changes in actual results or market conditions from those anticipated may affect the carrying value of long-lived assets and could result in an impairment charge.

Warranty

Provisions for estimated expenses related to product warranties are made at the time products are sold. Warranty claims arise when a transmission fails while in service during the relevant warranty period. The warranty reserve is adjusted in Selling, general and administrative expense based on our current and historical warranty claims paid and associated repair costs. These estimates are established using historical information including the nature, frequency, and average cost of warranty claims and are adjusted as actual information becomes available. From time to time, we may initiate a specific field action program. As a result of the uncertainty surrounding the nature and frequency of specific field action programs, the liability for such programs is recorded when we commit to an action. We review and assess the liability for these programs on a quarterly basis. We also assess our ability to recover certain costs from our suppliers and record a receivable from the supplier when we believe a recovery is probable. Warranty costs may differ from those estimated if actual claim rates are higher or lower than our historical rates. Further information is provided in "Note 10. Product Warranty Liabilities" of Notes to Consolidated Financial Statements included in Part II, Item 8., of this Annual Report on Form 10-K which contains a summary of the activity in our warranty liability account for 2022, 2021 and 2020, including adjustments to pre-existing warranties.

Pension and Post-retirement Benefit Plans

Pension and OPEB costs are based upon various actuarial assumptions and methodologies as prescribed by authoritative accounting guidance. These assumptions include discount rates, expected return on plan assets, health care cost trend rates, inflation, rate of compensation increases, population demographics, mortality rates and other factors. We review all actuarial assumptions on an annual basis.

A change in the discount rate can have a significant impact on determining our benefit obligations. Our current discount rate is determined by matching the plans' projected cash flows to a yield curve based on long-term, fixed income debt instruments available as of the measurement date of December 31, 2022. The effect of a one percentage point decrease in the assumed discount rate would result in an increase in the December 31, 2022 defined benefit pension plans obligation of approximately \$17 million. Similarly, a one percentage point decrease in the assumed discount rate would result in an increase in the December 31, 2022 OPEB obligation of approximately \$8 million.

Further information is provided in "Note 15. Employee Benefit Plans" of Notes to Consolidated Financial Statements included in Part II, Item 8., of this Annual Report on Form 10-K, which contains our review on various actuarial assumptions.

Income Taxes

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the expected future tax consequences attributable to temporary differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. The future tax benefits associated with operating loss and tax credit carryforwards are recognized as deferred tax assets. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. When releasing income tax effects from accumulated other comprehensive loss, we utilize the portfolio securities approach.

As of December 31, 2022, our U.S. federal income tax deductions related to our intangible assets were approximately \$200 million in 2022 and are expected to be approximately \$10 million in 2023 and approximately \$10 million in the aggregate through 2034. Excluding our intangible asset deductions, our expected tax payments would have increased by approximately \$40 million for the year ended December 31, 2022.

The need to establish a valuation allowance against the deferred tax assets is assessed at least quarterly based on a more-likely-than-not realization threshold, in accordance with the FASB authoritative accounting guidance on income taxes. Appropriate consideration is given to all positive and negative evidence related to that realization. This assessment considers, among other matters, the nature, frequency and severity of recent losses, forecasts of future profitability, the duration of statutory carryforward periods, and experience with tax attributes expiring unused and tax planning alternatives. The weight given to these considerations depends upon the degree to which they can be objectively verified.

Further information on income taxes is provided in "Note 16. Income Taxes" of Notes to Consolidated Financial Statements included in Part II, Item 8., of this Annual Report on Form 10-K.

Business Combinations

We use the acquisition method to account for business combinations. The assets acquired and liabilities assumed are recorded at their respective estimated fair value at the date of acquisition. Any excess purchase price over the fair values of the acquired net assets is recorded as goodwill. Determining the fair values of assets acquired and liabilities assumed requires management's judgment and includes the use of estimates with respect to timing and amount of future cash flows, market rate assumptions, actuarial assumptions, appropriate discount rates and other relevant factors.

Recently Adopted Accounting Pronouncements

Refer to "Note 2. Summary of Significant Accounting Policies" in Part II, Item 8., of this Annual Report on Form 10-K.

ITEM 7A. Quantitative and Qualitative Disclosures About Market Risk

Our exposure to market risk consists of changes in interest rates, foreign currency rate fluctuations and movements in commodity prices.

Interest Rate Risk

Our principal interest rate exposure relates to outstanding amounts under our Senior Secured Credit Facility. Our Senior Secured Credit Facility provides for variable rate borrowings of up to \$650 million, including \$644 million under our Revolving Credit Facility, net of \$6 million of letters of credit. As of December 31, 2022, we held interest rate swap contracts that, in the aggregate, effectively hedge \$500 million of the variable rate debt associated with the Term Loan at weighted average London Interbank Offered Rate ("LIBOR") fixed rates of 3.04% and 2.82% through September 2025. A one-eighth percent increase or decrease in assumed interest rates for the Senior Secured Credit Facility, if fully drawn as of December 31, 2022, would have an impact of approximately \$1 million on interest expense per year. As of December 31, 2022, we had no outstanding borrowings against the Revolving Credit Facility.

The United Kingdom's Financial Conduct Authority has announced the intent to phase out LIBOR by June 2023. We plan to elect an alternative reference rate acceptable under reference rate reform guidance and do not expect the phase out to materially impact our financial statements, liquidity or access to capital markets.

Refer to "Note 8. Debt" and "Note 9. Derivatives" of Notes to Consolidated Financial Statements included in Part II, Item 8., of this Annual Report on Form 10-K.

Exchange Rate Risk

While our net sales and costs are denominated primarily in U.S. Dollars, net sales, costs, assets and liabilities are generated in other currencies including Brazilian Real, British Pound, Canadian Dollar, Chinese Yuan Renminbi, Euro, Hungarian Forint, Indian Rupee and Japanese Yen. The expansion of our business outside North America may further increase the risk that cash flows resulting from these activities may be adversely affected by changes in currency exchange rates.

Assuming current levels of foreign currency transactions, a 10% aggregate increase or decrease in the Chinese Yuan Renminbi, Euro, Indian Rupee, and Japanese Yen would correspondingly change our earnings, net of tax, by an estimated \$4 million per year. We believe our other direct exposure to foreign currencies is immaterial.

Commodity Price Risk

We are subject to changes in our cost of sales caused by movements in underlying commodity prices. As of December 31, 2022, approximately 66% of our cost of sales consisted of purchased components with significant raw material content. A substantial portion of the purchased parts are made of aluminum and steel. The cost of aluminum parts includes an adjustment factor on future purchases for fluctuations in aluminum prices based on accepted industry indices. In addition, a substantial amount of steel-based contracts also includes an index-based component. As our costs change, we are able to pass through a portion of the changes in commodity prices to certain of our customers according to our LTAs. We historically have not entered into long-term purchase contracts related to the purchase of aluminum and steel.

Assuming current levels of commodity purchases, a 10% variation in the price of aluminum and steel would correspondingly change our earnings by approximately \$9 million and \$12 million per year, respectively.

Many of our LTAs have incorporated a cost-sharing arrangement related to potential future commodity price fluctuations. For purposes of the sensitivity analysis above, the impact of these cost sharing arrangements has not been included.

ITEM 8. Financial Statements and Supplementary Data

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Allison Transmission Holdings, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Allison Transmission Holdings, Inc. and its subsidiaries (the “Company”) as of December 31, 2022 and 2021, and the related consolidated statements of comprehensive income, of stockholders’ equity and of cash flows for each of the three years in the period ended December 31, 2022, including the related notes and financial statement schedule listed in the index appearing under Item 15(a)(2) (collectively referred to as the “consolidated financial statements”). We also have audited the Company’s internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

Basis for Opinions

The Company’s management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management’s Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company’s consolidated financial statements and on the Company’s internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Product Warranty Liabilities

As described in Notes 2 and 10 to the consolidated financial statements, the Company's consolidated product warranty liability balance was \$57 million as of December 31, 2022. Management makes provisions for the estimated product warranty liabilities at the time the products are sold. These estimates are established using historical information including the nature, frequency, and average cost of warranty claims and are adjusted as actual information becomes available.

The principal considerations for our determination that performing procedures relating to the product warranty liabilities is a critical audit matter are (i) the significant judgment by management when determining the product warranty liability estimate; (ii) the high degree of auditor judgment, subjectivity, and effort in performing procedures and evaluating audit evidence relating to the significant assumptions related to the frequency and average cost of warranty claims; and (iii) the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's process for developing the estimate, significant assumptions, and inputs used to estimate product warranty liabilities. These procedures also included, among others, (i) testing the completeness and accuracy of historical warranty claims data used in the estimate and (ii) professionals with specialized skill and knowledge were used to assist in evaluating the reasonableness of the frequency and average cost of warranty claims assumptions.

/s/ PricewaterhouseCoopers LLP
Indianapolis, Indiana
February 16, 2023

We have served as the Company's auditor since 2008.

Allison Transmission Holdings, Inc.
Consolidated Balance Sheets
(dollars in millions, except share data)

	December 31, 2022	December 31, 2021
ASSETS		
Current Assets		
Cash and cash equivalents	\$ 232	\$ 127
Accounts receivable - net of allowance for doubtful accounts of \$5 and \$3, respectively	363	301
Inventories	224	204
Other current assets	47	39
Total Current Assets	866	671
Property, plant and equipment, net	763	706
Intangible assets, net	878	917
Goodwill	2,075	2,064
Marketable securities	22	46
Other non-current assets	67	53
TOTAL ASSETS	\$ 4,671	\$ 4,457
LIABILITIES		
Current Liabilities		
Accounts payable	\$ 195	\$ 179
Product warranty liability	33	33
Current portion of long-term debt	6	6
Deferred revenue	38	37
Other current liabilities	208	204
Total Current Liabilities	480	459
Product warranty liability	24	20
Deferred revenue	93	99
Long-term debt	2,501	2,504
Deferred income taxes	536	514
Other non-current liabilities	163	227
TOTAL LIABILITIES	3,797	3,823
Commitments and Contingencies (see Note 18)		
STOCKHOLDERS' EQUITY		
Common stock, \$0.01 par value, 1,880,000,000 shares authorized, 91,788,885 shares issued and outstanding and 99,262,951 shares issued and outstanding, respectively	1	1
Non-voting common stock, \$0.01 par value, 20,000,000 shares authorized, none issued and outstanding	—	—
Preferred stock, \$0.01 par value, 100,000,000 shares authorized, none issued and outstanding	—	—
Paid in capital	1,848	1,832
Accumulated deficit	(953)	(1,126)
Accumulated other comprehensive loss, net of tax	(22)	(73)
TOTAL STOCKHOLDERS' EQUITY	874	634
TOTAL LIABILITIES & STOCKHOLDERS' EQUITY	\$ 4,671	\$ 4,457

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

Allison Transmission Holdings, Inc.
Consolidated Statements of Comprehensive Income
(dollars in millions, except per share data)

	Years ended December 31,		
	2022	2021	2020
Net sales	\$ 2,769	\$ 2,402	\$ 2,081
Cost of sales	1,472	1,257	1,083
Gross profit	1,297	1,145	998
Selling, general and administrative	328	305	317
Engineering — research and development	185	171	147
Operating income	784	669	534
Interest expense, net	(118)	(116)	(137)
Other (expense) income, net	(21)	19	(4)
Income before income taxes	645	572	393
Income tax expense	(114)	(130)	(94)
Net income	\$ 531	\$ 442	\$ 299
Basic earnings per share attributable to common stockholders	\$ 5.53	\$ 4.13	\$ 2.62
Diluted earnings per share attributable to common stockholders	\$ 5.53	\$ 4.13	\$ 2.62
Other comprehensive income (loss), net of tax:			
Interest rate swaps	39	22	(20)
Pension and OPEB liability adjustment	22	2	(27)
Foreign currency translation	(10)	(8)	10
Total other comprehensive income (loss), net of tax	51	16	(37)
Comprehensive income, net of tax	\$ 582	\$ 458	\$ 262

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

Allison Transmission Holdings, Inc.
Consolidated Statements of Cash Flows
(dollars in millions)

	Years ended December 31,		
	2022	2021	2020
CASH FLOWS FROM OPERATING ACTIVITIES:			
Net income	\$ 531	\$ 442	\$ 299
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation of property, plant and equipment	109	104	96
Amortization of intangible assets	46	46	52
Unrealized loss (gain) on marketable securities	22	(4)	—
Stock-based compensation	18	14	17
Loss on intercompany foreign exchange	6	—	2
Technology-related investments gain	(6)	(3)	—
Amortization of deferred financing costs	4	4	4
Deferred income taxes	(4)	64	69
Expenses related to long-term debt refinancing	—	—	19
Other	2	—	1
Changes in assets and liabilities:			
Accounts receivable	(70)	(78)	28
Inventories	(25)	(26)	21
Accounts payable	15	24	(4)
Other assets and liabilities	9	48	(43)
Net cash provided by operating activities	657	635	561
CASH FLOWS FROM INVESTING ACTIVITIES:			
Additions of long-lived assets	(167)	(175)	(115)
Business acquisitions	(23)	—	4
Proceeds from technology-related investments	6	4	—
Proceeds from sale of assets	2	—	—
Investment in equity method investee	(1)	—	—
Investment in marketable securities	—	(41)	—
Loans to third parties	—	(12)	—
Repayments from loans to third parties	—	12	—
Net cash used for investing activities	(183)	(212)	(111)
CASH FLOWS FROM FINANCING ACTIVITIES:			
Repurchases of common stock	(278)	(513)	(225)
Repayments on revolving credit facility	(95)	—	(800)
Borrowings on revolving credit facility	95	—	800
Dividend payments	(80)	(81)	(78)
Payments on long-term debt	(7)	(7)	(1,019)
Taxes paid related to net share settlement of equity awards	(4)	(3)	(2)
Proceeds from exercise of stock options	2	3	2
Payment of acquisition-related contingent liability	—	(3)	(3)
Issuance of long-term debt	—	—	1,000
Debt financing fees	—	—	(10)
Net cash used for financing activities	(367)	(604)	(335)
Effect of exchange rate changes on cash	(2)	(2)	3
Net increase (decrease) in cash and cash equivalents	105	(183)	118
Cash and cash equivalents at beginning of period	127	310	192
Cash and cash equivalents at end of period	\$ 232	\$ 127	\$ 310
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:			
Cash paid during period for:			
Interest	\$ 117	\$ 103	\$ 136
Income taxes	\$ 102	\$ 60	\$ 26
Non-cash investing activities:			
Capital expenditures in liabilities	\$ 11	\$ 9	\$ 11

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

Allison Transmission Holdings, Inc.
Consolidated Statements of Stockholders' Equity
(dollars in millions)

	Common Stock	Non- voting Common Stock	Preferred Stock	Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss, net of tax	Stockholders' Equity
Balance at December 31, 2019	\$1	\$—	\$—	\$1,802	\$(970)	\$(52)	\$781
Stock-based compensation	—	—	—	17	—	—	17
Pension and OPEB liability adjustment	—	—	—	—	—	(27)	(27)
Foreign currency translation adjustment	—	—	—	—	—	10	10
Interest rate swaps	—	—	—	—	—	(20)	(20)
Issuance of common stock	—	—	—	(1)	—	—	(1)
Repurchase of common stock	—	—	—	—	(225)	—	(225)
Dividends on common stock	—	—	—	—	(78)	—	(78)
Net income	—	—	—	—	299	—	299
Balance at December 31, 2020	\$1	\$—	\$—	\$1,818	\$(974)	\$(89)	\$756
Stock-based compensation	—	—	—	14	—	—	14
Pension and OPEB liability adjustment	—	—	—	—	—	2	2
Foreign currency translation adjustment	—	—	—	—	—	(8)	(8)
Interest rate swaps	—	—	—	—	—	22	22
Repurchase of common stock	—	—	—	—	(513)	—	(513)
Dividends on common stock	—	—	—	—	(81)	—	(81)
Net income	—	—	—	—	442	—	442
Balance at December 31, 2021	\$1	\$—	\$—	\$1,832	\$(1,126)	\$(73)	\$634
Stock-based compensation	—	—	—	18	—	—	18
Pension and OPEB liability adjustment	—	—	—	—	—	22	22
Foreign currency translation adjustment	—	—	—	—	—	(10)	(10)
Interest rate swaps	—	—	—	—	—	39	39
Issuance of common stock	—	—	—	(2)	—	—	(2)
Repurchase of common stock	—	—	—	—	(278)	—	(278)
Dividends on common stock	—	—	—	—	(80)	—	(80)
Net income	—	—	—	—	531	—	531
Balance at December 31, 2022	<u>\$1</u>	<u>\$—</u>	<u>\$—</u>	<u>\$1,848</u>	<u>\$(953)</u>	<u>\$(22)</u>	<u>\$874</u>

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

Allison Transmission Holdings, Inc.
Notes to Consolidated Financial Statements

NOTE 1. OVERVIEW***Overview***

Allison Transmission Holdings, Inc. and its subsidiaries (“Allison” or the “Company”) design and manufacture vehicle propulsion solutions, including commercial-duty on-highway, off-highway and defense fully automatic transmissions and electric hybrid and fully electric systems. The business was founded in 1915 and has been headquartered in Indianapolis, Indiana since inception. Allison trades on the New York Stock Exchange under the symbol “ALSN”.

The Company has approximately 3,500 employees. Although approximately 74% of revenues were generated in North America in 2022, the Company has a global presence by serving customers in Asia, Europe, South America and Africa. The Company serves customers through an independent network of approximately 1,600 independent distributor and dealer locations worldwide.

Global markets continue to experience supply chain, labor, energy and raw material constraints as a result of global economic volatility, the war in Ukraine and the COVID-19 pandemic, that impacted the Company's business in 2022 and continue to impact its business performance. As a result, during 2022 the Company experienced raw material and component part price inflation, increased freight and logistics costs, increased labor costs, production constraints due to labor shortages and increased foreign exchange volatility. In addition, the Company's net sales for 2022 were negatively impacted as a result of its customers' inability to secure components from the broader commercial vehicle supply base which resulted in reduced commercial vehicle build schedules and the inability of the commercial vehicle market to produce sufficient quantities to meet demand. The Company expects that commercial vehicle build schedules will continue to be negatively impacted by the availability of components in 2023.

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES***Basis of Presentation and Principles of Consolidation***

The consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (“GAAP”). The information herein reflects all normal recurring material adjustments, which are, in the opinion of management, necessary for a fair statement of the results for the periods presented. The consolidated financial statements herein consist of all wholly-owned domestic and foreign subsidiaries with all significant intercompany transactions eliminated.

These consolidated financial statements present the financial position, results of comprehensive income, cash flows and statements of stockholders' equity. Certain immaterial reclassifications have been made in the consolidated financial statements of prior periods to conform to the current period presentation. These reclassifications had no material impact on previously reported net income, total stockholders' equity or cash flows.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities and the reported amounts of revenue and expenses. Estimates include, but are not limited to, sales allowances, government price adjustments, fair market values and future cash flows associated with goodwill, indefinite-lived intangibles, definite-lived intangibles, long-lived asset impairment tests, useful lives for depreciation and amortization, warranty liabilities, core deposit liabilities, environmental liabilities, determination of discount rate and other assumptions for pension and other post-retirement benefit (“OPEB”) expense, determination of discount rate and period for leases, income taxes and deferred tax valuation allowances, derivative valuation, assumptions for business combinations and contingencies. The Company’s accounting policies involve the application of judgments and assumptions made by management that include inherent risks and uncertainties. Due to the uncertainty surrounding global economic conditions, including as a result of government actions to control inflation, the war in Ukraine and the ongoing COVID-19 pandemic, and the resulting impacts on the Company’s supply chain, demand for its products, foreign exchange rates, interest rates and the cost and availability of raw materials, labor, energy and transport, actual results could differ materially from these estimates and assumptions used in preparation of the financial statements including, but not limited to, future cash flows associated with goodwill, indefinite-lived intangibles, definite-lived intangibles, long-lived asset impairment tests, determination of discount rate and other assumptions for pension and OPEB expense and income taxes. Changes in estimates are recorded in results of operations in the period that the events or circumstances giving rise to such changes occur.

Segment Reporting

In accordance with the Financial Accounting Standards Board’s (“FASB”) authoritative accounting guidance on segment reporting, the Company has one operating segment and reportable segment. The Company is in one line of business, which is the manufacture and distribution of vehicle propulsion solutions.

Business Combinations

The Company uses the acquisition method to account for business combinations. The assets acquired and liabilities assumed are recorded at their respective estimated fair value at the date of acquisition. Any excess purchase price over the fair values of the acquired net assets is recorded as goodwill. Determining the fair values of assets acquired and liabilities assumed requires management’s judgment and includes the use of estimates with respect to timing and amount of future cash flows, market rate assumptions, actuarial assumptions, appropriate discount rates and other relevant factors.

Cash and Cash Equivalents

Cash equivalents are defined as short-term, highly-liquid investments with original maturities of 90 days or less. Under the Company’s cash management system, checks issued but not presented to banks may result in book overdraft balances for accounting purposes and are classified within Accounts payable in the Consolidated Balance Sheets. The change in book overdrafts is reported as a component of operating cash flows for Accounts payable.

Investments

Investments in equity securities with a readily determinable fair value, not accounted for under the equity method, are recorded at that value with unrealized gains and losses included in earnings. For equity securities without a readily determinable fair value, the investment is recorded at cost, less any impairment, plus or minus adjustments related to observable transactions for the same or similar securities, with unrealized gains and losses included in earnings. The Company's investments in equity securities had a readily determinable fair value and were recorded at fair value with unrealized gains and losses included in Other (expense) income, net. See "Note 7. Fair Value of Financial Instruments" for more details.

Inventories

Inventories are stated at the lower of cost or net realizable value. The Company determines cost using the first-in, first-out method. The Company analyzes inventory on a quarterly basis to determine whether it is excess or obsolete inventory. Any decline in carrying value of estimated excess or obsolete inventory is recorded as a reduction of inventory and as an expense included in Cost of sales in the period it is identified.

Property, Plant and Equipment

Property, plant and equipment are recorded at cost less accumulated depreciation. Depreciation expense is recorded using the straight-line method over the following estimated lives:

	Range in Years
Land improvements	5 – 30
Buildings and building improvements	10 – 40
Machinery and equipment	2 – 20
Software	2 – 5
Special tooling	2 – 10

Software represents the costs of software developed or obtained for internal use. Software costs are amortized on a straight-line basis over their estimated useful lives. Software assets are reviewed for impairment when events or circumstances indicate that the carrying value may not be recoverable over the remaining lives of the assets. Upgrades and enhancements are capitalized if they result in added functionality, which enables the software to perform tasks it was previously incapable of performing. Software maintenance, training, data conversion and business process reengineering costs are expensed in the period in which they are incurred.

Special tooling represents the costs to design and develop tools, dies, jigs and other items owned by the Company and used in the manufacture of components by suppliers under long-term supply agreements. Special tooling is depreciated over the tool's expected life. Special tooling used in the development of new technology is expensed as incurred. Engineering, testing and other costs incurred in the design and development of production parts are expensed as incurred.

Impairment of Long-Lived Assets

The carrying value of long-lived assets is evaluated whenever events or circumstances indicate that the carrying value of an asset may not be recoverable. Events or circumstances that would result in an impairment review primarily include a significant change in the use of an asset or the planned sale or disposal of an asset. The asset would be considered impaired when there is no future use planned for the asset or the future net undiscounted cash flows generated by the asset or asset group are less than its carrying value. An impairment loss would be recognized based on the amount by which the carrying value exceeds fair value.

Assumptions and estimates used to determine cash flows in the evaluation of impairment and the fair values used to determine the impairment are subject to a degree of judgment and complexity. Any changes to the assumptions and estimates resulting from changes in actual results or market conditions from those anticipated may affect the carrying value of long-lived assets and could result in an impairment charge.

Goodwill and Other Intangible Assets

The Company has elected to perform its annual impairment tests for goodwill and indefinite-lived intangible assets on October 31 of every year using a multi-step impairment test. In Step 0, the Company has the option to evaluate various qualitative factors to determine the likelihood of impairment. If the Company determines that the fair value is more likely than not less than the carrying value, then it is required to perform Step 1. If the Company does not elect to perform Step 0, it can voluntarily proceed directly to Step 1. In Step 1, the Company performs a quantitative analysis to compare the fair value to its carrying value. If the fair value exceeds the carrying value, no impairment is recorded, and the Company is not required to perform further testing. If the carrying value exceeds fair value, the Company would record an impairment loss equal to the difference.

A qualitative assessment contains uncertainties because it requires management to make assumptions and to apply judgment to assess business changes, economic outlook, financial trends and forecasts, growth rates, credit ratings, equity ratings, discount rates, industry data and other relevant qualitative factors.

A quantitative analysis contains uncertainties because it is performed utilizing a discounted cash flow model which includes key assumptions, such as financial forecasts; net sales growth derived from market information, industry reports, marketing programs and future new product introductions; operating margin improvements derived from cost reduction programs and fixed cost leverage driven by higher sales volumes; and a risk-adjusted discount rate.

Goodwill represents the excess of purchase price paid over the fair value of net assets acquired. In accordance with the FASB's authoritative accounting guidance on goodwill, the Company does not amortize goodwill but rather evaluates it for impairment on an annual basis, or more often if events or circumstances change that could cause goodwill to become impaired. Goodwill is tested for impairment at the reporting unit level, which is the same as the Company's one operating and reportable segment. The Company does not aggregate any components into its reporting unit.

Goodwill impairment testing for 2022 was performed using the Step 0 analysis by assessing certain qualitative trends and factors. These trends and factors were compared to, and based on, the assumptions used in prior years. After reviewing the various qualitative factors mentioned above, the Company's 2022 annual goodwill impairment test indicated that the fair value for the reporting unit more likely than not exceeded its carrying value, indicating no impairment.

Other intangible assets have both indefinite and finite useful lives. Intangible assets with indefinite useful lives are not amortized but are tested annually for impairment, or more often if events or circumstances change that could cause intangible assets with indefinite useful lives to become impaired. After reviewing the various qualitative factors mentioned above, the Company's annual 2022 indefinite-lived intangible assets impairment tests, as of October 31, 2022, indicated that the fair value of its indefinite-lived intangible assets more likely than not exceeded their respective carrying value, indicating no impairment.

Intangible assets with finite lives are amortized over their estimated useful lives and reviewed for impairment when circumstances change that would create a triggering event. Customer relationships are amortized over the life in which expected benefits are to be consumed. The other remaining finite life intangibles are amortized on a straight-line basis over their useful lives. The Company evaluates the remaining useful life of the other intangible assets on a periodic basis to determine whether events or circumstances warrant a revision to the remaining useful life. Assumptions and estimates about future values and remaining useful lives of the Company's intangible and other long-lived assets are complex and subjective. Such assumptions and estimates can be affected by a variety of factors, including external factors such as industry and economic trends, and internal factors, such as changes in the Company's business strategy and internal forecasts. Although management believes the historical assumptions and estimates are reasonable and appropriate, different assumptions and estimates could materially impact the Company's reported financial results. Further information is provided in "Note 6. Goodwill and Other Intangible Assets."

Deferred Financing Costs

The debt issuance costs related to line-of-credit arrangements is presented as a component of other non-current assets. The debt issuance costs related to other types of debt instruments such as notes and loans are presented as a component of long-term debt. Deferred financing costs continue to be amortized over the life of the related debt using the effective interest method. Amortization of deferred financing costs is recorded as part of interest expense and totaled \$4 million for each of the years ended December 31, 2022, 2021 and 2020.

Financial Instruments

The Company's cash equivalents are invested in U.S. government backed securities and recorded at fair value in the Consolidated Balance Sheets. The Company's marketable securities are carried at fair value on the Consolidated Balance Sheets. The Company's financial derivative instruments, including interest rate swaps, are carried at fair value on the Consolidated Balance Sheets. Refer to "Note 7. Fair Value of Financial Instruments" for more detail. The Company's long-term debt obligations are carried at historical amounts with the Company providing fair value disclosure in "Note 8. Debt". The carrying values of accounts receivable and accounts payable approximate fair value due to their short-term nature.

Insurable Liabilities

The Company records liabilities for its medical, workers' compensation, long-term disability, product, general and auto liabilities. The determination of these liabilities and related expenses is dependent on claims experience. For most of these liabilities, claims incurred but not yet reported are estimated based upon historical claims experience.

Revenue Recognition

The Company records sales as each distinct performance obligation within a contract is satisfied. The Company sells extended transmission coverage ("ETC") for which sales are deferred. ETC sales are recognized ratably over the period of coverage, which typically ranges from one to five years after the standard warranty coverage ends. Costs associated with ETC programs are recorded as incurred during the extended period. Distributor and customer sales incentives, consisting of allowances and other rebates, are recorded as a reduction to Net sales when it is determined that the adjustment is not likely to reverse, historically on a quarterly basis. Incentive programs are generally product specific or region specific. Some factors used in estimating when an adjustment is not likely to reverse are the number of transmissions that will be affected by the incentive program and rate of acceptance of any incentive program.

Sales under U.S. government production contracts are recognized at the point in time when control passes to the customer, or when the U.S. government accepts the transmission and is able to direct its use in certain bill-and-hold arrangements. Deferred revenue arises from cash received in advance of the culmination of the earnings process and is recognized as revenue in future periods when the applicable revenue recognition criteria have been met. Under the terms of previous U.S. government contracts, there were certain price reduction clauses and provisions for potential price reductions which were estimated at the time of sale based upon the Company's history and experience and were recorded as a reduction to Net sales. Potential reductions may be attributed to a change in projected sales volumes or plant efficiencies which impact overall costs. The Company had \$54 million and \$56 million recorded in the price reduction reserve account as of December 31, 2022 and 2021, respectively.

The Company engages in licensing agreements with certain third parties for the use of the Company's intellectual property. Deferred revenue arises from cash received in advance of the period of use of the intellectual property. Revenue is recognized over the license period as it is earned.

The Company classifies shipping and handling billed to customers in Net sales and shipping and handling costs in Cost of sales.

The Company contracts with various third parties to provide engineering services. These services are recorded as Net sales in accordance with the terms of the contract. The saleable engineering recorded was \$21 million, \$21 million and \$16 million for the years ended December 31, 2022, 2021 and 2020, respectively. The associated costs are recorded in Cost of sales.

Warranty

Provisions for estimated expenses related to product warranties are made at the time products are sold. Warranty claims arise when a transmission or propulsion solution manufactured by us fails while in service during the relevant warranty period. The warranty reserve is adjusted in Selling, general and administrative expense based on the Company's current and historical warranty claims paid and associated repair costs. These estimates are established using historical information including the nature, frequency, and average cost of warranty claims and are adjusted as actual information becomes available. From time to time, the Company may initiate a specific field action program. As a result of the uncertainty surrounding the nature and frequency of specific field action programs, the liability for such programs is recorded when the Company commits to an action. The Company reviews and assesses the liability for these programs on a quarterly basis. The Company also assesses its ability to recover certain costs from its suppliers and records a receivable from the supplier when it believes a recovery is probable. Warranty costs may differ from those estimated if actual claim rates are higher or lower than the Company's historical rates.

Research and Development

The Company incurs costs in connection with research and development programs that are expected to contribute to future earnings. Such costs are charged to Engineering — research and development as incurred.

Environmental

The Company accrues costs related to environmental matters when it is probable that the Company has incurred a liability related to a contaminated site and the costs can be reasonably estimated. For additional information, see "Note 18. Commitments and Contingencies".

Foreign Currency Translation

Most of the Company's subsidiaries outside the United States prepare financial statements in currencies other than the U.S. Dollar. The functional currency for all of these subsidiaries is the local currency, except for the Company's Hong Kong and Middle East subsidiaries which currently use the U.S. Dollar as their functional currency. Balances are translated at period-end exchange rates for assets and liabilities and monthly weighted-average exchange rates for revenues and expenses. The translation gains and losses are stated as a component of Accumulated Other Comprehensive Loss ("AOCL") as disclosed in "Note 17. Accumulated Other Comprehensive Loss".

Derivative Instruments

In the normal course of business, the Company is exposed to fluctuations in interest rates, foreign currency exchange rates, and commodity prices. The risk is managed through the use of financial derivative instruments, when appropriate. The Company has qualified for and elected hedge accounting treatment on interest rate swap contracts. As necessary, the Company adjusts the values of the derivative instruments for counter-party or credit risk. "Note 9. Derivatives" provides further information on the accounting treatment of the Company's derivative instruments.

Income Taxes

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the expected future tax consequences attributable to temporary differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. The future tax benefits associated with operating loss and tax credit carryforwards are recognized as deferred tax assets. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. When releasing income tax effects from AOCL, the Company utilizes the portfolio securities approach.

The need to establish a valuation allowance against the deferred tax assets is assessed periodically based on a more-likely-than-not realization threshold, in accordance with the FASB's authoritative accounting guidance on income taxes. Appropriate consideration is given to all positive and negative evidence related to that realization. This assessment considers, among other matters, the nature, frequency and severity of recent losses, forecasts of future profitability, the duration of statutory carryforward periods, and experience with tax attributes expiring unused and tax planning alternatives. The weight given to these considerations depends upon the degree to which they can be objectively verified.

The Company records uncertain tax positions on the basis of a two-step process whereby (1) it is determined whether it is more likely than not that the tax position will be sustained based on the technical merits of the position and (2) for those tax positions that meet the more-likely-than-not recognition threshold, the Company recognizes the largest amount of tax benefit that is greater than 50% likely to be realized upon ultimate settlement with the related tax authority.

Stock-Based Compensation

In March 2015, the Company's Board of Directors adopted, and in May 2015, the Company's stockholders approved, the Allison Transmission Holdings, Inc. 2015 Equity Incentive Award Plan ("2015 Plan"), which became effective on May 14, 2015. Under the 2015 Plan, certain employees (including executive officers), consultants and directors are eligible to receive equity-based compensation, including non-qualified stock options, incentive stock options, restricted stock, dividend equivalents, stock payments, restricted stock units ("RSUs"), performance awards, stock appreciation rights and other equity-based awards, or any combination thereof. The 2015 Plan limits the aggregate number of shares of common stock available for issue to 15 million and will expire on, and no option or other equity award may be granted pursuant to the 2015 Plan after, the tenth anniversary of the date the 2015 Plan was approved by the Board of Directors.

Prior to the adoption of the 2015 Plan, the Company's equity-based awards were granted under the Allison Transmission Holdings, Inc. 2011 Equity Incentive Award Plan ("Prior Plan"). As of the effective date of the 2015 Plan, no new awards will be granted under the Prior Plan, but the Prior Plan will continue to govern the equity awards issued under the Prior Plan.

RSU grants are recorded at fair market value at the date of grant and vest upon continued performance of services by the RSU holders over one to three years. Performance unit grants are recorded at fair value based on a Monte-Carlo pricing model, and the restrictions lapse on the date the Compensation Committee of the Board of Directors determines the number of shares that shall vest based on the related performance or market condition achievement. Non-qualified stock option grants are recorded at fair value using a Black-Scholes option pricing model and vest upon the continued performance of services by the option holder on the third anniversary of the grant date for awards under the 2015 Plan.

The Company has made a policy election under applicable accounting guidance to account for forfeitures as a reduction of stock-based compensation expense when the forfeiture actually occurs.

RSUs were granted to certain employees and directors at fair market value on the date of grant. The restrictions lapse upon continued performance by the RSU holder on the vest date which generally occurs over one, two or three years. RSU incentive compensation expense recorded was \$9 million, \$6 million and \$6 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Performance-based awards, including performance units, were granted to certain employees at fair value at the date of grant. The Company records the fair value of each performance-based award based on a Monte-Carlo pricing model. Performance-based award incentive compensation expense recorded was \$5 million, \$5 million and \$9 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Stock options were granted to certain employees at fair value on the date of grant using a Black-Scholes option pricing model. Stock option incentive compensation expense recorded was \$4 million, \$3 million and \$2 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Pension and Post-retirement Benefit Plans

For pension and OPEB plans in which employees participate, costs are determined within the FASB's authoritative accounting guidance set forth in employers' defined benefit pensions including accounting for settlements and curtailments of defined benefit pension plans, termination of benefits and accounting for post-retirement benefits other than pensions. In accordance with the authoritative accounting guidance, the Company recognizes the funded status of its defined benefit pension plans and OPEB plan in its Consolidated Balance Sheets with a corresponding adjustment to AOCL, net of tax.

Post-retirement benefit costs consist of service cost and interest cost on accrued obligations. Actuarial gains and losses on liabilities, together with any prior service costs, are charged (or credited) to income over the average remaining service lives of employees.

The benefit cost components shown in the Consolidated Statements of Comprehensive Income are based upon various actuarial assumptions and methodologies as prescribed by authoritative accounting guidance. These assumptions include discount rates, expected return on plan assets, health care cost trend rates, inflation, rate of compensation increases, population demographics, mortality rates and other factors. The Company reviews all actuarial assumptions on an annual basis. Changes in key economic indicators can change these assumptions. These assumptions, along with the actual value of assets at the measurement date, will impact the calculation of pension expenses for the following year.

Recently Adopted Accounting Pronouncements

In December 2022, the FASB issued authoritative accounting guidance to amend the previously issued guidance regarding highly effective cash flow hedges affected by reference rate reform that was adopted by the Company in 2021. The amendments in the update deferred the sunset date of the relief provided in reference rate reform from December 31, 2022 to December 31, 2024. The Company plans to transition all reference rates prior to December 31, 2024, and the update had no effect on the Company's consolidated financial statements.

In October 2021, the FASB issued authoritative accounting guidance that requires contract assets and contract liabilities acquired in a business combination to be recognized as if the acquirer originated the contracts. The Company adopted this guidance effective January 1, 2023, and it will be applied prospectively to acquisitions occurring on or after the effective date.

Recently Issued Accounting Pronouncements

In June 2022, the FASB issued authoritative accounting guidance that requires investments in equity securities which are measured at fair value and are subject to contractual sale restrictions to not reflect the contractual sale restriction in its fair value measurement. The guidance will be effective for the Company in fiscal year 2024, and the Company does not plan to early adopt. Management does not expect the adoption of this guidance to have an impact on the Company's consolidated financial statements.

NOTE 3. REVENUE

Revenue is recognized as each distinct performance obligation within a contract is satisfied. A performance obligation is a promise in a contract to transfer a distinct good or service to the customer. The Company enters into long-term agreements ("LTAs") and distributor agreements with certain customers. The LTAs and distributor agreements do not include committed volumes until underlying purchase orders are issued; therefore, the Company determined that purchase orders are the contract with a customer. A contract's transaction price is allocated to each distinct performance obligation and recognized as revenue when the performance obligation is satisfied, as there is no right of return.

Some of the Company's contracts include multiple performance obligations, most commonly the sale of both a transmission and ETC. The Company allocates the contract's transaction price to each performance obligation based on the standalone selling price of each distinct good or service in the contract.

The Company may also use volume-based discounts and rebates as marketing incentives in the sales of both vehicle propulsion solutions and service parts, which are accounted for as variable consideration. The Company records the impact of the incentives as a reduction to revenue when it is determined that the adjustment is not likely to reverse, historically on a quarterly basis. The Company estimates the impact of all other incentives based on the related sales and market conditions in the end market vocation. The Company recorded no material adjustments based on variable consideration during either of the years ended December 31, 2022, 2021 or 2020.

Net sales are made on credit terms, generally 30 days, based on an assessment of the customer's creditworthiness. For certain goods or services, the Company receives consideration prior to satisfying the related performance obligation. Such consideration is recorded as a contract liability in current and non-current deferred revenue as of December 31, 2022 and December 31, 2021. See "Note 11. Deferred Revenue" for more information including the amount of revenue earned during the year ended December 31, 2022 that had been previously deferred. The Company had no material contract assets as of either December 31, 2022 or 2021.

The Company has one operating segment and reportable segment. The Company is in one line of business, which is the manufacture and distribution of vehicle propulsion solutions. The following presents disaggregated revenue by categories that best depict how the nature, amount, timing and uncertainty of revenue and cash flows are affected by economic factors (dollars in millions):

	Year ended December 31, 2022	Year ended December 31, 2021	Year ended December 31, 2020
North America On-Highway	\$ 1,359	\$ 1,177	\$ 1,081
North America Off-Highway	86	58	13
Defense	146	186	182
Outside North America On-Highway	463	381	280
Outside North America Off-Highway	127	83	61
Service Parts, Support Equipment and Other	588	517	464
Total Net Sales	\$ 2,769	\$ 2,402	\$ 2,081

Disaggregated revenue by end market is further described as follows:

North America On-Highway

Revenue from the North America On-Highway end market is driven by the sale of propulsion solutions to original equipment manufacturers ("OEMs"), distributors and dealers that install the product into Class 4-5, Class 6-7 and Class 8 straight trucks, Class 8 day cab tractors, conventional transit, shuttle and coach buses, school buses and motorhome applications. Revenue is recognized at the point in time when control passes to the customer, which is based on shipping terms when the order is fulfilled by the Company.

North America Off-Highway

Revenue from the North America Off-Highway end market is driven by sales of transmissions to OEMs and distributors that serve end users who operate vehicles and auxiliary equipment in energy, mining and construction applications. Revenue is recognized at the point in time when control passes to the customer, which is based on shipping terms when the order is fulfilled by the Company.

Defense

Revenue from the Defense end market is driven by sales of propulsion solutions to the U.S. Government or its contractors and sales to certain government contractors outside of the U.S. for use in both wheeled and tracked defense vehicle applications. Revenue is recognized at the point in time when control passes to the customer, which is based on shipping terms when the order is fulfilled by the Company.

Periodically, the Company and the U.S. Government will enter into a bill-and-hold arrangement where a completed transmission physically remains at the Company's facility at the request of the U.S. Government. Revenue is recognized at the point in time when it is determined that the U.S. Government accepts the transmission and is able to direct its use.

Outside North America On-Highway

Revenue from the Outside North America On-Highway end market is driven by the sale of propulsion solutions to OEMs and distributors that produce vehicles for commercial users in medium- and heavy-duty applications. Revenue is recognized at the point in time when control passes to the customer, which is based on shipping terms when the order is fulfilled by the Company.

Outside North America Off-Highway

Revenue from the Outside North America Off-Highway end market is driven by sales of transmissions to OEMs and distributors serving end users who operate vehicles and auxiliary equipment in energy, mining and construction applications. Revenue is recognized at the point in time when control passes to the customer, which is based on shipping terms when the order is fulfilled by the Company.

Service Parts, Support Equipment and Other

Revenue from the Service Parts, Support Equipment and Other end market is primarily derived from the sale of transmission parts and fluid purchased for the normal maintenance and repair needs of products in service, the sale of aluminum die cast components purchased as original parts and the sale of ETC contracts which extend the warranty coverages of propulsion solutions beyond the standard warranty period.

Revenue is recognized on sales of service parts, support equipment and aluminum die cast components at the point in time when control passes to the customer, which is based on shipping terms when the order is fulfilled by the Company.

Revenue from the sale of ETC contracts is recognized ratably over the time period that corresponds with the period of coverage, as the Company has determined this method best depicts the progress towards satisfaction of its performance obligation. ETC contracts are typically sold in one- to five-year durations within the North America On-Highway, Outside North America On-Highway, North America Off-Highway and Outside North America Off-Highway end markets. The ETC contract period begins when the standard warranty coverage period ends. All consideration allocated to an ETC performance obligation is initially deferred until the coverage period begins.

NOTE 4. INVENTORIES

Inventories consisted of the following components (dollars in millions):

	December 31, 2022	December 31, 2021
Purchased parts and raw materials	\$ 115	\$ 101
Work in progress	7	8
Service parts	53	44
Finished goods	49	51
Total inventories	<u>\$ 224</u>	<u>\$ 204</u>

Inventory components shipped to third parties, primarily cores, parts to re-manufacturers, and parts to contract manufacturers, which the Company has an obligation to buy back, are included in purchased parts and raw materials, with an offsetting liability in Other current liabilities. See "Note 14. Other Current Liabilities" for more information.

NOTE 5. PROPERTY, PLANT AND EQUIPMENT

The cost and accumulated depreciation of property, plant and equipment are as follows (dollars in millions):

	December 31, 2022	December 31, 2021
Machinery and equipment	\$ 845	\$ 795
Buildings and building improvements	517	492
Special tooling	268	243
Software	186	188
Construction in progress	107	83
Land and land improvements	27	27
Total property, plant and equipment	<u>1,950</u>	<u>1,828</u>
Accumulated depreciation	<u>(1,187)</u>	<u>(1,122)</u>
Property, plant and equipment, net	<u>\$ 763</u>	<u>\$ 706</u>

Depreciation of property, plant and equipment was \$109 million, \$104 million and \$96 million for the years ended December 31, 2022, 2021 and 2020, respectively.

NOTE 6. GOODWILL AND OTHER INTANGIBLE ASSETS

As of December 31, 2022 and 2021, the carrying amount of the Company's Goodwill was \$2,075 million and \$2,064 million, respectively.

The following presents a summary of other intangible assets (dollars in millions):

	December 31, 2022			December 31, 2021		
	Intangible assets, gross	Accumulated amortization	Intangible assets, net	Intangible assets, gross	Accumulated amortization	Intangible assets, net
Other intangible assets:						
Trade name	\$ 791	\$ —	\$ 791	\$ 791	\$ —	\$ 791
In process research and development	25	—	25	25	—	25
Customer relationships – commercial	839	(793)	46	839	(751)	88
Proprietary technology	484	(477)	7	478	(477)	1
Customer relationships – defense	62	(53)	9	62	(50)	12
Non-compete agreement	1	(1)	—	—	—	—
Total	\$ 2,202	\$ (1,324)	\$ 878	\$ 2,195	\$ (1,278)	\$ 917

Amortization of intangible assets was \$46 million, \$46 million and \$52 million for the years ended December 31, 2022, 2021 and 2020, respectively.

As of December 31, 2022 and 2021, the net carrying value of the Company's Goodwill and Other intangible assets, net was \$2,953 million and \$2,981 million, respectively. The Company's 2022 annual goodwill impairment test indicated that the fair value of the reporting unit more likely than not exceeded its carrying value, indicating no impairment. The Company's 2022 annual indefinite-lived intangible assets impairment test indicated that the fair value of the Company's indefinite-lived intangible assets more likely than not exceeded their carrying value, indicating no impairment.

Amortization expense related to other intangible assets for the next five years is expected to be (dollars in millions):

	2023	2024	2025	2026	2027
Amortization expense	\$ 45	\$ 9	\$ 5	\$ 2	\$ 1

The following presents a summary of the changes in the goodwill of the Company's single operating and reporting segment (dollars in millions):

	Allison Transmission, Inc.
Balance at December 31, 2021	\$ 2,064
Acquisition	13
Foreign currency translation	(2)
Net current period impact to goodwill	\$ 11
Balance at December 31, 2022	\$ 2,075

NOTE 7. FAIR VALUE OF FINANCIAL INSTRUMENTS

Fair value is the price (exit price) that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The Company utilizes market data or assumptions that market participants would use in pricing the asset or liability, including assumptions about risk and the risks inherent in the inputs to the valuation technique. These inputs can be readily observable, market corroborated, or generally unobservable. The accounting guidance establishes a fair value hierarchy that prioritizes the inputs used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurement) and the lowest priority to unobservable inputs (Level 3 measurement). The three levels of the fair value hierarchy defined by the relevant guidance are as follows:

Level 1 — Quoted prices are available in active markets for identical assets or liabilities as of the reporting date.

Level 2 — Inputs are other than quoted prices in active markets included in Level 1, which are either directly or indirectly observable as of the reporting date. Level 2 includes financial instruments that are valued using quoted prices in markets that are not active and those financial instruments that are valued using models or other valuation methodologies in which all significant value-drivers are observable in active markets or are supported by observable levels at which transactions are executed in the marketplace.

Level 3 — Certain inputs are unobservable or have little or no market data available. These inputs may be used with internally developed methodologies that result in management's best estimate of fair value. At each balance sheet date, the Company performs an analysis of all instruments subject to authoritative accounting guidance and includes, in Level 3, all of those whose fair value is based on significant unobservable inputs. As of December 31, 2022 and 2021, the Company did not have any Level 3 financial assets or liabilities.

The Company's assets and liabilities that are measured at fair value include cash equivalents, marketable securities, derivative instruments, assets held in a rabbi trust and a deferred compensation obligation. The Company's cash equivalents consist of short-term U.S. government backed securities. The Company's marketable securities consist of publicly traded stock of Jing-Jin Electric Technologies Co. Ltd., which has a readily determinable fair value. The Company's derivative instruments consist of interest rate swaps. The Company's assets held in the rabbi trust consist principally of publicly available mutual funds and target date retirement funds. The Company's deferred compensation obligation is directly related to the fair value of assets held in the rabbi trust.

The Company's valuation techniques used to calculate the fair value of cash equivalents, marketable securities, assets held in the rabbi trust and the deferred compensation obligation represent a market approach in active markets for identical assets that qualify as Level 1 in the fair value hierarchy.

The Company's valuation techniques used to calculate the fair value of derivative instruments represent a market approach with observable inputs that qualify as Level 2 in the fair value hierarchy. The Company uses valuations from the issuing financial institutions for the fair value measurement of interest rate swaps. The floating-to-fixed interest rate swaps are based on the London Interbank Offered Rate ("LIBOR"), which is observable at commonly quoted intervals. The fair values are included in other current and non-current assets and liabilities in the Consolidated Balance Sheets. See "Note 9. Derivatives" for more information regarding the Company's interest rate swaps.

The following table summarizes the fair value of the Company's financial assets and (liabilities) as of December 31, 2022 and 2021 (dollars in millions):

	Fair Value Measurements Using					
	Quoted Prices in Active Markets for Identical Assets (Level 1)		Significant Other Observable Inputs (Level 2)		TOTAL	
	2022	2021	2022	2021	2022	2021
Cash equivalents	\$ 111	\$ —	\$ —	\$ —	\$ 111	\$ —
Marketable securities	22	46	—	—	22	46
Derivative assets (liabilities), net	—	—	18	(31)	18	(31)
Rabbi trust assets	15	19	—	—	15	19
Deferred compensation obligation	(15)	(19)	—	—	(15)	(19)
Total	\$ 133	\$ 46	\$ 18	\$ (31)	\$ 151	\$ 15

NOTE 8. DEBT

Long-term debt and maturities are as follows (dollars in millions):

	December 31, 2022	December 31, 2021
Long-term debt:		
Senior Secured Credit Facility Term Loan, variable, due 2026	\$ 625	\$ 631
Senior Notes, fixed 4.75%, due 2027	400	400
Senior Notes, fixed 5.875%, due 2029	500	500
Senior Notes, fixed 3.75%, due 2031	1,000	1,000
Total long-term debt	\$ 2,525	\$ 2,531
Less: current maturities of long-term debt	6	6
deferred financing costs, net (see Note 2)	18	21
Total long-term debt, net	\$ 2,501	\$ 2,504

Principal payments required on long-term debt during the next five years are as follows (dollars in millions):

	2023	2024	2025	2026	2027
Payments	\$ 6	\$ 6	\$ 6	\$ 607	\$ 400

As of December 31, 2022, the Company had \$2,525 million of indebtedness associated with Allison Transmission, Inc.'s ("ATI"), the Company's wholly-owned subsidiary, 4.75% Senior Notes due October 2027 ("4.75% Senior Notes"), ATI's 5.875% Senior Notes due June 2029 ("5.875% Senior Notes"), ATI's 3.75% Senior Notes due January 2031 ("3.75% Senior Notes" and, together with the 4.75% Senior Notes and 5.875% Senior Notes, the "Senior Notes") and the Second Amended and Restated Credit Agreement dated as of March 29, 2019, as amended (the "Credit Agreement"), governing ATI's term loan facility in the amount of \$625 million due March 2026 ("Term Loan") and ATI's revolving credit facility with commitments in the amount of \$650 million due September 2025 ("Revolving Credit Facility" and, together with the Term Loan, the "Senior Secured Credit Facility").

The fair value of the Company's long-term debt obligations as of December 31, 2022 was \$2,286 million. The fair value is based on quoted Level 2 market prices of the Company's debt as of December 31, 2022. The difference between the fair value and carrying value of the long-term debt is driven primarily by trends in the financial markets.

Senior Secured Credit Facility

The borrowings under the Senior Secured Credit Facility are collateralized by a lien on substantially all assets of the Company, ATI and certain existing and future U.S. subsidiary guarantors, as provided in the Credit Agreement. Interest on the Term Loan, as of December 31, 2022, is either (a) 1.75% over a LIBOR rate on deposits in U.S. dollars for one-, two-, three- or six-month periods (or twelve-month or shorter periods if, at the time of the borrowing, available from all relevant lenders) (the "LIBOR Rate"), or (b) 0.75% over the greater of the prime lending rate as quoted by the administrative agent, the LIBOR Rate for an interest period of one month plus 1.00% and the federal funds effective rate published by the Federal Reserve Bank of New York plus 0.50%, subject to a 1.00% floor (the "Base Rate"). As of December 31, 2022, the Company elected to pay the lowest all-in rate of LIBOR plus the applicable margin, or 6.14%, on the Term Loan. The Credit Agreement requires minimum quarterly principal payments on the Term Loan, as well as prepayments from certain net cash proceeds of non-ordinary course asset sales and casualty and condemnation events, the incurrence of certain debt and from a percentage of excess cash flow, if applicable. The minimum required quarterly principal payment on the Term Loan through its maturity date of March 2026 is \$2 million. As of December 31, 2022, there had been no payments required for certain net cash proceeds of non-ordinary course asset sales and casualty and condemnation events. The remaining principal balance is due upon maturity.

The Senior Secured Credit Facility also provides a Revolving Credit Facility, net of an allowance for up to \$75 million in outstanding letters of credit commitments. Throughout the year ended December 31, 2022, the Company made periodic withdrawals and payments on the Revolving Credit Facility as part of the Company's cash management plans. The maximum amount outstanding at any time during the year ended December 31, 2022 was \$75 million. As of December 31, 2022, the Company had \$644 million available under the Revolving Credit Facility, net of \$6 million in letters of credit. Borrowings under the Revolving Credit Facility bear interest at a variable base rate plus an applicable margin based on the Company's first lien net leverage ratio. When the Company's first lien net leverage ratio is above 4.00x, interest on the Revolving Credit Facility is (a) 0.75% over the Base Rate or (b) 1.75% over the LIBOR Rate; when the Company's first lien net leverage ratio is equal to or less than 4.00x and above 3.50x, interest on the Revolving Credit Facility is (i) 0.50% over the Base Rate or (ii) 1.50% over the LIBOR Rate; and when the Company's first lien net leverage ratio is equal to or below 3.50x, interest on the Revolving Credit Facility is (y) 0.25% over the Base Rate or (z) 1.25% over the LIBOR Rate. As of December 31, 2022, the applicable margin for the Revolving Credit Facility was 1.25%. In addition, there is an annual commitment fee, based on the Company's first lien net leverage ratio, on the average unused revolving credit borrowings available under the Revolving Credit Facility. As of December 31, 2022, the commitment fee is 0.25%. Borrowings under the Revolving Credit Facility are payable at the option of the Company throughout the term of the Senior Secured Credit Facility with the balance due in September 2025.

The Senior Secured Credit Facility requires the Company to maintain a specified maximum first lien net leverage ratio of 5.50x when revolving loan commitments remain outstanding on the Revolving Credit Facility at the end of a fiscal quarter. As of December 31, 2022, the Company had no amounts outstanding under the Revolving Credit Facility; however, the Company would have been in compliance with the maximum first lien net leverage ratio, achieving a 0.41x ratio. Additionally, within the terms of the Senior Secured Credit Facility, a first lien net leverage ratio at or below 4.00x results in the elimination of excess cash flow payments on the Senior Secured Credit Facility for the applicable year.

In addition, the Credit Agreement, among other things, includes customary restrictions (subject to certain exceptions) on the Company's ability to incur certain indebtedness, grant certain liens, make certain investments, engage in acquisitions, consolidations and mergers, declare or pay certain dividends or repurchase shares of the Company's common stock. As of December 31, 2022, the Company was in compliance with all covenants under the Credit Agreement.

Senior Notes

Each series of the Senior Notes is unsecured and is guaranteed by each of ATI's domestic subsidiaries that is a borrower under or guarantees the Senior Secured Credit Facility and are unconditionally guaranteed, jointly and severally, by any of ATI's future domestic subsidiaries that are borrowers under or guarantee the Senior Secured Credit Facility. None of ATI's domestic subsidiaries currently guarantee its obligations under the Senior Secured Credit Facility, and therefore none of ATI's domestic subsidiaries currently guarantee any series of the Senior Notes. The indentures governing the Senior Notes contain negative covenants restricting or limiting the Company's ability to, among other things: incur or guarantee additional indebtedness, incur liens, pay dividends on, redeem or repurchase the Company's capital stock, make certain investments, permit payment or dividend restrictions on certain of the Company's subsidiaries, sell assets, engage in certain transactions with affiliates, and consolidate or merge or sell all or substantially all of the Company's assets. As of December 31, 2022, the Company was in compliance with all covenants under the indentures governing the Senior Notes.

In November 2020, ATI redeemed all of its outstanding 5.0% Senior Notes due 2024 (the "5.0% Senior Notes"), resulting in a loss of \$19 million, which included the premium between the purchase price of the 5.0% Senior Notes and the face value of such notes and the deferred financing fees written off.

ATI may from time to time seek to retire its Senior Notes through cash purchases, exchanges for equity securities, open market purchases, privately negotiated transactions, contractual redemptions or otherwise. Such repurchases or exchanges, if any, will depend on prevailing market conditions, liquidity requirements, contractual restrictions and other factors and will be in accordance with the respective indenture governing such notes. The amounts involved may be material. Some or all of the 4.75% Senior Notes may be redeemed at any time at redemption prices specified in the indenture governing such notes. Some or all of the 5.875% Senior Notes may be redeemed prior to June 1, 2024 by paying a price equal to 100.00% of the principal amount being redeemed, plus an "applicable premium". At any time on or after June 1, 2024, ATI may redeem some or all of the 5.875% Senior Notes at redemption prices specified in the indenture governing such notes. ATI may redeem up to 40% of the 3.75% Senior Notes prior to January 30, 2024 by paying a price equal to 103.750% of the principal amount being redeemed. On or after January 30, 2024 and prior to January 30, 2026, ATI may redeem some or all of the 3.75% Senior Notes by paying a price equal to 100.00% of the principal amount being redeemed, plus an "applicable premium". At any time on or after January 30, 2026, ATI may redeem some or all of the 3.75% Senior Notes at redemption prices specified in the indenture governing such notes.

NOTE 9. DERIVATIVES

The Company is subject to interest rate risk related to the Senior Secured Credit Facility and enters into interest rate swaps that are based on LIBOR to manage a portion of this exposure. The interest rate swaps are designated as cash flow hedges that qualify for hedge accounting under the hypothetical derivative method. Fair value adjustments are recorded as a component of AOCL in the Consolidated Balance Sheets. Balances in AOCL are reclassified to earnings when transactions related to the underlying risk are settled. See "Note 7. Fair Value of Financial Instruments" for information regarding the fair value of the Company's interest rate swaps.

As of December 31, 2022, the Company held interest rate swaps as follows (dollars in millions):

Effective Dates	Notional Amount	Weighted Average LIBOR Fixed Rate
September 2019 - September 2025	\$ 250	3.04 %
September 2022 - September 2025	\$ 250	2.82 %

The following tabular disclosures further describe the Company's interest rate derivatives qualifying and designated for hedge accounting and their impact on the financial condition of the Company (dollars in millions):

	Balance Sheet Location	Fair Value	
		December 31, 2022	December 31, 2021
Derivative Assets:			
Interest rate swaps	Other current assets	\$ 7	\$ —
	Other non-current assets	11	—
Total derivative assets		\$ 18	\$ —
Derivative Liabilities:			
Interest rate swaps	Other current liabilities	\$ —	\$ 10
	Other non-current liabilities	—	21
Total derivative liabilities		\$ —	\$ 31

The balance of derivative gains and (losses) recorded in AOCL as of December 31, 2022 and 2021 was \$18 million and (\$31) million, respectively. The Company had \$9 million of derivative gains recorded in AOCL expected to be reclassified to earnings within the next twelve months as of December 31, 2022. See "Note 17. Accumulated Other Comprehensive Loss" for information regarding activity recorded as a component of AOCL during the year ended December 31, 2022.

NOTE 10. PRODUCT WARRANTY LIABILITIES

As of December 31, 2022, the current and non-current product warranty liabilities were \$33 million and \$24 million, respectively. As of December 31, 2021, the current and non-current product warranty liabilities were \$33 million and \$20 million, respectively. Product warranty liability activities consist of the following (dollars in millions):

	Year ended December 31, 2022	Year ended December 31, 2021	Year ended December 31, 2020
Beginning balance	\$ 53	\$ 66	\$ 52
Payments	(31)	(30)	(32)
Increase in liability (warranty issued during period)	17	16	15
Net adjustments to liability	18	1	31
Ending balance	\$ 57	\$ 53	\$ 66

The adjustments to the total liability in 2022, 2021 and 2020 were the result of general changes in estimates for various products and specific field action programs as additional claims data and field information became available.

In 2020, the Company recorded a \$23 million product warranty adjustment to address a transmission performance issue associated with shift quality in a defined population of products. As a result of this performance issue, the Company created a field action program in 2019 dedicated to the defined population of products and reviewed, assessed and made adjustments to the liability on a quarterly basis. The product warranty adjustment in 2020 was the result of additional claims data and field information becoming available.

NOTE 11. DEFERRED REVENUE

As of December 31, 2022, the current and non-current deferred revenue were \$38 million and \$93 million, respectively. As of December 31, 2021, the current and non-current deferred revenue were \$37 million and \$99 million, respectively. Deferred revenue activity consists of the following (dollars in millions):

	Year ended December 31, 2022	Year ended December 31, 2021	Year ended December 31, 2020
Beginning balance	\$ 136	\$ 143	\$ 139
Increases	35	29	40
Revenue earned	(40)	(36)	(36)
Ending balance	<u>\$ 131</u>	<u>\$ 136</u>	<u>\$ 143</u>

Deferred revenue recorded in current and non-current liabilities related to ETC as of December 31, 2022 were \$30 million and \$85 million, respectively. Deferred revenue recorded in current and non-current liabilities related to ETC as of December 31, 2021 were \$30 million and \$84 million, respectively.

NOTE 12. LEASES***Lessee Accounting***

Contracts are assessed by the Company to determine if the contract conveys the right to control an identified asset in exchange for consideration during a period of time. The Company classifies all identified leases as either operating or finance leases. As of December 31, 2022, the Company was not a party to any finance leases. Contracts that contain leases are assessed to determine if the consideration in the contract is related to a lease component, non-lease component or other components not related to the lease. Lease components are recorded as right-of-use ("ROU") assets and lease liabilities while any non-lease component is expensed as incurred. The consideration in the contract related to other components not related to the lease is allocated among the lease component and the non-lease component, as applicable, based on the stand-alone selling price of the lease and non-lease components.

Certain lease contracts may contain an option to extend or terminate the lease. The Company considers the economic impact of extension and termination options by contract. If the Company concludes it is reasonably certain an option will be exercised, that option is included in the lease term and impacts the amount recorded as an ROU asset and lease liability upon inception of the contract.

The Company's lease liability is determined by discounting the future cash flows over the lease period. The Company determines its discount rates utilizing current secured financing rates based on the length of the lease period plus the Company's margin over LIBOR on the Term Loan. The Company believes this rate effectively represents a borrowing rate the Company could obtain on a debt instrument possessing similar terms as the lease. Lease liabilities are classified between current and non-current liabilities based on the terms of the underlying leases. The weighted average discount rate on operating leases as of December 31, 2022 and 2021 was 4.43% and 4.25%, respectively.

As of both December 31, 2022 and December 31, 2021, the Company recorded current and non-current operating lease liabilities of \$4 million and \$13 million, respectively. The following table reconciles future undiscounted cash flows for operating leases as of December 31, 2022 to total operating lease liabilities:

	December 31, 2022
2023	\$ 5
2024	4
2025	2
2026	2
2027	2
Thereafter	7
Total lease payments	\$ 22
Less: Interest	5
Present value of lease liabilities	\$ 17

ROU assets are calculated as the related lease liability adjusted for lease incentives, prepayments and the effect of escalating lease payments on period expense. The below table depicts the ROU assets held by the Company based on the underlying asset:

	December 31, 2022	December 31, 2021
Buildings	\$ 15	\$ 16
Land	1	1
Vehicles	1	1
Total ROU assets	\$ 17	\$ 18

The weighted average remaining lease term as of December 31, 2022 and December 31, 2021 was 6.3 years and 6.8 years, respectively.

Operating lease expense was \$5 million and \$6 million for the years ended December 31, 2022 and 2021, respectively, and was recorded within Selling, general and administrative expense and Engineering — research and development on the Company's Consolidated Statements of Comprehensive Income. There was no material short-term operating lease expense for either of the years ended December 31, 2022 or 2021.

The calculation of the Company's ROU assets and lease liabilities did not include cash consideration as of either December 31, 2022 or 2021. During the years ended December 31, 2022 and 2021, the Company recorded \$4 million and \$2 million, respectively, of new ROU assets obtained in exchange for lease obligations.

NOTE 13. OTHER (EXPENSE) INCOME, NET

Other (expense) income, net consists of the following (dollars in millions):

	Years ended December 31,		
	2022	2021	2020
Unrealized (loss) gain on marketable securities	\$ (22)	\$ 4	\$ —
Loss on foreign exchange	(13)	(2)	(6)
Post-retirement benefit plan amendment credits	9	10	13
Technology-related investments gain	6	4	—
Expenses related to long-term debt refinancing	—	—	(13)
Other	(1)	3	2
Total	\$ (21)	\$ 19	\$ (4)

NOTE 14. OTHER CURRENT LIABILITIES

Other current liabilities consist of the following (dollars in millions):

	As of December 31, 2022	As of December 31, 2021
Payroll and related costs	\$ 72	\$ 80
Sales allowances	42	39
Taxes payable	31	14
Accrued interest payable	24	24
Vendor buyback obligation	16	16
Lease liability	4	4
Derivative liabilities	—	10
Other accruals	19	17
Total	<u>\$ 208</u>	<u>\$ 204</u>

NOTE 15. EMPLOYEE BENEFIT PLANS

The Company provides defined benefit pension plans, defined contribution plans and/or other postretirement benefit plans to certain employees globally. However, contributions to the Company's various international benefit plans are not material for the periods presented. The Company's defined benefit pension plans generally provide benefits of negotiated, stated amounts for each year of service as well as significant supplemental benefits for eligible employees. The Company sponsors defined contribution retirement savings plans for eligible employees, based on employee location and status. The Company's salaried defined contribution retirement savings plans provide for a Company match of employee contributions up to certain limits based upon eligible base salary. The charge to expense for the Company's defined contribution retirement savings plans was \$16 million, \$14 million and \$12 million for the years ended December 31, 2022, 2021 and 2020, respectively. The Company is also responsible for OPEB costs (medical, dental, vision, and life insurance) for hourly employees hired prior to May 19, 2008, excluding those employees eligible to retire at the time of the sale of the Company. The plan is unfunded and any future payments will be funded by the Company's operating cash flows.

Obligations, Funded Status and Recognition in the Consolidated Balance Sheets

The following table provides a reconciliation of the changes in the benefit obligations, funded status and amounts recognized in the Consolidated Balance Sheets for the years ended December 31, 2022 and 2021 (dollars in millions):

	Pension Plans		Post-retirement Benefits	
	Year ended December 31, 2022	Year ended December 31, 2021	Year ended December 31, 2022	Year ended December 31, 2021
Benefit Obligations:				
Benefit obligation at beginning of year	\$ 220	\$ 235	\$ 102	\$ 107
Service cost	7	9	1	1
Interest cost	6	5	3	3
Benefits paid	(15)	(14)	(4)	(4)
Actuarial gain	(57)	(15)	(29)	(5)
Benefit obligation at end of year	\$ 161	\$ 220	\$ 73	\$ 102
Fair Value of Plan Assets:				
Fair value of plan assets at beginning of year	\$ 213	\$ 228	\$ —	\$ —
Actual return on plan assets	(43)	(1)	—	—
Employer contributions	3	—	4	3
Benefits paid	(15)	(14)	(4)	(3)
Fair value of plan assets at end of year	\$ 158	\$ 213	\$ —	\$ —
Net Funded Status	\$ (3)	\$ (7)	\$ (73)	\$ (102)
Amounts Recognized in Balance Sheet:				
Noncurrent assets	\$ 3	\$ 1	\$ —	\$ —
Current liabilities	—	—	(4)	(4)
Noncurrent liabilities	(6)	(8)	(69)	(98)
Total liabilities	\$ (3)	\$ (7)	\$ (73)	\$ (102)
Accumulated Other Comprehensive Loss:				
Prior service credit	\$ 1	\$ 2	\$ 24	\$ 34
Actuarial (gain) loss	(1)	(8)	27	(3)
Total	\$ —	\$ (6)	\$ 51	\$ 31

The accumulated benefit obligation for the Company's pension plans as of December 31, 2022 and 2021 was \$159 million and \$216 million, respectively.

The Company's Pension and OPEB benefit obligations decreased for the year ended December 31, 2022 compared to the year ended December 31, 2021 principally driven by the increase in weighted-average discount rates used to value each respective benefit obligation.

The table below provides the weighted-average actuarial assumptions used to determine the benefit obligations of the Company's plans.

	Pension Plans		Post-retirement Benefits		
	As of December 31,				
	2022	2021	2022	2021	
Discount rate	5.20%	2.70%	5.20%	2.80%	
Rate of compensation increase (salaried)	3.00%	3.00%	N/A	N/A	

The discount rate is used to determine the present value of the Company's benefit obligations. The Company's discount rate is determined by matching the plans' projected cash flows to a yield curve based on long-term, fixed income debt instruments available as of the measurement date of December 31, 2022. The Company reviews all actuarial assumptions on an annual basis and in the case of remeasurement.

As of December 31, 2022 and 2021, the projected benefit obligation, the accumulated benefit obligation, and the fair value of plan assets for pension plans with a projected benefit obligation in excess of plan assets and for pension plans with an accumulated benefit obligation in excess of plan assets were as follows (dollars in millions):

	Hourly Plan		Salary Plan	
	As of December 31,			
	2022	2021	2022	2021
Plans with projected benefit obligation in excess of plan assets:				
Projected benefit obligation	N/A ¹	N/A ¹	\$ 79	\$ 110
Fair value of plan assets	N/A ¹	N/A ¹	\$ 73	\$ 101
Plans with accumulated benefit obligation in excess of plan assets:				
Accumulated benefit obligation	N/A ¹	N/A ¹	\$ 76	\$ 105
Fair value of plan assets	N/A ¹	N/A ¹	\$ 73	\$ 101

⁽¹⁾ As of December 31, 2022 and 2021, the hourly defined pension plan had plan assets greater than the projected benefit obligation and the accumulated benefit obligation.

Net Periodic Benefit Cost

Information about the net periodic benefit cost (credit) and other changes recognized in AOCL for the pension and post-retirement benefit plans is as follows (dollars in millions):

	Pension Plans			Post-retirement Benefits		
	Year ended December 31, 2022	Year ended December 31, 2021	Year ended December 31, 2020	Year ended December 31, 2022	Year ended December 31, 2021	Year ended December 31, 2020
Net Periodic Benefit Cost (Credit):						
Service cost	\$ 7	\$ 9	\$ 10	\$ 1	\$ 1	\$ 1
Interest cost	6	5	6	3	3	3
Expected return on assets	(8)	(8)	(9)	—	—	—
Settlement loss	—	—	2	—	—	—
Prior service credit	(1)	—	—	(10)	(10)	(14)
Recognized actuarial loss	1	1	—	—	—	—
Net Periodic Benefit Cost (Credit)	\$ 5	\$ 7	\$ 9	\$ (6)	\$ (6)	\$ (10)
Other changes recognized in other comprehensive income:						
Net (gain) loss	\$ (6)	\$ (6)	\$ 12	\$ (29)	\$ (5)	\$ 12
Amortizations	—	(1)	(2)	10	10	13
Total recognized – other comprehensive (income) loss	\$ (6)	\$ (7)	\$ 10	\$ (19)	\$ 5	\$ 25

The components of net periodic benefit costs other than the service cost component are included in Other (expense) income, net in the Consolidated Statements of Comprehensive Income.

The voluntary and involuntary separation programs in the second quarter of 2020 resulted in a one-time, non-cash settlement charge of \$2 million recorded in Other (expense) income, net in the Consolidated Statements of Comprehensive Income.

The table below provides the weighted-average actuarial assumptions used to determine the net periodic benefit cost (credit).

	Pension Plans			Post-retirement Benefits		
	Year ended December 31, 2022	Year ended December 31, 2021	Year ended December 31, 2020	Year ended December 31, 2022	Year ended December 31, 2021	Year ended December 31, 2020
Discount rate	2.70 %	2.30 %	3.20 %	2.80 %	2.40 %	3.20 %
Rate of compensation increase (salaried)	3.00 %	3.00 %	3.00 %	N/A	N/A	N/A
Expected return on assets	3.80 %	3.70 %	4.00 %	N/A	N/A	N/A

The overall expected rate of return on plan assets is based upon historical and expected future returns consistent with the expected benefit duration of the plan for each asset group adjusted for investment and administrative fees. Health care cost trends are used to project future post-retirement benefits payable from the Company's plans. As of December 31, 2022, future post-retirement health care costs were forecasted assuming an initial annual increase of up to 7.80%, decreasing to an annual increase of up to 4.00% by the year 2046. The Company reviews all actuarial assumptions on an annual basis and in the case of remeasurement.

Pension Plan Assets

The Company's pension plan assets mostly consist of diversified equity securities and diversified debt securities. The fair values of plan assets for the Company's pension plans as of December 31, 2022 and 2021 are as follows (dollars in millions):

	Fair Value Measurements Using					
	Quoted Prices in Active Markets for Identical Assets (Level 1)		Significant Other Observable Inputs (Level 2)		TOTAL	
	2022	2021	2022	2021	2022	2021
Diversified debt securities	\$ 8	\$ 14	\$ 123	\$ 160	\$ 131	\$ 174
Diversified equity securities	18	24	7	9	25	33
Cash equivalents	2	6	—	—	2	6
Total	\$ 28	\$ 44	\$ 130	\$ 169	\$ 158	\$ 213

The Company's investment strategy with respect to pension plan assets is to invest the assets in accordance with laws and regulations. The long-term primary objectives for the Company's pension assets are to provide results that meet or exceed the plans' actuarially assumed long-term rate of return without subjecting the funds to undue risk. To achieve these objectives the Company has established the following targets:

Asset Category	Target	
	Hourly	Salary
Cash equivalents	2 %	2 %
Diversified equity securities	15	15
Diversified debt securities	83	83
Total	100 %	100 %

Throughout 2022, the Company's investment committee has continued to evaluate the investments and take steps toward the established targets.

Expected Contributions and Benefit Payments

Information about expected cash flows for the Company's pension and post-retirement benefit plans is as follows (dollars in millions):

	Pension Plans	Post-retirement Benefits
Employer Contributions:		
2023 expected contributions	\$ —	\$ 4
Expected Benefit Payments:		
2023	10	4
2024	11	4
2025	12	4
2026	12	4
2027	12	4
2028-2032	65	24

Expected benefit payments for pension and post-retirement benefits will be paid from plan trusts or corporate assets. The Company's funding policy is to contribute amounts annually that are at least equal to the amounts required by applicable laws and regulations or to directly fund payments to plan participants. Additional discretionary contributions will be made when deemed appropriate to meet the Company's long-term obligation to the plans.

Non-qualified Deferred Compensation Plan

The Company maintains a non-qualified deferred compensation plan ("Deferred Compensation Plan") for a select group of management. Under the terms of the plan, the Company has utilized a rabbi trust to accumulate assets to fund its promise to pay benefits under the Deferred Compensation Plan. The rabbi trust is an irrevocable trust, which restricts any use of funds (operational or otherwise) by the Company other than to pay benefits under the Deferred Compensation Plan, and prevents immediate taxation of contributed amounts. Funds are accumulated through both employee deferrals and a Company match. Funds can be invested by the employee into a diversified group of investment options, which have been selected by the Company's investment committee, that are all categorized as Level 1 in the fair value hierarchy. The Company match resulted in no charge to the Consolidated Statements of Comprehensive Income for any of the years ended December 31, 2022, 2021 and 2020, and the fair value of the rabbi trust plan assets and deferred compensation obligation was \$15 million and \$19 million as of December 31, 2022 and 2021, respectively.

NOTE 16. INCOME TAXES

Income before income taxes included the following (dollars in millions):

	Years ended December 31,		
	2022	2021	2020
U.S. income	\$ 621	\$ 513	\$ 364
Foreign income	24	59	29
Total	\$ 645	\$ 572	\$ 393

The provision for income tax expense was estimated as follows (dollars in millions):

	Years ended December 31,		
	2022	2021	2020
Estimated current income taxes:			
U.S. federal	\$ 98	\$ 48	\$ 18
U.S. state and local	11	8	1
Foreign	9	10	6
Total Current	118	66	25
Deferred income tax expense, net:			
U.S. federal	5	56	61
U.S. state and local	(3)	8	7
Foreign	(6)	—	1
Total Deferred	(4)	64	69
Total income tax expense	\$ 114	\$ 130	\$ 94

A reconciliation of the provision for income tax expense compared with the amounts at the U.S. federal statutory rate is as follows (dollars in millions):

	Years ended December 31,		
	2022	2021	2020
Tax at U.S. statutory income tax rate	\$ 136	\$ 120	\$ 82
Effect of tax rate changes	(15)	2	5
State tax expense	12	12	10
Tax credits	(9)	(4)	(5)
Valuation allowance	(6)	(1)	2
Foreign rate differential	(4)	(2)	(2)
Uncertain tax position	(3)	—	—
Non-deductible expenses	2	—	3
Other adjustments	1	3	(1)
Total income tax expense	\$ 114	\$ 130	\$ 94

The effective tax rate for the years ended December 31, 2022 and 2021 was 18% and 23%, respectively. The change in the effective tax rate in 2022 was due to enacted state tax rate legislation that resulted in a deferred tax benefit.

Deferred income tax assets and liabilities as of December 31, 2022 and 2021 reflect the effect of temporary differences between amounts of assets, liabilities and equity for financial reporting purposes and the bases of such assets, liabilities and equity as measured by tax laws, as well as tax loss and tax credit carry forwards. Net deferred tax assets and liabilities are classified as non-current in the Consolidated Balance Sheets. As described above, the deferred tax assets and liabilities are measured based on the enacted tax rates that will apply in the years in which the temporary differences are expected to be recovered or paid.

The Company has not recognized any deferred tax liabilities associated with earnings in foreign subsidiaries, except for its subsidiary located in China, as they are intended to be permanently reinvested and used to support foreign operations or have no associated tax requirements. As of December 31, 2022, the Company has recorded a deferred tax liability of \$3 million for the tax liability associated with the remittance of previously taxed income and unremitted earnings for its subsidiary located in China.

Temporary differences and carryforwards that gave rise to deferred tax assets and liabilities included the following (dollars in millions):

	As of December 31, 2022	As of December 31, 2021
Deferred tax assets:		
Other accrued liabilities	\$ 30	\$ 35
Deferred revenue	29	31
Capitalized research	29	—
Warranty accrual	11	11
Stock-based compensation	10	10
Inventories	7	7
Sales allowances and rebates	7	7
Tax credits	7	5
Operating loss carryforwards	3	4
Technology-related investments	2	3
Unrealized loss on Interest rate hedges	—	7
Other	9	13
Total deferred tax assets	144	133
Valuation allowances	(7)	(11)
Deferred tax liabilities:		
Goodwill	(413)	(405)
Trade name	(179)	(173)
Property, plant and equipment	(53)	(46)
Intangibles	(12)	(7)
Post-retirement	(6)	—
Other	(2)	(3)
Total deferred tax liabilities	(665)	(634)
Net deferred tax liability	\$ (528)	\$ (512)

Management has determined, based on an evaluation of available objective and subjective evidence, that it is more likely than not that certain foreign deferred tax assets will not be realized; therefore, these deferred tax assets are offset with a valuation allowance of \$7 million as of December 31, 2022 and \$11 million as of December 31, 2021.

The 2017 U.S. Tax Cuts and Jobs Act requires taxpayers to capitalize and amortize specified research and development expenditures over a period of five years for domestic or 15 years for foreign research, beginning with the tax years after December 31, 2021. As a result, the Company recognized a deferred tax asset of \$29 million as of December 31, 2022.

All of the Company's tax returns, once filed, will remain subject to examination by the various taxing authorities for the duration of the applicable statute of limitations (generally three years from the earlier of the date of filing or the due date of the return).

NOTE 17. ACCUMULATED OTHER COMPREHENSIVE LOSS

The changes in components of AOCL consisted of the following (dollars in millions):

	Pension and OPEB liability adjustments	Interest rate swaps	Foreign currency items	Total
AOCL as of December 31, 2019	\$ 8	\$ (26)	\$ (34)	\$ (52)
Other comprehensive (loss) income before reclassifications	(22)	(37)	10	(49)
Amounts reclassified from AOCL	(14)	11	—	(3)
Income tax benefit	9	6	—	15
Net current period other comprehensive (loss) income	\$ (27)	\$ (20)	\$ 10	\$ (37)
AOCL as of December 31, 2020	\$ (19)	\$ (46)	\$ (24)	\$ (89)
Other comprehensive income (loss) before reclassifications	12	14	(8)	18
Amounts reclassified from AOCL	(9)	15	—	6
Income tax expense	(1)	(7)	—	(8)
Net current period other comprehensive income (loss)	\$ 2	\$ 22	\$ (8)	\$ 16
AOCL as of December 31, 2021	\$ (17)	\$ (24)	\$ (32)	\$ (73)
Other comprehensive income (loss) before reclassifications	39	44	(10)	73
Amounts reclassified from AOCL	(10)	6	—	(4)
Income tax expense	(7)	(11)	—	(18)
Net current period other comprehensive income (loss)	\$ 22	\$ 39	\$ (10)	\$ 51
Balance at December 31, 2022	\$ 5	\$ 15	\$ (42)	\$ (22)

The following table shows the location in the Consolidated Statements of Comprehensive Income affected by reclassifications from AOCL (dollars in millions):

AOCL Components	For the year ended December 31, 2020	
	Amounts reclassified from AOCL	Affected line item in the consolidated statements of comprehensive income
Interest rate swaps	\$ (11)	Interest expense, net
Prior service credit	14	Other (expense) income, net
Total reclassifications, before tax	3	Income before income taxes
Income tax expense	(1)	Income tax expense
Total reclassifications	\$ 2	
AOCL Components	For the year ended December 31, 2021	
	Amounts reclassified from AOCL	Affected line item in the consolidated statements of comprehensive income
Interest rate swaps	\$ (15)	Interest expense, net
Prior service credit	10	Other (expense) income, net
Recognized actuarial loss	(1)	Other (expense) income, net
Total reclassifications, before tax	(6)	Income before income taxes
Income tax benefit	1	Income tax expense
Total reclassifications	\$ (5)	

AOCL Components	For the year ended December 31, 2022	
	Amounts reclassified from AOCL	Affected line item in the consolidated statements of comprehensive income
Interest rate swaps	\$ (6)	Interest expense, net
Prior service credit	11	Other (expense) income, net
Recognized actuarial loss	(1)	Other (expense) income, net
Total reclassifications, before tax	4	Income before income taxes
Income tax expense	(1)	Income tax expense
Total reclassifications	\$ 3	

The Company revised its disclosure of amounts reclassified from AOCL related to its interest rate swaps and the income tax benefit (expense) attributed to those reclassifications for the periods ended December 31, 2021 and 2020, which resulted in a decrease to the previously disclosed total reclassifications from AOCL. The Company believes these revisions to the disclosures are immaterial to the consolidated financial statements.

Prior service cost and actuarial loss are included in the computation of the Company's net periodic benefit cost. Please see "Note 15. Employee Benefit Plans" for additional details.

NOTE 18. COMMITMENTS AND CONTINGENCIES

Environmental Matters

The Company has an agreement with the Environmental Protection Agency to perform remedial activities at the Company's Indianapolis, Indiana manufacturing facilities related to historical soil and groundwater contamination. As of December 31, 2022, the Company had a liability recorded in the amount of \$3 million.

Claims, Disputes, and Litigation

The Company is party to various legal actions and administrative proceedings and subject to various claims arising in the ordinary course of business. These proceedings primarily involve commercial claims, product liability claims, personal injury claims and workers' compensation claims. The Company believes that the ultimate liability, if any, in excess of amounts already provided for in the consolidated financial statements or covered by insurance on the disposition of these matters will not have a material adverse effect on the financial position, results of operations or cash flows of the Company.

NOTE 19. CONCENTRATION OF RISK

As of December 31, 2022 and 2021, the Company employed approximately 3,500 and 3,400 employees, respectively, with 89% and 90%, respectively, of those employees in the U.S. Approximately 46% of the Company's U.S. employees were represented by unions and subject to a collective bargaining agreement as of December 31, 2022 and 2021. The Company is currently operating under a collective bargaining agreement with UAW Local 933 that expires in November 2023.

Three customers accounted for 10% or more of net sales within the last three years presented.

% of net sales	Years ended December 31,		
	2022	2021	2020
Daimler AG	20%	20%	20%
Traton SE ¹	10%	10%	11%
PACCAR Inc.	9%	10%	11%

⁽¹⁾ Traton SE acquired Navistar International Corporation in July 2021. Percentages for 2022 and 2021 include net sales to Traton SE and Navistar International Corporation. Percentages for 2020 include net sales to Navistar International Corporation only.

Two customers accounted for 10% or more of outstanding accounts receivable within the last two years presented.

<i>% of accounts receivable</i>	<u>As of December 31, 2022</u>	<u>As of December 31, 2021</u>
Daimler AG	17 %	17 %
Traton SE	11 %	11 %

No supplier accounted for 10% or more of materials purchased during the years ended December 31, 2022, 2021 or 2020.

NOTE 20. COMMON STOCK

The Company's current stock repurchase program (the "Repurchase Program") was authorized by the Board of Directors in 2016. On February 24, 2022, the Board of Directors authorized the Company to repurchase an additional \$1,000 million of its common stock, bringing the total amount authorized under the Repurchase Program to \$4,000 million.

During 2022, the Company repurchased approximately \$278 million of its common stock under the Repurchase Program, leaving \$1,035 million of authorized repurchases remaining under the Repurchase Program as of December 31, 2022. The Repurchase Program has no termination date, and the timing and amount of stock purchases are subject to market conditions and corporate needs. The Repurchase Program may be modified, suspended or discontinued at any time at the Company's discretion.

NOTE 21. EARNINGS PER SHARE

The following table reconciles the numerators and denominators used to calculate basic EPS and diluted EPS (in millions, except per share data):

	<u>Years ended December 31,</u>		
	<u>2022</u>	<u>2021</u>	<u>2020</u>
Net income	\$ 531	\$ 442	\$ 299
Weighted average shares of common stock outstanding	96	107	114
Dilutive effect stock-based awards	—	—	—
Diluted weighted average shares of common stock outstanding	96	107	114
Basic earnings per share attributable to common stockholders	\$ 5.53	\$ 4.13	\$ 2.62
Diluted earnings per share attributable to common stockholders	\$ 5.53	\$ 4.13	\$ 2.62

The dilutive impact of stock-based compensation is calculated using the treasury stock method. The treasury stock method assumes that the Company uses the proceeds from the exercise of awards to repurchase common stock at the average market price during the period. During the years ended December 31, 2022, 2021 and 2020, 2 million, 1 million and 1 million of outstanding stock options were excluded from the diluted EPS calculation because they were anti-dilutive. Basic and diluted EPS for the full-year is calculated using the weighted average shares of common stock outstanding during the year while quarterly basic and diluted EPS is calculated using the weighted average shares of common stock outstanding during the quarter; therefore, the sum of the four quarters' EPS may not equal full-year EPS.

NOTE 22. GEOGRAPHIC INFORMATION

The Company had the following net sales by country, based on the location of the customer (dollars in millions):

	Years ended December 31,		
	2022	2021	2020
United States	\$ 1,944	\$ 1,706	\$ 1,521
China	196	122	87
Japan	103	109	66
Canada	57	62	70
Germany	44	34	36
Mexico	41	50	61
Other	384	319	240
Total	\$ 2,769	\$ 2,402	\$ 2,081

The Company had the following net long-lived assets by country (dollars in millions):

	Years ended December 31,		
	2022	2021	2020
United States	\$ 730	\$ 680	\$ 611
India	19	11	12
Hungary	10	11	11
Other	4	4	4
Total	\$ 763	\$ 706	\$ 638

NOTE 23. ACQUISITIONS

On March 31, 2022, the Company acquired transmission portfolio assets of India-based AVTEC Ltd.'s off-highway business and AVTEC's Madras Export Procession Zone off-highway component machining business, for \$23 million in cash. The Company accounted for this transaction under the acquisition method in accordance with authoritative guidance on business combinations. Control was obtained as of the purchase date through the purchase agreement. The acquired business was integrated into the Company's single operating segment.

The purchase price allocation for this transaction resulted in the recognition of goodwill, intangible assets and property, plant and equipment of \$13 million, \$8 million and \$2 million, respectively. The Company has completed its initial accounting for the fair value of the acquired assets and liabilities, and any adjustments identified in the measurement period, which will not exceed one year from the acquisition date, will be accounted for prospectively.

Allison Transmission Holdings, Inc.
Schedule I—Parent Company only Balance Sheets
(dollars in millions)

	December 31, 2022	December 31, 2021
ASSETS		
Current Assets:		
Cash	\$ —	\$ —
Total Current Assets	—	—
Investments in and advances to subsidiaries	874	634
TOTAL ASSETS	\$ 874	\$ 634
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current Liabilities:		
Accounts payable	\$ —	\$ —
Total Current Liabilities	—	—
Capital stock	1	1
Paid in capital	1,848	1,832
Treasury stock	—	—
Accumulated deficit	(953)	(1,126)
Accumulated other comprehensive loss, net of tax	(22)	(73)
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	\$ 874	\$ 634

The accompanying note is an integral part of the Parent Company only financial statements.

Allison Transmission Holdings, Inc.
Schedule I—Parent Company only Statements of Comprehensive Income
(dollars in millions)

	Years ended December 31,		
	2022	2021	2020
Net sales	\$ —	\$ —	\$ —
General and administrative fees	—	—	—
Total operating income	—	—	—
Other income:			
Equity earnings of consolidated subsidiary	531	442	299
Income before income taxes	531	442	299
Income tax expense	—	—	—
Net income	\$ 531	\$ 442	\$ 299
Comprehensive income	\$ 582	\$ 458	\$ 262

The accompanying note is an integral part of the Parent Company only financial statements.

Allison Transmission Holdings, Inc.
Schedule I—Parent Company only Statements of Cash Flows
(dollars in millions)

	Years ended December 31,		
	2022	2021	2020
CASH FLOWS FROM OPERATING ACTIVITIES:			
Net income	\$ 531	\$ 442	\$ 299
Deduct items included in net income not providing cash:			
Equity in earnings in consolidated subsidiary	(531)	(442)	(299)
Net cash provided by operating activities	—	—	—
CASH FLOWS FROM INVESTING ACTIVITIES:			
Investments in subsidiaries	(2)	(3)	(2)
Dividends	80	81	78
Net cash provided by investing activities	78	78	76
CASH FLOWS FROM FINANCING ACTIVITIES:			
Capital contributions	2	3	2
Dividends	(80)	(81)	(78)
Net cash used in financing activities	(78)	(78)	(76)
Net increase (decrease) during period	—	—	—
Cash and cash equivalents at beginning of period	—	—	—
Cash and cash equivalents at end of period	\$ —	\$ —	\$ —

The accompanying note is an integral part of the Parent Company only financial statements.

Allison Transmission Holdings, Inc.
Schedule I—Parent Company only Footnote

NOTE 1—BASIS OF PRESENTATION

Allison Transmission Holdings, Inc. (the “Parent Company”) is a holding company that conducts all of its business operations through its subsidiaries. There are restrictions on the Parent Company’s ability to obtain funds from its subsidiaries through dividends (refer to “Note 8. Debt” of Notes to Consolidated Financial Statements). The entire amount of the Parent Company’s consolidated net assets was subject to restrictions on payment of dividends as of December 31, 2022, 2021 and 2020. Accordingly, these financial statements have been presented on a “parent-only” basis. Under a parent-only presentation, the Parent Company’s investments in its consolidated subsidiaries are presented under the equity method of accounting. These parent-only financial statements should be read in conjunction with Allison Transmission Holdings, Inc.’s audited Consolidated Financial Statements included elsewhere herein.

ITEM 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

ITEM 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act), as of December 31, 2022. In designing and evaluating the disclosure controls and procedures, management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply its judgment in evaluating the benefits of possible controls and procedures relative to their costs.

Based on the evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures as of December 31, 2022, the end of the period covered by this Annual Report on Form 10-K, were effective to provide reasonable assurance that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act). Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an assessment of the effectiveness of our internal control over financial reporting as of December 31, 2022. In making this assessment, our management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control—Integrated Framework (2013). Based on this assessment, management concluded that our internal control over financial reporting was effective as of December 31, 2022. PricewaterhouseCoopers LLP, our independent registered public accounting firm, has audited the effectiveness of our internal control over financial reporting as of December 31, 2022. Their report is included in Part II, Item 8., "Financial Statements and Supplementary Data" in this Annual Report on Form 10-K.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the quarter ended December 31, 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. Other Information

None.

ITEM 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

PART III.

ITEM 10. Directors, Executive Officers and Corporate Governance

The information required by this Item concerning our executive officers, directors and nominees for director and Audit Committee members and financial expert(s) and disclosure of delinquent filers under Section 16(a) of the Exchange Act is incorporated herein by reference from our definitive Proxy Statement for our 2023 annual meeting of stockholders which will be filed with the SEC pursuant to Regulation 14A within 120 days after the end of our last fiscal year.

Code of Business Conduct

We have adopted the Allison Code of Business Conduct that applies to all of our directors and officers and other employees, including our principal executive officer, principal financial officer and principal accounting officer. This code is publicly available through the Investor Relations section of our website at <https://ir.allisontransmission.com>. We will post on the Investor Relations section of our website any amendment to the Allison Code of Business Conduct, or any grant of a waiver from a provision of the Allison Code of Business Conduct.

ITEM 11. Executive Compensation

The information required by this Item concerning remuneration of our executive officers and directors, material transactions involving such executive officers and directors and Compensation Committee interlocks, as well as the Compensation Committee Report and CEO pay ratio disclosure, are incorporated herein by reference to our definitive Proxy Statement for our 2023 annual meeting of stockholders which will be filed with the SEC pursuant to Regulation 14A within 120 days after the end of our last fiscal year.

ITEM 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this Item concerning the stock ownership of management and five percent beneficial owners and securities authorized for issuance under equity compensation plans is incorporated herein by reference to our definitive Proxy Statement for our 2023 annual meeting of stockholders which will be filed with the SEC pursuant to Regulation 14A within 120 days after the end of our last fiscal year.

ITEM 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this Item concerning certain relationships and related person transactions, and director independence is incorporated herein by reference to our definitive Proxy Statement for our 2023 annual meeting of stockholders which will be filed with the SEC pursuant to Regulation 14A within 120 days after the end of our last fiscal year.

ITEM 14. Principal Accounting Fees and Services

The information required by this Item concerning the fees and services of our independent registered public accounting firm and our Audit Committee actions with respect thereto is incorporated herein by reference to our definitive Proxy Statement for our 2023 annual meeting of stockholders which will be filed with the SEC pursuant to Regulation 14A within 120 days after the end of our last fiscal year.

PART IV.**ITEM 15. Exhibits and Financial Statement Schedules****(a)(1) Financial Statements.**

The response to this item is included in Part II, Item 8. of this Annual Report on Form 10-K.

(a)(2) Financial Statement Schedules.

Schedule I – Parent Company only Balance Sheets as of the years ended December 31, 2022 and 2021, Schedule I – Parent Company only Statements of Comprehensive Income for the years ended December 31, 2022, 2021 and 2020, Schedule I – Parent Company only Statements of Cash Flows for the years ended December 31, 2022, 2021 and 2020 and Schedule I – Parent Company only Footnote are included in Part II, Item 8. of this Annual Report on Form 10-K. All other schedules have been omitted because they are not required or because the information required is included in the consolidated financial statements and notes thereto.

(a)(3) Exhibits

See the response to Item 15.(b) below.

(b) Exhibits

The following exhibits are filed as part of, or are incorporated by reference into, this Annual Report on Form 10-K:

Exhibit No.	DESCRIPTION OF EXHIBIT
3.1	Second Amended and Restated Certificate of Incorporation of Allison Transmission Holdings, Inc. (incorporated by reference to Exhibit 3.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2012 filed April 26, 2012)
3.2	Amendment to Second Amended and Restated Certificate of Incorporation of Allison Transmission Holdings, Inc. (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed May 18, 2016)
3.3	Sixth Amended and Restated Bylaws of Allison Transmission Holdings, Inc. (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed May 11, 2020)
4.1	Form of Stock Certificate (incorporated by reference to Exhibit 4.1 to Amendment No. 3 to the Registrant's Registration Statement on Form S-1 filed June 17, 2011)
4.2	Indenture, dated as of September 26, 2017, between the Issuer and Wilmington Trust, National Association, as Trustee (including form of 4.75% Senior Notes due 2027) (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed September 26, 2017)
4.3	Indenture, dated as of March 29, 2019, between the Issuer and Wilmington Trust, National Association, as Trustee (including form of 5.875% Senior Notes due 2029) (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed March 29, 2019)
4.4	Indenture, dated as of November 19, 2020, between the Issuer and Wilmington Trust, National Association, as Trustee (including form of 3.75% Senior Notes due 2031) (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed November 19, 2020)
4.5	Description of Securities (incorporated by reference to Exhibit 4.5 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2019 filed February 27, 2020)
10.1	Second Amended and Restated Credit Agreement, dated as of March 29, 2019, among Allison Transmission Holdings, Inc., Allison Transmission, Inc., as Borrower, the several banks and other financial institutions or entities from time to time parties thereto as lenders and Citibank, N.A., as Administrative

- [Agent \(incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed March 29, 2019\)](#)
- 10.2 [Amendment No. 1 dated October 11, 2019, to the Second Amended and Restated Credit Agreement, dated as of March 29, 2019, among Allison Transmission Holdings, Inc., Allison Transmission, Inc., as Borrower, the several banks and other financial institutions or entities from time to time parties thereto as lenders, Citibank, N.A as Administrative Agent and as the 2019 refinancing term lender and the other agents and arrangers party thereto \(incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed October 15, 2019\)](#)
- 10.3 [Amendment No. 2 dated as of November 19, 2020, by and among Allison Transmission Holdings, Inc., Allison Transmission, Inc., as Borrower, the several banks and other financial institutions party thereto, as 2020 Revolving Credit Lenders and Citibank, N.A., as Administrative Agent amending the Second Amended and Restated Credit Agreement, dated as of March 29, 2019, among Allison Transmission Holdings, Inc., Allison Transmission, Inc., the several banks and other financial institutions or entities from time to time parties thereto as lenders, Citibank, N.A., as Administrative Agent and Citicorp North America, Inc., as Collateral Agent \(incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed November 19, 2020\)](#)
- 10.4 [Guarantee And Collateral Agreement made by Allison Transmission Holdings, Inc., Allison Transmission, Inc., as Borrower, and the Subsidiary Guarantors party thereto in favor of Citicorp North America, Inc., as Administrative Agent, dated as of August 7, 2007 \(incorporated by reference to Exhibit 10.3 to the Registrant's Registration Statement on Form S-1 filed March 18, 2011\)](#)
- 10.5 [Trademark Security Agreement made by Allison Transmission, Inc. in favor of Citicorp North America, Inc., as Administrative Agent, dated as of August 7, 2007 \(incorporated by reference to Exhibit 10.4 to the Registrant's Registration Statement on Form S-1 filed March 18, 2011\)](#)
- 10.6 [Copyright Security Agreement made by Allison Transmission, Inc. in favor of Citicorp North America, Inc., as Administrative Agent, dated as of August 7, 2007 \(incorporated by reference to Exhibit 10.5 to Amendment No. 2 to the Registrant's Registration Statement on Form S-1 filed May 16, 2011\)](#)
- 10.7* [Allison Transmission Holdings, Inc. 2015 Equity Incentive Award Plan \(incorporated by reference to Appendix A to the Registrant's Definitive Proxy Statement on Schedule 14A filed April 2, 2015\)](#)
- 10.8* [Allison Transmission Holdings, Inc. 2016 Incentive Plan \(incorporated by reference to Appendix B to the Registrant's Definitive Proxy Statement on Schedule 14A filed April 2, 2015\)](#)
- 10.9* [Form of 2015 Equity Incentive Award Plan Restricted Stock Agreement \(incorporated by reference to Exhibit 10.41 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2015 filed February 19, 2016\)](#)
- 10.10* [Form of 2015 Equity Incentive Award Plan Restricted Stock Unit Agreement \(incorporated by reference to Exhibit 10.42 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2015 filed February 19, 2016\)](#)
- 10.11* [Form of 2015 Equity Incentive Award Plan Stock Option Agreement \(incorporated by reference to Exhibit 10.43 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2015 filed February 19, 2016\)](#)
- 10.12* [Form of 2015 Equity Incentive Award Plan Performance Stock Unit Agreement \(incorporated by reference to Exhibit 10.25 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2016 filed February 24, 2017\)](#)
- 10.13* [Allison Transmission Holdings, Inc. 2011 Equity Incentive Award Plan \(incorporated by reference to Exhibit 10.10 to Amendment No. 3 to the Registrant's Registration Statement on Form S-1 filed June 17, 2011\)](#)
- 10.14* [Form of 2011 Equity Incentive Award Plan Restricted Stock Unit Agreement \(incorporated by reference to Exhibit 10.12 to Amendment No. 3 to the Registrant's Registration Statement on Form S-1 filed June 17, 2011\)](#)
- 10.15* [Form of 2011 Equity Incentive Award Plan Stock Option Agreement \(incorporated by reference to Exhibit 10.13 to Amendment No. 3 to the Registrant's Registration Statement on Form S-1 filed June 17, 2011\)](#)
- 10.16* [Form Amendment to Stock Option Agreement under the Allison Transmission Holdings, Inc. 2011 Equity Incentive Award Plan and Equity Incentive Plan of Allison Transmission Holdings, Inc. \(incorporated by](#)

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	reference to Exhibit 10.27 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2013 filed July 30, 2013)
10.17*	Form of 2011 Equity Incentive Award Plan Stock Option Agreement (incorporated by reference to Exhibit 10.29 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2013 filed October 29, 2013)
10.18*	Deferred Compensation Plan of Allison Transmission Inc. (incorporated by reference to Exhibit 10.21 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2012 filed July 31, 2012)
10.19*	Sixth Amended and Restated Non-Employee Director Compensation Policy (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2022 filed August 4, 2022)
10.20*	Amended and Restated Non-Employee Director Deferred Compensation Plan of Allison Transmission Holdings, Inc. (incorporated by reference to Exhibit 10.38 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2015 filed April 28, 2015)
10.21*	Form of Allison Transmission Holdings, Inc. Indemnification Agreement (incorporated by reference to Exhibit 10.9 to Amendment No. 2 to the Registrant's Registration Statement on Form S-1 filed May 16, 2011.)
10.22*	Allison Transmission, Inc. Executive Change in Control and Severance Plan (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed July 19, 2022)
10.23*	Severance and Change in Control Agreement, between Allison Transmission, Inc. and David S. Graziosi, dated as of March 23, 2018 (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed March 23, 2018)
10.24*	Separation Agreement, between Allison Transmission, Inc. and Randall R. Kirk, dated as of May 26, 2021 (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed May 27, 2021)
10.25*	Separation Agreement, between Allison Transmission, Inc. and Michael A. Dick, dated as of January 26, 2022 (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed January 27, 2022)
14.1	Code of Business Conduct (incorporated by reference to Exhibit 14.1 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2018 filed February 26, 2019)
21.1	List of Subsidiaries of Allison Transmission Holdings, Inc. (filed herewith)
23.1	Consent of PricewaterhouseCoopers LLP (filed herewith)
31.1	Certification pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934 of the Chief Executive Officer, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (filed herewith)
31.2	Certification pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934 of the Chief Financial Officer, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (filed herewith)
32.1	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (filed herewith)
101	The following financial information from the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2022, formatted in Inline XBRL (eXtensible Business Reporting Language): (i) the Consolidated Balance Sheets; (ii) the Consolidated Statements of Comprehensive Income; (iii) the Consolidated Statements of Cash Flows; (iv) the Consolidated Statements of Stockholders' Equity; (v) the Notes to Consolidated Financial Statements; (vi) the Parent Company only Balance Sheets; (vii) the Parent Company only Statements of Comprehensive Income; (viii) the Parent Company only Statements of Cash Flows; and (ix) the Parent Company only Footnote
104	Cover Page Interactive Data File – The cover page from the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2022, formatted in Inline XBRL and contained in Exhibit 101

* Indicates a management contract or compensatory plan or arrangement

ITEM 16. Form 10-K Summary

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Allison Transmission Holdings, Inc.
(Registrant)

Date: February 16, 2023

By: /s/ David S. Graziosi
David S. Graziosi
Chairman, President and Chief Executive Officer
(Principal Executive Officer)

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

<u>SIGNATURES</u>	<u>CAPACITY</u>	<u>DATE</u>
/s/ David S. Graziosi David S. Graziosi	Chairman, President and Chief Executive Officer (Principal Executive Officer)	February 16, 2023
/s/ G. Frederick Bohley G. Frederick Bohley	Senior Vice President, Chief Financial Officer and Treasurer (Principal Financial Officer and Principal Accounting Officer)	February 16, 2023
/s/ Judy Altmaier Judy Altmaier	Director	February 16, 2023
/s/ Stan A. Askren Stan A. Askren	Director	February 16, 2023
/s/ D. Scott Barbour D. Scott Barbour	Director	February 16, 2023
/s/ Philip J. Christman Philip J. Christman	Director	February 16, 2023
/s/ David C. Everitt David C. Everitt	Director	February 16, 2023
/s/ Alvaro Garcia-Tunon Alvaro Garcia-Tunon	Director	February 16, 2023
/s/ Carolann I. Haznedar Carolann I. Haznedar	Director	February 16, 2023
/s/ Richard P. Lavin Richard P. Lavin	Director	February 16, 2023
/s/ Sasha Ostojic Sasha Ostojic	Director	February 16, 2023
/s/ Gustave F. Perna Gustave F. Perna	Director	February 16, 2023
/s/ Thomas W. Rabaut Thomas W. Rabaut	Director	February 16, 2023
/s/ Richard V. Reynolds Richard V. Reynolds	Director	February 16, 2023
/s/ Krishna Shivram Krishna Shivram	Director	February 16, 2023

List of Subsidiaries

Name
Allison Transmission, Inc.

State or Country of
Organization
Delaware

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (No. 333-180285 and 333-204224) of Allison Transmission Holdings, Inc. of our report dated February 16, 2023 relating to the financial statements and financial statement schedule and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
Indianapolis, Indiana
February 16, 2023

**CERTIFICATION PURSUANT TO RULE 13a-14(a)/15d-14(a) OF THE SECURITIES
EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO SECTION 302 OF THE
SARBANES-OXLEY ACT OF 2002**

I, David S. Graziosi, certify that:

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

Dated: February 16, 2023

/s/ David S. Graziosi

Name: David S. Graziosi

Title: Chairman, President and Chief Executive Officer

(Principal Executive Officer)

**CERTIFICATION PURSUANT TO RULE 13a-14(a)/15d-14(a) OF THE SECURITIES
EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO SECTION 302 OF THE
SARBANES-OXLEY ACT OF 2002**

I, G. Frederick Bohley, certify that:

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

Dated: February 16, 2023

/s/ G. Frederick Bohley

Name: G. Frederick Bohley

Title: Senior Vice President, Chief Financial Officer and Treasurer

(Principal Financial Officer)

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

In connection with the Annual Report of Allison Transmission Holdings, Inc. (the "Company") on Form 10-K for the fiscal year ended December 31, 2022 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), we, David S. Graziosi, Chairman, President and Chief Executive Officer of the Company, and G. Frederick Bohley, Senior Vice President, Chief Financial Officer and Treasurer of the Company, certify, pursuant to 18 U.S.C. § 1350 as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

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

Dated: February 16, 2023

/s/ David S. Graziosi

Name: David S. Graziosi

Title: Chairman, President and Chief Executive Officer

(Principal Executive Officer)

Dated: February 16, 2023

/s/ G. Frederick Bohley

Name: G. Frederick Bohley

Title: Senior Vice President, Chief Financial Officer and Treasurer

(Principal Financial Officer)
