TENNECO INC
Form 10-K
February 28, 2013
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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2012

OR

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

Commission file number 1-12387

TENNECO INC.

(Exact name of registrant as specified in its charter)

Delaware	**76-0515284**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
500 North Field Drive	**60045**
Lake Forest, IL	(Zip Code)

(Address of principal executive offices)
Registrant s telephone number, including area code: (847) 482-5000

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

Title of each class	Name of each Exchange on which registered
Common Stock, par value $.01 per share	New York and Chicago Stock Exchanges

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 þ 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 þ

Note Checking the box above will not relieve any registrant required to file reports pursuant to Section 13 or 15(d) of the Exchange Act from their obligations under those Sections.

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 þ No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes þ No ¨

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant s knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ¨

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

Large accelerated filer þ	Accelerated filer ¨	Non-accelerated filer ¨ (Do not check if a smaller reporting company)	Smaller reporting company ¨

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

State the aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold, or the average bid and asked price of such common equity, as of the last business day of the registrant s most recently completed second fiscal quarter.

Class of Common Equity and Number of Shares held by Non-affiliates at June 30, 2012	Market Value held by Non-affiliates*
Common Stock, 58,004,065 shares	$1,555,669,023

* Based upon the closing sale price on the New York Stock Exchange Composite Tape for the Common Stock on June 30, 2012.
INDICATE THE NUMBER OF SHARES OUTSTANDING OF EACH OF THE REGISTRANT S CLASSES OF COMMON STOCK, AS OF THE LATEST PRACTICABLE DATE. Common Stock, par value $.01 per share, 60,549,949 shares outstanding as of February 21, 2013.

Documents Incorporated by Reference:

Document	Part of the Form 10-K into which incorporated
	Part III

Portions of Tenneco Inc. s Definitive Proxy Statement for the Annual Meeting of Stockholders to be held May 15, 2013

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CAUTIONARY STATEMENT FOR PURPOSES OF THE SAFE HARBOR PROVISIONS OF THE PRIVATE SECURITIES LITIGATION REFORM ACT OF 1995

This Report contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 concerning, among other things, our prospects and business strategies. These forward-looking statements are included in various sections of this report, including the section entitled Outlook appearing in Item 7 of this report. The words may, will, believe, should, could, plan, expect, anticipat similar expressions (and variations thereof), identify these forward-looking statements. Although we believe that the expectations reflected in these forward-looking statements are based on reasonable assumptions, these expectations may not prove to be correct. Because these forward-looking statements are also subject to risks and uncertainties, actual results may differ materially from the expectations expressed in the forward-looking statements. Important factors that could cause actual results to differ materially from the expectations reflected in the forward-looking statements include:

general economic, business and market conditions;

our ability to source and procure needed materials, components and other products and services in accordance with customer demand and at competitive prices;

changes in capital availability or costs, including increases in our cost of borrowing (i.e., interest rate increases), the amount of our debt, our ability to access capital markets at favorable rates, and the credit ratings of our debt;

changes in consumer demand, prices and our ability to have our products included on top selling vehicles, including any shifts in consumer preferences away from light trucks, which tend to be higher margin products for our customers and us, to other lower margin vehicles, for which we may or may not have supply arrangements;

changes in consumer demand for our automotive, commercial or aftermarket products, or changes in automotive and commercial vehicle manufacturers production rates and their actual and forecasted requirements for our products, due to difficult economic conditions, such as the significant production cuts by automotive manufacturers during 2008 and 2009, as well as any future reduction in demand for our products due to the sovereign debt crisis in Europe;

the overall highly competitive nature of the automobile and commercial vehicle parts industries, and any resultant inability to realize the sales represented by our awarded book of business (which is based on anticipated pricing and volumes over the life of the applicable program);

the loss of any of our large original equipment manufacturer (OEM) customers (on whom we depend for a substantial portion of our revenues), or the loss of market shares by these customers if we are unable to achieve increased sales to other OEMs or any change in customer demand due to delays in the adoption or enforcement of worldwide emissions regulations;

our ability to successfully execute cash management and other cost reduction plans, including our current European cost reduction initiatives, and to realize anticipated benefits from these plans;

industrywide strikes, labor disruptions at our facilities or any labor or other economic disruptions at any of our significant customers or suppliers or any of our customers other suppliers (such as the 2008 strike at American Axle, which disrupted our supply of products for significant General Motors (GM) platforms);

increases in the costs of raw materials, including our ability to successfully reduce the impact of any such cost increases through materials substitutions, cost reduction initiatives, customer recovery and other methods;

the negative impact of higher fuel prices on transportation and logistics costs, raw material costs and discretionary purchases of vehicles or aftermarket products;

the cyclical nature of the global vehicle industry, including the performance of the global aftermarket sector and the impact of vehicle parts longer product lives;

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costs related to product warranties and other customer satisfaction actions;

the cost and outcome of existing and any future claims or legal proceedings, including, but not limited to, claims or proceedings against us or our customers relating to product performance, product safety or intellectual property rights;

the failure or breach of our information technology systems, including the consequences of any misappropriation, exposure or corruption of sensitive information stored on such systems and the interruption to our business that such failure or breach may cause;

the impact of consolidation among vehicle parts suppliers and customers on our ability to compete;

changes in distribution channels or competitive conditions in the markets and countries where we operate, including the impact of changes in distribution channels for aftermarket products on our ability to increase or maintain aftermarket sales;

economic, exchange rate and political conditions in the countries where we operate or sell our products;

customer acceptance of new products;

new technologies that reduce the demand for certain of our products or otherwise render them obsolete;

our ability to realize our business strategy of improving operating performance;

our ability to successfully integrate any acquisitions that we complete and effectively manage our joint ventures and other third-party relationships;

changes by the Financial Accounting Standards Board or the Securities and Exchange Commission of authoritative generally accepted accounting principles or policies;

changes in accounting estimates and assumptions, including changes based on additional information;

any changes by the International Organization for Standardization (ISO) or other such committees in their certification protocols for processes and products, which may have the effect of delaying or hindering our ability to bring new products to market;

the impact of changes in and compliance with laws and regulations, including: environmental laws and regulations, which may result in our incurrence of environmental liabilities in excess of the amount reserved; and any changes to the timing of the funding requirements for our pension and other postretirement benefit liabilities;

the potential impairment in the carrying value of our long-lived assets and goodwill or our deferred tax assets;

potential volatility in our effective tax rate;

natural disasters, such as the 2011 earthquake in Japan and flooding in Thailand, and any resultant disruptions in the supply or production of goods or services to us or by us or in demand by our customers;

acts of war and/or terrorism, as well as actions taken or to be taken by the United States and other governments as a result of further acts or threats of terrorism, and the impact of these acts on economic, financial and social conditions in the countries where we operate; and

the timing and occurrence (or non-occurrence) of other transactions, events and circumstances which may be beyond our control.

The risks included here are not exhaustive. Refer to Part I, Item 1A Risk Factors of this report for further discussion regarding our exposure to risks. Additionally, new risk factors emerge from time to time and it is not possible for us to predict all such risk factors, nor to assess the impact such risk factors might have on our business or the extent to which any factor or combination of factors may cause actual results to differ materially from those contained in any forward-looking statements. Given these risks and uncertainties, investors should not place undue reliance on forward-looking statements as a prediction of actual results.

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PART I

ITEM 1. BUSINESS.

TENNECO INC.

General

Our company, Tenneco Inc., is one of the world s largest producers of emission control and ride control products and systems for light, commercial and specialty vehicle applications. Our company serves both original equipment vehicle manufacturers (OEMs) and the repair and replacement markets, or aftermarket, worldwide. As used herein, the term Tenneco, we, us, our, or the Company refers to Tenneco Inc. and i consolidated subsidiaries.

We were incorporated in Delaware in 1996. In 2005, we changed our name from Tenneco Automotive Inc. to Tenneco Inc. The name Tenneco better represents the expanding number of markets we serve through our commercial and specialty vehicle businesses. Building a stronger presence in these markets complements our core businesses of supplying ride control and emission control products and systems for light and commercial vehicles to original equipment and aftermarket customers worldwide. Our common stock is traded on the New York Stock Exchange (NYSE) and the Chicago Stock Exchange under the symbol TEN.

Corporate Governance and Available Information

We have established a comprehensive approach to corporate governance for the purpose of defining responsibilities, setting high standards of professional and personal conduct and assuring compliance with such responsibilities and standards. As part of its annual review process, the Board of Directors monitors developments in the area of corporate governance. Listed below are some of the key elements of our corporate governance policies.

For more information about these matters, see our definitive Proxy Statement for the Annual Meeting of Stockholders to be held on May 15, 2013.

Independence of Directors

Seven of our nine directors are independent under the NYSE listing standards.

Independent directors are scheduled to meet separately in executive session after every regularly scheduled Board of Directors meeting.

We have a lead independent director, Mr. Paul T. Stecko.

Audit Committee

All members meet the independence standards for audit committee membership under the NYSE listing standards and applicable Securities and Exchange Commission (SEC) rules.

Two members of the Audit Committee, Mr. Dennis J. Letham and Mr. Thomas C. Freyman, have been designated by the Board as audit committee financial experts, as defined in the SEC rules, and all members of the Audit Committee satisfy the NYSE s financial literacy requirements.

The Audit Committee operates under a written charter which governs its duties and responsibilities, including its sole authority to appoint, review, evaluate and replace our independent auditors.

The Audit Committee has adopted policies and procedures governing the pre-approval of all audit, audit-related, tax and other services provided by our independent auditors.

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Compensation/Nominating/Governance Committee

All members meet the independence standards for compensation and nominating committee membership under the NYSE listing standards.

The Compensation/Nominating/Governance Committee operates under a written charter that governs its duties and responsibilities, including the responsibility for executive compensation.

We have an Executive Compensation Subcommittee which has the responsibility to consider and approve compensation for our executive officers which is intended to qualify as performance based compensation under Section 162(m) of the Internal Revenue Code.

Corporate Governance Principles

We have adopted Corporate Governance Principles, including qualification and independence standards for directors.

Stock Ownership Guidelines

We have adopted Stock Ownership Guidelines to align the interests of our executives with the interests of stockholders and promote our commitment to sound corporate governance.

The Stock Ownership Guidelines apply to the independent directors, the Chairman and Chief Executive Officer, and all other officers with a rank of Vice President or higher.

Communication with Directors

The Audit Committee has established a process for confidential and anonymous submission by our employees, as well as submissions by other interested parties, regarding questionable accounting or auditing matters.

Additionally, the Board of Directors has established a process for stockholders to communicate with the Board of Directors, as a whole, or any independent director.

Codes of Business Conduct and Ethics

We have adopted a Code of Ethical Conduct for Financial Managers, which applies to our Chief Executive Officer, Chief Operating Officer, Chief Financial Officer, Controller and other key financial managers. This code is filed as Exhibit 14 to this report.

We also operate under a Code of Conduct that applies to all directors, officers and employees and includes provisions ranging from restrictions on gifts to conflicts of interests. All salaried employees are required to affirm annually their acceptance of, and compliance with, the Code of Conduct.

Related Party Transactions Policy

We have adopted a Policy and Procedure for Transactions With Related Persons, under which our Board of Directors must generally pre-approve transactions involving more than $120,000 with our directors, executive officers, five percent or greater stockholders and their immediate family members.

Equity Award Policy

We have adopted a written policy for all issuances by our company of compensatory awards in the form of our common stock or any derivative of the common stock.

Personal Loans to Executive Officers and Directors

We comply with and operate in a manner consistent with the legislation outlawing extensions of credit in the form of a personal loan to or for our directors or executive officers.

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Our Internet address is *http://www.tenneco.com*. We make our proxy statements, annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports, as filed with or furnished to the SEC, available free of charge on our Internet website as soon as reasonably practicable after submission to the SEC. Securities ownership reports on Forms 3, 4 and 5 are also available free of charge on our website as soon as reasonably practicable after submission to the SEC. The contents of our website are not, however, a part of this report. All such statements and reports can also be found at the internet site maintained by the SEC at *http://www.sec.gov*.

Our Audit Committee, Compensation/Nominating/Governance Committee and Executive Compensation Subcommittee Charters, Corporate Governance Principles, Stock Ownership Guidelines, Audit Committee policy regarding accounting complaints, Code of Ethical Conduct for Financial Managers, Code of Conduct, Policy and Procedures for Transactions with Related Persons, Equity Award Policy, policy for communicating with the Board of Directors and Audit Committee policy regarding the pre-approval of audit, non-audit, tax and other services are available free of charge on our website at *www.tenneco.com.* In addition, we will make a copy of any of these documents available to any person, without charge, upon written request to Tenneco Inc., 500 North Field Drive, Lake Forest, Illinois 60045, Attn: General Counsel. We intend to satisfy the disclosure requirements under Item 5.05 of Form 8-K and applicable NYSE rules regarding amendments to, or waivers of, our Code of Ethical Conduct for Financial Managers and Code of Conduct by posting this information on our website at *www.tenneco.com.*

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CONTRIBUTIONS OF MAJOR BUSINESSES

For information concerning our operating segments, geographic areas and major products or groups of products, see Note 11 to the consolidated financial statements of Tenneco Inc. included in Item 8. The following tables summarize for each of our reportable segments for the periods indicated: (i) net sales and operating revenues; (ii) earnings before interest expense, income taxes and noncontrolling interests (EBIT); and (iii) expenditures for plant, property and equipment. See also Management s Discussion and Analysis of Financial Condition and Results of Operations included in Item 7 for information about certain costs and charges included in our results; and management s announced organizational changes on February 14, 2013 that will align our business along product lines, effective with the first quarter of 2013, such that our three prior geographic reportable segments have each been split into two product segments (NA Clean Air, NA Ride Performance, ESI Clean Air, ESI Ride Performance, AP Clean Air and AP Ride Performance).

Net Sales and Operating Revenues:

	2012		2011		2010	
	(Dollar Amounts in Millions)					
North America	$ 3,735	51%	$ 3,426	48%	$ 2,832	48%
Europe, South America and India	2,921	40%	3,169	44%	2,594	44%
Asia Pacific	908	12%	804	11%	698	12%
Intergroup sales	(201)	(3)%	(194)	(3)%	(187)	(4)%
Total	$ 7,363	100%	$ 7,205	100%	$ 5,937	100%

EBIT:

	2012		2011		2010	
	(Dollar Amounts in Millions)					
North America	$ 288	67%	$ 216	57%	$ 155	55%
Europe, South America and India	71	17%	125	33%	76	27%
Asia Pacific	69	16%	38	10%	50	18%
Total	$ 428	100%	$ 379	100%	$ 281	100%

Expenditures for Plant, Property and Equipment:

	2012		2011		2010	
	(Dollar Amounts in Millions)					
North America	$ 122	46%	$ 88	40%	$ 59	38%
Europe, South America and India	88	34%	95	44%	66	43%
Asia Pacific	53	20%	35	16%	29	19%
Total	$ 263	100%	$ 218	100%	$ 154	100%

Interest expense, income taxes, and noncontrolling interests that were not allocated to our operating segments are:

	2012	2011	2010
		(Millions)	
Interest expense (net of interest capitalized)	$ 105	$ 108	$ 149

Income tax expense	19	88	69
Noncontrolling interests	29	26	24

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DESCRIPTION OF OUR BUSINESS

We design, manufacture and sell emission control and ride control systems and products for light, commercial and specialty vehicle applications, and generated revenues of $7.4 billion in 2012. We serve both original equipment manufacturers (OEMs) and replacement markets worldwide through leading brands, including Monroe®, Rancho®, Clevite® Elastomers, Marzocchi®, Axios™, Kinetic™, and Fric-Rot™ ride control products and Walker®, Fonos™, DynoMax®, Thrush™, and Lukey™ emission control products.

As a parts supplier, we produce individual component parts for vehicles as well as groups of components that are combined as modules or systems within vehicles. These parts, modules and systems are sold globally to most leading OEMs, commercial vehicle engine manufacturers, and aftermarket distribution channels.

Overview of Vehicle Parts Industry and Adjacent Markets

The vehicle parts industry is generally separated into two categories: (1) original equipment or OE in which parts are sold in large quantities directly for use by OEMs and commercial vehicle engine manufacturers; and (2) aftermarket in which replacement parts are sold in varying quantities to wholesalers, retailers and installers. In the OE category, parts suppliers are generally divided into tiers Tier 1 suppliers that provide their products directly to OEMs, and Tier 2 or Tier 3 suppliers that sell their products principally to other suppliers for combination into the other suppliers own product offerings.

Light vehicles are comprised of: (1) passenger cars and (2) light trucks which include sport-utility vehicles (SUV), crossover vehicles (CUV), pick-up trucks, vans and multi-purpose passenger vehicles. Demand for OE light vehicle automotive parts is generally a function of the number of new vehicles produced, which in turn is a function of prevailing economic conditions and consumer preferences. In 2012, the number of light vehicles produced by region was 15.4 million in North America, 29.0 million in Europe, South America and India and 37.1 million in Asia Pacific. Worldwide light vehicle production is forecasted to increase to 82.8 million units in 2013 from approximately 81.5 million units in 2012, according to IHS Automotive. Although OE demand is tied to planned vehicle production, parts suppliers also have the opportunity to grow revenues by increasing their product content per vehicle, by further expanding business with existing customers and by serving new customers in existing or new markets. Companies with a global presence and advanced technology, engineering, manufacturing and support capabilities, such as our Company, are better positioned to take advantage of these opportunities.

The increase and expansion in mandated diesel emission control and noise regulations or standards in North America, Europe, China, Japan, Brazil, Russia and India have enabled suppliers such as us to serve customers beyond light vehicles. Certain parts suppliers that have traditionally supplied the automotive industry are now developing and producing components and integrated systems for commercial and specialty applications, such as medium- and heavy-duty trucks, buses, off-road equipment, and locomotive/marine applications as well as the recreational segment for two-wheelers and all-terrain vehicles. Tenneco foresees this product application diversification as a source of future growth.

Demand for aftermarket products is driven by general economic conditions, the number of vehicles in operation, the age and distance driven of the vehicle fleet, and the average useful life and quality of vehicle parts. Although more vehicles are on the road than ever before, the aftermarket has experienced longer replacement cycles due to the improved quality of OE parts and increases in the average useful life of automotive parts as a result of technological innovation. Suppliers are increasingly being required to deliver innovative aftermarket products to drive increased aftermarket demand. Global economic downturns generally impact aftermarket sales less adversely than OE sales, as customers forego new vehicle purchases and keep their vehicles longer, thereby increasing demand for repair and maintenance services.

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Industry Trends

As the dynamics of the customers we serve change, so do the roles, responsibilities and relationships of the participants. Key trends that we believe are affecting parts suppliers include:

General Economic Factors and Production Levels

As a result of the lack of consumer confidence caused by the global economic downturn and credit market crisis, the industry experienced a rapid decline in light vehicle purchases in 2008 and the first half of 2009. The industry began to recover during the second half of 2009 when OE light vehicle production began to stabilize and then strengthen, as inventory levels began to be replenished, tracking more closely to vehicle sales. In 2010, light vehicle production continued to strengthen, evidenced by North America, Asia Pacific and Europe light vehicle production volumes increasing 39 percent, 30 percent and 16 percent, respectively in 2010 as compared to 2009. Production volumes continued to strengthen in 2011 in most geographic regions in which we operate. For example, production volumes in North America and Europe increased 10 percent and five percent, respectively, in 2011. The Asia Pacific region experienced a decline of two percent in production volumes as a result of a continued decline in industry production in Australia, and lower OE volumes in Thailand and Japan as a result of the flooding and earthquakes experienced in those regions in 2011. For 2012, light vehicle production continued to improve from recent years in some of the geographic regions in which we operate, but declined markedly in Europe. Light vehicle production was up 17 percent in North America, though not to levels seen in recent history, and six percent in China. European light vehicle production was down five percent from 2011 levels.

Increasing Environmental Standards

OE manufacturers and their parts suppliers are designing and developing products to respond to increasingly stringent environmental requirements, growth in the diesel applications and increased demand for better fuel economy. Government regulations adopted over the past decade require substantial reductions in vehicle tailpipe emissions, longer warranties on parts of a vehicle s pollution control equipment and additional equipment to control fuel vapor emissions. Manufacturers are responding with new technologies for gasoline- and diesel-fueled vehicles that minimize pollution and improve fuel economy.

As a leading supplier of emission control systems with strong technical capabilities, we are well positioned to benefit from the more rigorous environmental standards being adopted around the world. We continue to expand our investment in regions such as China, India, Thailand and Japan to capitalize on growing demand for environmentally friendly solutions for light and commercial vehicles driven by environmental regulations in these regions.

To meet stricter air quality regulations, we have developed and sold diesel particulate filters (DPFs) for the Audi A4 and BMW 1 series passenger cars in Europe and for GM Duramax engine applications, the Ford Super Duty, the Chrysler Ram, Navistar medium-duty trucks in North America, and off-road applications for Caterpillar and John Deere in North America and Europe. These particulate filters, coupled with converters, reduce emissions of particulate matter by up to 90 percent and of nitrogen oxide by up to 85 percent. In addition, we have development and production contracts for our selective catalytic reduction (SCR) systems with light and medium-duty truck manufacturers in North America, South America, Europe and Asia. In China, we have development contracts for complete turnkey SCR systems, including the urea dosing technology acquired in 2007, now sold globally under the name XNOx™. Customers have also purchased prototypes of our hydrocarbon injector, a product acquired in 2007 alongside our XNOx™ technology, which is used to inject hydrocarbons directly into the exhaust system to regenerate diesel particulate filters and Lean NOx Traps. New regulations in the U.S. and European markets, which require reductions in carbon dioxide emissions and improvements in fuel economy, are creating increased demand for our fabricated manifolds, maniverters, integrated turbocharger/manifold modules, electronic exhaust valves, and lightweight components. Lastly, for various off-road customers, we have developed emission aftertreatment systems designed to meet Tier 4 interim and Tier 4 final environmental regulations. Both on-road and off-road customers are embracing the concept of turnkey aftertreatment systems, leading to our having developed and sold aftertreatment electronic control units (ECUs) as well as the related control software.

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Increasing Technologically Sophisticated Content

As consumers continue to demand vehicles with improved performance, safety and functionality at competitive prices, the components and systems in these vehicles are becoming technologically more advanced and sophisticated. Mechanical functions are being replaced with electronics; and mechanical and electronic devices are being integrated into single systems. More stringent emission and other regulatory standards are increasing the complexity of the systems as well.

To remain competitive as a parts and systems supplier, we invest in engineering, research and development, spending $126 million in 2012, $133 million in 2011, and $117 million in 2010, net of customer reimbursements. Such expenses reimbursed by our customers totaled $159 million in 2012, $119 million in 2011, and $110 million in 2010. In addition, we build prototypes and incur other costs on behalf of our customers to further our technological capabilities. We also fund and sponsor university and other independent research to advance our emission control and ride control development.

By investing in technology, we can expand our product offerings and penetrate new markets. For example, we developed DPFs which were first sold in Europe and then offered in North America. Since these original innovations, we have developed T.R.U.E-Clean® with our partners, a product used to regenerate DPFs. We have also built prototypes of urea SCR systems for locomotive and marine engines. We expanded our suite of NOx-reduction technologies, developing prototypes of SCR systems using gaseous ammonia, absorbed on a solid salt, as the reductant or a hydrocarbon lean NOx catalyst (HC-LNC for NOx reduction) that relies on hydrocarbons, ethanol, or other reductants instead of urea. For example, during our period of exclusive development with General Electric (GE), we have developed a commercially viable hydrocarbon lean NOx catalyst system which utilizes GE s proprietary silver based catalyst formulation and have attracted multiple customers in Brazil testing this system using ethanol as the reductant. We successfully developed and sold fabricated manifolds, used only on gasoline engines, into the passenger car diesel segment. Recently, we developed our first prototype aftertreatment system for large engines, up to 4500 horsepower, used as line haul locomotives. On the ride control side of our business, we co-developed with Öhlins Racing AB a continuously controlled electronic suspension system (CES) now offered by Volvo, Audi, Ford, VW, and Mercedes Benz and BMW on their vehicles.

Enhanced Vehicle Safety and Handling

The European Union and North America have made electronic stability control (ESC) systems mandatory for all passenger cars and commercial vehicles. To serve the needs of their customers and meet government mandates, OEMs are seeking parts suppliers that invest in new technologies, capabilities and products that advance vehicle safety, such as roll-over protection systems, computerized electronic suspension, and safer, more durable materials. Those suppliers able to offer such innovative products and technologies have a distinct competitive advantage.

Tenneco co-developed with Öhlins Racing AB, CES, and offers Kinetic® ride control technology to improve vehicle stability and handling. We also develop other advanced suspension systems like Actively Controlled Car (ACOCAR)™ that are being designed to provide improved vehicle safety and control. Further, we supply premium Monroe® branded brakes to further complement our product offerings in the aftermarket space. In addition to these efforts, we continue to promote the Safety Triangle™ of Steering-Stopping-Stability to educate consumers about the detrimental effect of worn shock absorbers on vehicle steering and stopping distances.

Outsourcing and Demand for Systems and Modules

OEMs have steadily outsourced more of the design and manufacturing of vehicle parts and systems to simplify the assembly process, lower costs and reduce development times. Furthermore, they have demanded

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fully integrated, functional systems made possible with the development of advanced electronics in addition to innovative, individual vehicle components and parts that may not readily interface together. As a result, successful parts suppliers offer a variety of component products individually as well as integrated modules and systems:

Modules are groups of component parts arranged in close physical proximity to each other within a vehicle. Modules are often assembled by the supplier and shipped to the OEM for installation in a vehicle as a unit. Integrated shock and spring units, seats, instrument panels, axles and door panels are examples.

Systems are groups of component parts located throughout a vehicle which operate together to provide a specific vehicle functionality. Emission control systems, anti-lock braking systems, safety restraint systems, roll control systems and powertrain systems are examples.

This shift towards fully integrated systems created the role of the Tier 1 systems integrator, a supplier responsible for executing a broad array of activities, including design, development, engineering, and testing of component parts, systems and modules. As an established Tier 1 supplier, we have produced modules and systems for various vehicle platforms produced worldwide, supplying ride control modules for the Chevrolet Silverado, GMC Sierra, Chevrolet Malibu, Chevrolet Impala and Chevrolet Cruze and emission control systems for the Ford Super Duty, Ford Focus, Chevrolet Silverado, GMC Sierra, Chevrolet Malibu, Opel Astra, and VW Golf. In addition, we continue to design other modules and systems for platforms yet to be introduced to the global marketplace.

Global Reach of OE Customers

Changing market dynamics are driving OE manufacturers and their parts suppliers to expand their global reach:

Growing Importance of Developing Markets: Because the North American and Western European automotive regions are mature, OEMs are increasingly focusing on developing markets for growth opportunities, particularly Brazil, Russia, India and China, collectively known as the BRIC economies, as well as Thailand. As OEMs have penetrated new regions, growth opportunities for suppliers have emerged.

Governmental Tariffs and Local Parts Requirements: Many governments around the world require vehicles sold within their country to contain specified percentages of locally produced parts. Additionally, some governments place high tariffs on imported parts.

Location of Production Closer to End Markets: As OE manufacturers and parts suppliers have shifted production globally to be closer to their end markets, suppliers have expanded their reach, capturing sales in developing markets and taking advantage of relatively lower labor costs.

Because of these trends, OE manufacturers are increasingly seeking suppliers capable of supporting vehicle platforms on a global basis. They want suppliers like Tenneco with design, production, engineering and logistics capabilities that can be accessed not just in North America and Europe but also in the developing markets.

Global Rationalization of OE Vehicle Platforms

OE manufacturers continue to standardize on global platforms, designing basic mechanical structures that are suitable for a number of similar vehicle models and able to accommodate different features for more than one region. Light vehicle platforms of over one million units are expected to grow from 48 percent to 54 percent of global OE production from 2012 to 2017.

With such global platforms, OE manufacturers realize significant economies of scale by limiting variations in items such as steering columns, brake systems, transmissions, axles, exhaust systems, support structures and power window and door lock mechanisms. The shift towards standardization can also benefit automotive parts suppliers. They can experience greater economies of scale, lower material costs, and reduced development costs.

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Extended Product Life of Automotive Parts

The average useful life of automotive parts, both OE and replacement, has steadily increased in recent years due to technological innovations including longer-lasting materials. As a result, although there are more vehicles on the road than ever before, the global aftermarket has not kept pace with that growth. Accordingly, aftermarket suppliers have focused on reducing costs and providing product differentiation through advanced technology and recognized brand names. With our long history of technological innovation, strong brands and operational effectiveness, we believe we are well positioned to leverage our products and technology.

Changing Aftermarket Distribution Channels

From 2001 to 2011, the number of retail outlets supplying aftermarket parts increased significantly while the number of jobber stores declined nearly 10 percent in the U.S. Major aftermarket retailers, such as AutoZone and Advance Auto Parts, attempted to expand their commercial sales by selling directly to parts installers, which had historically purchased from their local warehouse distributors and jobbers, as they continued to market to individual retail consumers. Retailers now have the option to offer premium brands which are often preferred by their commercial customers in addition to standard products which are often selected by their individual store buyers. We are well positioned to respond to this trend because we produce high-quality, premium brands and products. As distribution channels continue to consolidate, both wholesalers and retailers can realize the benefits of sourcing products from a supplier like Tenneco with our breadth of suspension and emissions control products.

Analysis of Revenues

The table below provides, for each of the years 2010 through 2012, information relating to our net sales and operating revenues, by primary product lines and customer categories.

	Net Sales Year Ended December 31,		
	2012	2011	2010
	(Millions)		
Emission Control Products & Systems			
Aftermarket	$ 318	$ 351	$ 318
Original Equipment			
OE Value-add	2,948	2,732	2,223
OE Substrate(1)	1,660	1,678	1,284
	4,608	4,410	3,507
	4,926	4,761	3,825
Ride Control Products & Systems			
Aftermarket	944	944	851
Original Equipment	1,493	1,500	1,261
	2,437	2,444	2,112
Total Revenues	$ 7,363	$ 7,205	$ 5,937

(1) See Management s Discussion and Analysis of Financial Condition and Results of Operations included in Item 7 for a discussion of substrate sales.

Brands

In each of our operating segments, we manufacture and market products with leading brand names. Monroe® ride control products and Walker® exhaust products are two of the most recognized brands in the industry. We emphasize product value differentiation with brands such as Monroe®, Kinetic™ and Fric-Rot™

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(ride control products), XNOx™ (emission control products), DynoMax®, Thrush™ and Lukey™ (performance exhaust products), Rancho® (ride control products for high performance light trucks), Clevite® Elastomers and Axios™ (noise, vibration and harshness control components), and Marzocchi® (forks and suspensions for two-wheelers).

Customers

We have developed long-standing business relationships with our customers around the world. In each of our operating segments, we work collaboratively with our customers in all stages of production, including design, development, component sourcing, quality assurance, manufacturing and delivery. With a diverse mix of OE and aftermarket products and facilities in major markets worldwide, we believe we are well positioned to meet customer needs. We believe we have a strong, established reputation with customers for providing high-quality products at competitive prices, as well as for timely delivery and customer service.

In 2012, we served more than 63 different OEMs and commercial vehicle engine manufacturers worldwide, and our products were included on all ten of the top 10 passenger car models produced for sale in Europe and eight of the top 10 light truck models produced for sale in North America for 2012.

During 2012, our OEM and commercial vehicle engine manufacturer customers included:

North America	Europe	Asia
AM General	AvtoVAZ	Beijing Automotive
Caterpillar	BMW	BMW
Club Car	Caterpillar	Brilliance Automobile
Daimler AG	Daimler AG	Changan Automotive
E-Z Go	Deutz AG	China National Heavy-Duty Truck Group
Fiat-Chrysler	Ducati Motor	Daimler AG
Fiat Industrial (CNH)	Fiat-Chrysler	Dongfeng Motor
Ford Motor	Fiat Industrial (Iveco)	

General Motors

Harley-Davidson

Honda Motors

Hyundai Motor

John Deere

Navistar International

Nissan Motor

Oshkosh Truck

Paccar

Toyota Motor

Volkswagen Group

Volvo Global Truck

Ford Motor

Geely Automobile

General Motors

Harley-Davidson

John Deere

Mazda Motor

McLaren Automotive

Nissan Motor

Paccar

PSA Peugeot Citroen

Renault

Suzuki Motor

Tata Motors

Ducati Motor

First Auto Works

Ford Motor

Geely Automobile

General Motors

Great Wall Motor

Hyundai Motor

Isuzu Motors

Jiangling Motors

Kubota

Nissan Motor

SAIC Motor

Suzuki Motor

Volkswagen Group

Toyota Motor

Weichai Power

Volkswagen Group

Volvo Global Truck

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Australia
Club Car
Fiat Industrial (Iveco)
Ford Motor
General Motors
Toyota Motor

South America
Daimler AG
Fiat-Chrysler
Fiat Industrial (Iveco)
Ford Motor
General Motors
MAN SE
Navistar International
Nissan Motor
PSA Peugeot Citroen
Renault
Scania
Toyota Motor
Volkswagen Group
Volvo Global Truck

India
Club Car
E-Z Go
Ford Motor
General Motors
Isuzu Motor
Mahindra & Mahindra
Nissan Motor
Suzuki Motor
Tata Motors
Toyota Motor
Volkswagen Group

The following customers accounted for 10 percent or more of our net sales in any of the last three years.

Customer	2012	2011	2010
General Motors	17%	19%	19%
Ford Motor	15%	15%	13%

During 2012, our aftermarket customers were comprised of full-line and specialty warehouse distributors, retailers, jobbers, installer chains and car dealers. These customers included National Auto Parts Association (NAPA), Advance Auto Parts, Uni-Select, and O Reilly Automotive in North America, Temot Autoteile GmbH, Autodistribution International, Group Auto Union, Auto Teile Ring and AP United in Europe and Rede Presidente in South America. We believe our revenue mix is balanced, with our top 10 aftermarket customers accounting for 52 percent of our net aftermarket sales and our aftermarket sales representing 17 percent of our total net sales in 2012.

Competition

We operate in highly competitive markets. Customer loyalty is a key element of competition in these markets and is developed through long-standing relationships, customer service, high quality value-added products and timely delivery. Product pricing and services provided are other important competitive factors.

As a supplier of OE and aftermarket parts, we compete with the vehicle manufacturers, some of which are also customers of ours, and numerous independent suppliers. For OE sales, we believe that we rank among the top two suppliers for certain key applications we service throughout most regions in the world for both emission control and ride control products and systems. In the aftermarket, we believe that we are the leader in supplying emission control and ride control products for light vehicles for the key applications we serve throughout the world.

Seasonality

Our OE and aftermarket businesses are somewhat seasonal. OE production is historically higher in the first half of the year compared to the second half. It decreases in the third quarter due to OE plant shutdowns for model changeovers and European holidays, and softens further in the fourth quarter due to reduced production during the holiday season and the winter months in North America and Europe generally. Our aftermarket operations, also affected by seasonality, experience relatively higher demand during the spring as vehicle owners prepare for the summer driving season.

While seasonality does impact our business, actual results may vary from the above trends due to global and local economic dynamics as well as industry-specific platform launches and other production-related events.

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During periods of economic recession, OE sales traditionally decline due to reduced consumer demand for automobiles and other capital goods. Aftermarket sales tend not to be as adversely affected during periods of economic downturn, as consumers forego new vehicle purchases and keep their vehicles longer, thereby increasing demand for repair and maintenance services. By participating in both the OE and aftermarket segments, we generally see a smaller revenue decline during economic downturns than the overall change in OE production.

Emission Control Systems

Vehicle emission control products and systems play a critical role in safely conveying noxious exhaust gases away from the passenger compartment and reducing the level of pollutants and engine exhaust noise emitted to acceptable levels. Precise engineering of the exhaust system which extend from the manifold that connects an engine s exhaust ports to an exhaust pipe, to the catalytic converter that eliminates pollutants from the exhaust, and to the muffler that modulates noise and emissions leads to a pleasant, tuned engine sound, reduced pollutants and optimized engine performance.

We design, manufacture and distribute a variety of products and systems designed to reduce pollution and optimize engine performance, acoustic tuning and weight, including the following:

Catalytic converters and diesel oxidation catalysts Devices consisting of a substrate coated with precious metals enclosed in a steel casing used to reduce harmful gaseous emissions such as carbon monoxide;

Diesel Particulate Filters (DPFs) Devices to capture and regenerate particulate matter emitted from diesel engines;

Burner systems Devices which actively combust fuel and air inside the exhaust system to create extra heat for DPF regeneration, or to improve the efficiency of SCR systems;

Lean NOx traps Devices which reduce nitrogen oxide (NOx) emissions from diesel powertrains using capture and store technology;

Hydrocarbon vaporizers and injectors Devices to add fuel to a diesel exhaust system in order to regenerate diesel particulate filters or Lean NOx traps;

Selective Catalytic Reduction (SCR) systems Devices which reduce NOx emissions from diesel powertrains using injected reductants such as Verband der Automobil Industrie e.V. (AdBlue)™ or Diesel Exhaust Fluid (DEF);

Alternative NOx reduction technologies Devices which reduce NOx emissions from diesel powertrains, by using alternative reductants such as diesel fuel, E85 (85% ethanol, 15% gasoline), or solid forms of ammonia;

Mufflers and resonators Devices to provide noise elimination and acoustic tuning;

Fabricated Exhaust manifolds Components that collect gases from individual cylinders of a vehicle s engine and direct them into a single exhaust pipe; fabricated manifolds can form the core of an emissions module that includes an integrated catalytic converter (maniverter) and/or turbocharger;

Pipes Utilized to connect various parts of both the hot and cold ends of an exhaust system;

Hydroformed assemblies Forms in various geometric shapes, such as Y-pipes or T-pipes, which provide optimization in both design and installation as compared to conventional pipes;

Hangers and isolators Used for system installation and elimination of noise and vibration, and for the improvement of useful life; and

Aftertreatment control units Computerized electronic devices that utilize embedded software to regulate the performance of active aftertreatment systems, including the control of sensors, injectors, vaporizers, pumps, heaters, valves, actuators, wiring harnesses, relays and other mechatronic components.

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For the catalytic converters we sell, we either buy completed catalytic converters systems or procure substrates coated with precious metals which we incorporate into full systems. We obtain these components and systems from third parties or directly from OE manufacturers, often at the OEM s direction. See Item 7, Management s Discussion and Analysis of Financial Condition and Results of Operations for more information on our sales of these products.

We supply our emission control offerings to 28 light vehicle manufacturers for use on over 220 light vehicle models, including eight of the top 10 passenger car models produced in Europe and seven of the top 10 light truck models produced in North America for 2012. We also supply emission control products to 19 manufacturers of commercial vehicles and engines, and specialty vehicles including Harley-Davidson, BMW Motorcycle, Daimler Trucks, Navistar, Caterpillar, John Deere, Deutz and Weichai Power.

We entered the emission control market in 1967 with the acquisition of Walker Manufacturing Company, which was founded in 1888, and became one of Europe s leading OE emission control systems suppliers with the acquisition of Heinrich Gillet GmbH & Co. in 1994. Throughout this document, the term Walker refers to our subsidiaries and affiliates that produce emission control products and systems.

In the aftermarket, we manufacture, market and distribute replacement mufflers for virtually all North American, European, and Asian light vehicle models under brand names including Quiet-Flow® and Tru-Fit® in addition to offering a variety of other related products such as pipes and catalytic converters (Walker® Perfection). We also serve the specialty exhaust aftermarket with offerings that include Mega-Flow® exhaust products for heavy-duty vehicle applications and DynoMax® high performance exhaust products. We continue to emphasize product-value differentiation with other aftermarket brands such as Walker®, Thrush® and Fonos™ .

Ride Control Systems

Superior ride control is governed by a vehicle s suspension system, including shock absorbers and struts. Shock absorbers and struts maintain the vertical loads placed on vehicle tires, helping keep the tires in contact with the road. Vehicle steering, braking, acceleration and safety depend on maintaining contact between the tires and the road. Worn shocks and struts can allow excess transfer of the vehicle s weight either from side to side which is called roll; from front to rear which is called pitch; or up and down, which is called bounce. Shock absorbers and struts are designed to control the vertical loads placed on tires and thereby provide resistance to vehicle roll, pitch and bounce. They function as safety components and provide a comfortable ride.

We design, manufacture and distribute a variety of ride control products and systems including:

Shock absorbers A broad range of mechanical shock absorbers and related components for light- and heavy-duty vehicles, including twin-tube and monotube shock absorbers;

Struts A complete line of struts and strut assemblies for light vehicles;

Vibration control components (Clevite® Elastomers, Axios) Generally, rubber-to-metal bushings and mountings to reduce vibration between metal parts of a vehicle. Offerings include a broad range of suspension arms, rods and links for light- and heavy-duty vehicles;

Kinetic® suspension technology A suite of roll-control and nearly equal wheel-loading systems ranging from simple mechanical systems to complex hydraulic systems featuring proprietary and patented technology. The Kinetic® suspension technology was incorporated on the Citroën World Rally Car that was featured in the World Rally Championship of 2003, 2004 and 2005. Additionally, the Kinetic® suspension technology was offered on the Lexus GX 470 sport utility vehicle which resulted in our winning the PACE Award;

Advanced suspension systems Shock absorbers and suspension systems that electronically adjust a vehicle s performance based on inputs such as steering and braking; and

Other We also offer other ride control products such as load assist products, springs, steering stabilizers, adjustable suspension systems, suspension kits and modular assemblies.

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We supply our ride control offerings to 21 light vehicle manufacturers for use on over 155 light vehicle models, including eight of the top 10 passenger car models produced in Europe and eight of the top 10 light truck models produced in North America for 2012. We also supply ride control products and systems to over 40 commercial and specialty vehicle manufacturers including Volvo Truck, Scania, Navistar, Daimler Trucks and PACCAR.

In the ride control aftermarket, we manufacture, market and distribute replacement shock absorbers for virtually all North American, European and Asian light vehicle models under several brand names including Gas-Matic®, Sensa-Trac®, Monroe Reflex® and Monroe Adventure™, Quick-Strut®, as well as Clevite® Elastomers for elastomeric vibration control components. We also sell ride control offerings for the heavy-duty, off-road and specialty aftermarket, such as our Gas-Magnum® shock absorbers for the North American heavy-duty category and Marzocchi front forks for two-wheelers.

We entered the ride control product line in 1977 with the acquisition of Monroe Auto Equipment Company, which was founded in 1916, and introduced the world s first modern tubular shock absorber in 1930. When the term Monroe is used in this document it refers to our subsidiaries and affiliates that produce ride control products and systems.

Financial Information About Geographic Areas

Refer to Note 11 of the consolidated financial statements of Tenneco Inc. included in Item 8 of this report for financial information about geographic areas.

Sales, Marketing and Distribution

We have separate and distinct sales and marketing efforts for our OE and aftermarket businesses.

For OE sales, our sales and marketing team is an integrated group of professionals, including skilled engineers and program managers, who are organized by customer and product type (e.g., ride control and emission control). Our sales and marketing team provides the appropriate mix of operational and technical expertise needed to interface successfully with the OEMs. Our new business capture process involves working closely with the OEM platform engineering and purchasing teams. Bidding on OE automotive platforms typically encompasses many months of engineering and business development activity. Throughout the process, our sales team, program managers and product engineers assist the OE customer in defining the project s technical and business requirements. A normal part of the process includes our engineering and sales personnel working on customers integrated product teams, and assisting with developing component/system specifications and test procedures. Given that the OE business involves long-term production contracts awarded on a platform-by-platform basis, our strategy is to leverage our engineering expertise and strong customer relationships to target and win new business and increase operating margins.

For aftermarket sales and marketing, our sales force is generally organized by customer and region and covers multiple product lines. We sell aftermarket products through four primary channels of distribution: (1) the traditional three-step distribution system of full-line warehouse distributors, jobbers and installers; (2) the specialty two-step distribution system of specialty warehouse distributors that carry only specified automotive product groups and installers; (3) direct sales to retailers; and (4) direct sales to installer chains. Our aftermarket sales and marketing representatives cover all levels of the distribution channel, stimulating interest in our products and helping our products move through the distribution system. Also, to generate demand for our products from end-users, we run print and television advertisements and offer pricing promotions. We offer business-to-business services to customers with TA-Direct, an on-line order entry and customer service tool. In addition, we maintain detailed web sites for each of Walker®, Monroe®, Rancho®, DynoMax®, Monroe brake brands and our heavy-duty products.

Manufacturing and Engineering

We focus on achieving superior product quality at the lowest operating costs possible using productive, reliable and safe manufacturing processes to achieve that goal. Our manufacturing strategy centers on a lean

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production system called the Tenneco Manufacturing System (TMS), that is designed to eliminate waste, develop skills, share best practices and lead our manufacturing enterprise to reduce overall costs, while maintaining quality standards and reducing manufacturing cycle time. As part of TMS, we use Six Sigma techniques both in manufacturing and design to minimize product defects and improve operational efficiencies. We deploy new technology to differentiate our products from our competitors and to achieve higher quality and productivity. We continue to adapt our capacity to customer demand, both expanding capabilities in growth areas as well as reallocating capacity away from segments in decline.

Emission Control

Our consolidated businesses operate 11 emission control manufacturing facilities in the U.S. and 50 emission control manufacturing facilities outside of the U.S. We operate 17 of these international manufacturing facilities through joint ventures in which we hold a controlling interest. We operate four emission control engineering and technical facilities worldwide and share three other such facilities with our ride control operations. In addition, two joint ventures in which we hold a noncontrolling interest operate a total of two manufacturing facilities outside the U.S.

Within each of our emission control manufacturing facilities, operations are organized by component (e.g., muffler, catalytic converter, pipe, resonator and manifold). Our manufacturing systems incorporate cell-based designs, allowing work-in-process to move through the operation with greater speed and flexibility. We continue to invest in plant and equipment to stay competitive in the industry. For instance, in our Smithville, Tennessee, OE manufacturing facility, we have developed a muffler assembly cell that utilizes laser welding. This allows for quicker change-over times in the process as well as less material used and less weight for the product. There is also a reduced cycle time compared to traditional joining and increased manufacturing precision for superior durability and performance. In 2007, we introduced the Measured and Matched Converter technique in North America. This allows us to maintain the optimum GBD (Gap Bulk Density) in our converter manufacturing operations with Tenneco proprietary processing. This process, coupled with cold spinning of the converter body, versus traditional cone to can welding, allows for more effective use of material through reduced welding, lower cost, and better performance of the product. In 2009, we introduced low-cost fabricated diesel manifolds in Europe which utilize advanced manufacturing processes such as deep drawing, laser welding, and furnace brazing.

To strengthen our position as a Tier 1 OE systems supplier, we have developed some of our emission control manufacturing operations into just-in-time or JIT systems. In this system, a JIT facility located close to our OE customer s manufacturing plant receives product components from both our manufacturing operations and independent suppliers, and then assembles and ships products to the OEMs on an as-needed basis. To manage the JIT functions and material flow, we have advanced computerized material requirements planning systems linked with our customers and supplier partners resource management systems. We have three emission control JIT assembly facilities in the United States and 24 throughout the rest of the world.

Our engineering capabilities include advanced predictive design tools, advanced prototyping processes and state-of-the-art testing equipment. These technological capabilities make us a full system integrator to the OEMs, supplying complete emission control systems from the manifold to the tailpipe, to provide full emission and noise control. We expanded our engineering capabilities with the 2007 acquisition of Combustion Component Associates mobile emission technology, now sold globally under the XNOx™ name, that includes urea and hydrocarbon injection, and electronic controls and software for selective catalytic reduction. We also offer a complete suite of alternative full system NOx aftertreatment technologies, including the Hydrocarbon Lean NOx Catalyst (HC-LNC) technology under joint development with General Electric, and SOLID SCR™ technology licensed from Amminex, an engineering and manufacturing company located in Denmark. We also developed advanced predictive engineering tools, including KBM&E (Knowledge Based Manufacturing & Engineering). The innovation of our KBM&E (which we call TEN-KBM&E) is a modular toolbox set of CAD embedded applications for manufacturing and engineering compliant design. The encapsulated TEN-KBM&E content is driven by an analytical method which continuously captures and updates the knowledge of our main manufacturing and engineering processes. Our global engineering capabilities are standardized through the use of the ATLAS Global PDM (Product Data Management) system, enabling a more efficient transfer of knowledge around the world.

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Ride Control

Our consolidated businesses operate six ride control manufacturing facilities in the U.S. and 22 ride control manufacturing facilities outside the U.S. We operate two of these international facilities through joint ventures in which we hold a controlling interest. We operate seven engineering and technical facilities worldwide and share three other such facilities with our emission control operations.

Within each of our ride control manufacturing facilities, operations are organized by product (e.g., shocks, struts and vibration control products) and include computer numerically controlled and conventional machine centers; tube milling and drawn-over-mandrel manufacturing equipment; metal inert gas and resistance welding; powdered metal pressing and sintering; chrome plating; stamping; and assembly/test capabilities. Our manufacturing systems incorporate cell-based designs, allowing work-in-process to move through the operation with greater speed and flexibility.

To strengthen our position as a Tier 1 OE module supplier, we have developed one of our manufacturing operations outside the U.S. into a JIT assembly operation.

In designing our shock absorbers and struts, we use advanced engineering and test capabilities to provide product reliability, endurance and performance. Our engineering capabilities feature advanced computer-aided design equipment and testing facilities. Our dedication to innovative solutions has led to such technological advances as:

Adaptive damping systems adapt to the vehicle s motion to better control undesirable vehicle motions;

Electronically adjustable suspensions change suspension performance based on a variety of inputs such as steering, braking, vehicle height, and velocity; and

Air leveling systems manually or automatically adjust the height of the vehicle.

Conventional shock absorbers and struts generally compromise either ride comfort or vehicle control. Our innovative grooved-tube, gas-charged shock absorbers and struts provide both ride comfort and vehicle control, resulting in improved handling, reduced vibration and a wider range of vehicle control. This technology can be found in our premium quality Sensa-Trac® shock absorbers. We further enhanced this technology by adding the SafeTech™ fluon banded piston, which improves shock absorber performance and durability. We introduced the Monroe Reflex® shock absorber, which incorporates our Impact Sensor™ device. This technology permits the shock absorber to automatically switch in a matter of milliseconds between firm and soft compression, damping when the vehicle encounters rough road conditions, and thus maintaining better tire-to-road contact and improving handling and safety. We developed the Quick-Strut® which simplifies and shortens the installation of aftermarket struts. This technology combines the spring and upper mount into a single, complete module, eliminating the need for special tools and skills required previously. We have also developed an innovative computerized electronic suspension system, which features dampers developed by Tenneco and electronic valves designed by Öhlins Racing AB. The continuously controlled electronic suspension (CES) ride control system is featured on Audi, Volvo, Ford, Volkswagen, BMW, and Mercedes Benz vehicles.

Quality Control

Quality control is an important part of our production process. Our quality engineers establish performance and reliability standards in the product s design stage, and use prototypes to confirm that the component/system can be manufactured to specifications. Quality control is also integrated into the manufacturing process, with shop operators responsible for quality control of their specific work product. In addition, our inspectors test work-in-progress at various stages to ensure components are being fabricated to meet customers requirements.

We believe our commitment to quality control and sound management practices and policies is demonstrated by our successful participation in the International Standards Organization/Technical Specifications certification process (ISO/TS). ISO/TS certifications are semi-annual or annual audits that certify that a company s facilities meet stringent quality and business systems requirements. Without ISO or TS certification, we would not be able to supply our products for the aftermarket or to our OE customers, either

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locally or globally. All of our manufacturing facilities where we have determined that TS certification is required to serve our customers or would provide us with an advantage in securing additional business, have achieved ISO/TS 16949 certification.

Global Procurement Management

Our direct and indirect material costs represent a significant component of our cost structure. To ensure that our material acquisition process provides both a local and global competitive advantage, in addition to meeting regional legislative requirements, we have designed globally integrated standard processes which are managed by global teams of commodity specialists. Each global commodity strategy is tailored to regional requirements while leveraging our global scale to deliver the most cost effective solutions at a local level.

Business Strategy

We strive to strengthen our global market position by designing, manufacturing, delivering and marketing technologically innovative emission control and ride control products and systems for OEMs and the aftermarket. We work toward achieving a balanced mix of products, markets and customers by capitalizing on emerging trends, specific regional preferences and changing customer requirements. We target both mature and developing markets for both light vehicle and commercial and specialty vehicle business. We further enhance our operations by focusing on operational excellence in all functional areas.

The key components of our business strategy are described below:

Develop and Commercialize Advanced Technologies

We develop and commercialize technologies that allow us to expand into new, fast-growing markets and serve our existing customers. By anticipating customer needs and preferences, we design advanced technologies that meet global market needs. For example, to meet the increasingly stringent emissions regulations being introduced around the world, we offer several technologies designed to reduce NOx emissions on passenger and commercial vehicles. This includes an integrated Selective Catalytic Reduction (SCR) system that incorporates our XNOx™ technology. We also offer a NOx absorber and are developing a hydrocarbon lean NOx catalyst system and a solid form of ammonia SCR system to address NOx emissions. Additionally, we offer thermal management solutions, including our T.R.U.E.-Clean® active diesel particulate filter system.

We expect available content per vehicle to continue to rise over the next several years. Advanced aftertreatment exhaust systems are required to comply with emissions regulations that affect light and commercial vehicles as well as off-road, locomotive and stationary engines. In addition, vehicle manufacturers, we believe, will offer greater comfort, handling and safety features by offering products such as electronic suspension and adjustable dampers. Our Continuously Controlled Electronic Suspension (CES) shock absorbers, which we co-developed with Öhlins Racing AB, are now sold to Volvo, Audi, Mercedes, VW, BMW, and Ford, among others, and our engineered elastomers to manufacturers with unique requirements. Our newest electronic suspension product DRiV™, based on technology licensed from Sturman Industries, is the first industry example of digital valves for ride control products offering faster response, lighter weight, and reduced power consumption compared to existing analog products.

We continue to focus on developing highly engineered systems and complex assemblies and modules designed to provide value-added solutions to customers and increase vehicle content generally. Having many of our engineering and manufacturing facilities integrated electronically, we believe, has helped our products continue to be selected for inclusion in top-selling vehicles. In addition, our just-in-time and in-line sequencing manufacturing processes and distribution capabilities have enabled us to be more responsive to our customers needs.

Penetrate Adjacent Markets

We seek to penetrate a variety of adjacent sales opportunities and achieve growth in higher-margin businesses by applying our existing design, engineering and manufacturing capabilities. For example, we are

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aggressively leveraging our technology and engineering leadership in emission and ride control into adjacent sales opportunities for heavy-duty trucks, buses, agricultural equipment, construction machinery and other commercial and specialty vehicles. Commercial vehicle emission control launches are being ramped up in line with regulatory enforcement in North America, Europe, China, Japan, South America and India. These customers include Caterpillar, for whom we are their global diesel emission control system integrator, as well as John Deere, Navistar, Deutz, Daimler Trucks, MAN SE, Scania, China National Heavy Truck Company, Shanghai Diesel Engine Company, Weichai Power, FAW, and YuChai. In addition, we continue to expand into new markets with new customers, including our most recently announced new emission control business with Kubota, a commercial vehicle customer in Japan, and Mahindra, a commercial vehicle customer in India. Our 2011 and 2012 revenue generated by our commercial and specialty vehicle business was 11 percent and 13 percent, of our total OE revenue, respectively.

Expand Geographically

We continue to expand our global footprint into growth regions around the world. In 2010, we opened wholly-owned emission control manufacturing facilities in Chennai, India and Guangzhou, China, and a ride control facility in Chonburi, Thailand. In addition, we opened new emission control facilities in Changchun, China and in Beijing, China as a result of our joint venture agreements with FAW Sihuan and Beijing Hainachuan Automotive Part Company Limited, respectively. In 2011 we relocated and expanded two plants in China and during the third quarter, increased our investment in Thailand by acquiring the remaining interest in our emission control joint venture. We continue to develop our Thailand footprint with the goal of using it as a base for our future operations in that region. In 2012, we opened our first manufacturing plant in Japan, an emission control facility located in Osaka, which will support further growth in the region. As OEMs have expanded in the fast-growing regions of Brazil, Russia, India, China, and Thailand, we have followed, building our capabilities to engineer and produce locally cost-competitive and cutting-edge products, which has enabled us to capture new business.

Maintain Our Aftermarket Leadership

We manufacture and market leading, brand-name products to a diversified and global aftermarket customer base. Two of the most recognized brand-name products in the automotive parts industry are our Monroe® ride control products and Walker® emission control products, which have been offered to consumers since the 1930s. We believe our brand equity in the aftermarket is a key asset especially as customers consolidate and distribution channels converge.

We provide value differentiation by creating product extensions bearing our various brands. For example, we offer Monroe Reflex® and Monroe® Sensa-Trac® shock absorbers, Walker® Quiet-Flow® mufflers, Rancho® ride control products, DynoMax® exhaust products and Walker Ultra® catalytic converters, and in Europe, Walker and Aluminox Pro™ mufflers. Further, we introduced Monroe® Springs and Monro-Magnum® (bus and truck shock line) in Europe and Monroe Dynamics® and Monroe Ceramics® brake pads in the United States. We continue to explore other opportunities for developing new product lines that will be marketed under our existing, well-known brands.

We strive to gain market share in the aftermarket business by adding new product offerings and increasing our market coverage of existing brands and products. To this end, we offer an innovative, ride control product, the Quick-Strut®, that combines the spring and the upper mount into a single, complete module and simplifies and shortens the installation process, eliminating the need for the special tools and skills required previously. We are adapting our products further for use in foreign nameplate vehicles with the OESpectrum line of ride control products. Additionally, we benefited from the consolidation of, and regional expansion by, our customers and gained business lost by competitors that encountered financial difficulties.

Our success in the aftermarket business strengthens our competitive position with OEMs. We gain timely market and product knowledge that can be used to modify and enhance our offerings for greater customer acceptance. For our exhaust product line, we continue to enhance our converter coverage, including additional manifold converter part numbers. In addition, we also offer aftermarket diesel particulate filters.

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Execute Focused Transactions

We have successfully identified and capitalized on strategic acquisitions and alliances to achieve growth. Through these acquisitions and alliances, we have (1) expanded our product portfolio with complementary technologies; (2) realized incremental business from existing customers; (3) gained access to new customers; and (4) achieved leadership positions in geographic regions outside North America.

We developed a strategic alliance with Futaba Industrial Co., Ltd., a leading exhaust manufacturer in Japan. This alliance helps us grow our business with Japan-based OEMs by leveraging the geographical reach of our partner to serve global vehicle platforms of these OEMs. We positioned ourselves as a leading exhaust supplier in the rapidly growing Asian region through our operations in China, India and Thailand. In June 2009, we formed a joint venture with Beijing Hainachuan Automotive Parts Company Limited in Beijing that produces emission control exhaust systems for Hyundai. In addition, we continue to serve North American and European OEMs located in China; we supply luxury cars produced by BMW and Audi through our joint venture with Eberspächer International GmbH, and we supply various Ford platforms through our joint venture with Chengdu Lingchuan Mechanical Plant. We established a local engineering center in Shanghai to develop automotive exhaust products when our joint venture with Shanghai Tractor and Engine Company, a subsidiary of Shanghai Automotive Industry Corp., was expanded. Also, we increased our investment from 60 percent to 80 percent in Tenneco Tongtai Exhaust Company Limited located in Dalian in January 2010 and from 75 percent to 100 percent in our Thailand emission control company, Walker Exhaust Co. Limited in August 2011. Further, we formed a new joint venture in March 2010 with FAW Sihuan to supply emission control components and systems for passenger and commercial vehicles.

In February 2009, we signed a joint development agreement with GE Transportation, a unit of General Electric Company, to develop a proprietary diesel aftertreatment technology for various transportation and other applications. We are collaborating with GE Transportation on the development and production of GE s Hydrocarbon Lean NOx catalyst technology, a diesel aftertreatment innovation aimed at reducing harmful nitrogen oxide (NOx) emissions as effectively as urea-based SCR systems. We are working with others on alternative urea SCR technologies, such as solid forms of ammonia.

In late 2012, we signed an exclusive joint development agreement with Cormetech Inc., a joint equity company of Corning Inc. and Mitsubishi Heavy Industries Ltd, to design ultra-large diameter SCR catalysts for marine, locomotive and certain stationary applications. Also in late 2012, we signed a nonexclusive Joint Development and Licensing Agreement with Amminex for the design and development of SOLID-SCR™ systems.

We have exclusive licensing agreements for T.R.U.E.-Clean®, an exhaust aftertreatment technology used for automatic and active regeneration of Diesel Particulate Filters (DPFs), with Woodward Governor Company. This is an example of a technology, which complements our array of existing emissions control products, allowing us to provide integrated exhaust aftertreatment systems to commercial vehicle manufacturers and others.

We intend to continue to pursue strategic alliances, joint ventures, acquisitions and other transactions that complement or enhance our existing products, technology, systems development efforts, customer base and/or global presence. We will align with companies that have proven products, proprietary technology, advanced research capabilities, broad geographic reach, and/or strong market positions to further strengthen our product leadership, technology position, global reach and customer relationships.

Adapt Cost Structure to Economic Realities

We aggressively respond to difficult economic environments, aligning our operations to any resulting reductions in production levels and replacement demand and executing comprehensive restructuring and cost-reduction initiatives. On September 22, 2009, we announced that we were closing our original equipment ride control plant in Cozad, Nebraska. The closure of the Cozad plant eliminated approximately 500 positions. We hired at other facilities as we moved production from Cozad to those facilities, which resulted in a net decrease of

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approximately 60 positions. Much of the production was shifted from Cozad to our plant in Hartwell, Georgia. The closure of the Cozad plant was completed in August 2012 at a total cost of $23 million. Annualized cost savings as a result of these actions total $8 million.

We have continued to implement cost reduction initiatives where appropriate and in the third quarter of 2011, we completed a restructuring action that permanently eliminated 53 positions, or seven percent of our total workforce in Australia. This restructuring is part of a continuing broader plan for the Asia Pacific region where we are positioning Tenneco for growth by re-deploying assets to maximize utilization while at the same time addressing the industry environment in the region.

On September 13, 2012, we announced our intention to close our aftermarket emission control plant in Vittaryd, Sweden. We expect to complete the closure in the third quarter of 2013. We expect a smooth transition of production from the Vittaryd plant to other Tenneco emission control operations in Laval, France; Edenkoben, Germany; Valencia, Spain, and Rybnik, Poland, which began in late 2012. We expect to take restructuring and related charges in the range of $10 million to $14 million. These charges include non-cash asset impairments, the cost of relocating tooling, equipment and production to other facilities, severance and retention payments to employees, and other costs related to the closure. In 2012, we recorded non-cash charges of $4 million related to this initiative. We expect to record the remainder of the charges over the first three quarters of 2013.

On January 31, 2013, we announced our plan to reduce structural costs in Europe by approximately $60 million annually, and anticipate related costs of approximately $120 million, including the charges related to the closing of the Vittaryd facility and the $7 million charge recorded in the fourth quarter of 2012 to impair certain assets in the European ride control business. We expect that most of the remaining expense will be recorded in late 2013 and 2014, and that the company will reach a full savings run rate in 2016. Any plans affecting our European hourly and salaried workforce would be subject to union consultation.

Strengthen Operational Excellence

We will continue to focus on operational excellence by optimizing our manufacturing footprint, enhancing our Six Sigma processes and Lean productivity tools, developing further our engineering capabilities, managing the complexities of our global supply chain to realize purchasing economies of scale while satisfying diverse and global requirements, and supporting our businesses with robust information technology systems. We will make investments in our operations and infrastructure as required to achieve our strategic goals. We will be mindful of the changing market conditions that might necessitate adjustments to our resources and manufacturing capacity around the world. We will remain committed to protecting the environment as well as the health and safety of our employees.

Environmental Matters

We estimate that we and our subsidiaries will make expenditures for plant, property and equipment for environmental matters of approximately $7 million in 2013 and $2 million in 2014.

For additional information regarding environmental matters, see Item 3, Legal Proceedings, Item 7, Management s Discussion and Analysis of Financial Condition and Results of Operations Environmental and Other Matters, Item 7, Management s Discussion and Analysis of Financial Condition and Results of Operations Liquidity and Capital Resources and Note 12 to the consolidated financial statements of Tenneco Inc. included in Item 8.

Employees

As of December 31, 2012, we had approximately 25,000 employees of whom approximately 45 percent were covered by collective bargaining agreements. European works councils cover 19 percent of our total employees, a majority of whom are also included under collective bargaining agreements. Several of our existing labor agreements in Mexico are scheduled for renegotiation in 2013. In addition, agreements covering plants in France, Germany, Poland, and Argentina are expiring in 2013. We regard our employee relations as satisfactory.

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Other

The principal raw material that we use is steel. We obtain steel from a number of sources pursuant to various contractual and other arrangements. We believe that an adequate supply of steel can presently be obtained from a number of different domestic and foreign suppliers. In general, steel prices have been increasing since 2004 with the exception of a temporary but significant decline in prices as a result of the economic turmoil in 2008 and 2009. We address such price increases by evaluating alternative materials and processes, reviewing material substitution opportunities, increasing component and assembly to best cost countries, as well as strategically pursuing regional and global purchasing strategies for specific commodities, and aggressively negotiating with our customers to allow us to recover these higher costs from them. As global economies continue to recover, we expect increasing price pressure on key commodities, including rubber, oil and steel.

We hold a number of domestic and foreign patents and trademarks relating to our products and businesses. We manufacture and distribute our products primarily under the Walker® and Monroe® brand names, which are well-recognized in the marketplace and are registered trademarks. We also market certain of our emission control products to OE manufacturers under the names SOLID SCR™ and XNOx™ . The patents, trademarks and other intellectual property owned by or licensed to us are important in the manufacturing, marketing and distribution of our products.

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ITEM 1A. RISK FACTORS.

Future deterioration or prolonged difficulty in economic conditions could have a material adverse impact on our business, financial position and liquidity.

The economic crisis in 2008 and 2009 and the related worldwide financial industry turmoil resulted in a severe and global tightening of credit and liquidity. These conditions led to low consumer confidence, which resulted in delayed and reduced purchases of durable consumer goods such as automobiles. As a result, our OEM customers significantly reduced their production schedules. Light vehicle production has been increasing since the second half of 2009 and this trend has continued in most regions through 2012, with the exception of Europe where light vehicle production declined five percent in 2012 as compared to 2011. We cannot assure you that production levels will increase or that they may not decline. Further, it is uncertain how much further European production will decline or when it will stabilize. Future deterioration or prolonged difficulty in economic conditions could have a material adverse effect on our business, financial position and liquidity.

For example, as we saw in 2008 and 2009, disruptions in the financial markets may adversely impact the availability and cost of credit which could materially and negatively affect our Company. Future disruptions in the capital and credit markets could adversely affect our customers and our ability to access the liquidity that is necessary to fund operations on terms that are acceptable to us or at all.

In addition, financial or other difficulties at any of our major customers could have a material adverse impact on us, including as a result of lost revenues, significant write downs of accounts receivable, significant impairment charges or additional restructurings beyond our current global plans. Severe financial or other difficulties at any of our major suppliers could have a material adverse effect on us if we are unable to obtain on a timely basis on similar economic terms the quantity and quality of components we require to produce our products.

Moreover, severe financial or operating difficulties at any automotive manufacturer or other supplier could have a significant disruptive effect on the entire automotive industry, leading to supply chain disruptions and labor unrest, among other things. These disruptions could force automotive manufacturers and, in turn, other suppliers, including us, to shut down production at plants. While the difficulties facing our customers and suppliers over the last several years have been primarily financial in nature, other difficulties, such as an inability to meet increased demand as the economy recovers, could also result in supply chain and other disruptions.

Factors that reduce demand for our products or reduce prices could materially and adversely impact our financial condition and results of operations.

Demand for and pricing of our products are subject to economic conditions and other factors present in the various domestic and international markets where the products are sold. Demand for our OE products is subject to the level of consumer demand for new vehicles that are equipped with our parts. The level of new light and commercial vehicle purchases is cyclical, affected by such factors as general economic conditions, interest rates and availability of credit, consumer confidence, patterns of consumer spending, industrial construction levels, fuel costs and vehicle replacement cycles. Consumer preferences also impact the demand for new light vehicle purchases. For example, if consumers increasingly prefer electric vehicles, demand for the vehicles equipped with our emission control products would decrease.

Demand for our aftermarket, or replacement, products varies based upon such factors as general economic conditions; the level of new vehicle purchases, which initially displaces demand for aftermarket products; the severity of winter weather, which increases the demand for certain aftermarket products; and other factors, including the average useful life of parts and number of miles driven.

The highly cyclical nature of the automotive and commercial vehicle industry presents a risk that is outside our control and that cannot be accurately predicted. Decreases in demand for automobiles and commercial vehicles and vehicle parts generally, or in the demand for our products in particular, could materially and adversely impact our financial condition and results of operations.

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In addition, we believe that increasingly stringent environmental standards for emissions have presented and will continue to present an important opportunity for us to grow our emissions control business. We cannot assure you, however, that environmental standards for emissions will continue to become more stringent or that the adoption of any new standards will not be delayed beyond our expectations.

We are dependent on large customers for future revenue. The loss of all or a substantial portion of our sales to any of these customers or the loss of market share by these customers could have a material adverse impact on us.

We depend on major vehicle manufacturers for a substantial portion of our net sales. For example, during fiscal year ended December 31, 2012, GM and Ford accounted for 17 percent and 15 percent of our net sales, respectively. The loss of all or a substantial portion of our sales to any of our large-volume customers could have a material adverse effect on our financial condition and results of operations by reducing cash flows and our ability to spread costs over a larger revenue base. We may make fewer sales to these customers for a variety of reasons, including but not limited to: (1) loss of awarded business; (2) reduced or delayed customer requirements; (3) strikes or other work stoppages affecting production by the customers; or (4) reduced demand for our customers products.

In addition, our OE customers compete intensively against each other and other OE manufacturers. The loss of market share by any of our significant OE customers could have a material adverse effect on our business unless we are able to achieve increased sales to other OE manufacturers.

We may be unable to realize sales represented by our awarded business, which could materially and adversely impact our financial condition and results of operations.

The realization of future sales from awarded business is inherently subject to a number of important risks and uncertainties, including the number of vehicles that our OE customers will actually produce, the timing of that production and the mix of options that our OE customers and consumers may choose. For several years prior to 2008, substantially all of our North American vehicle manufacturing customers had slowed or maintained at relatively flat levels new vehicle production. In 2009, new vehicle production decreased dramatically in many geographic regions as a result of the global economic crisis. During the second half of 2009 and in 2010, new vehicle production stabilized and began to strengthen from these low production levels. For 2011 and 2012, light vehicle production continued to improve in most geographic regions in which we operate, though still not to the levels seen in recent history in many of those regions. Further, European production declined in 2012 and it is unclear when it will stabilize. In addition to the risks inherent in the cyclicality of vehicle production, our customers generally have the right to replace us with another supplier at any time for a variety of reasons and have demanded price decreases over the life of awarded business. Accordingly, we cannot assure you that we will in fact realize any or all of the future sales represented by our awarded business. Any failure to realize these sales could have a material adverse effect on our financial condition, results of operations, and liquidity.

In many cases, we must commit substantial resources in preparation for production under awarded OE business well in advance of the customer s production start date. In certain instances, the terms of our OE customer arrangements permit us to recover these pre-production costs if the customer cancels the business through no fault of our company. Although we have been successful in recovering these costs under appropriate circumstances in the past, we can give no assurance that our results of operations will not be materially impacted in the future if we are unable to recover these types of pre-production costs in the event of an OE customer s cancellation of awarded business.

Our level of debt makes us more sensitive to the effects of economic downturns; our level of debt and provisions in our debt agreements could limit our ability to react to changes in the economy or our industry.

Our level of debt makes us more vulnerable to changes in our results of operations because a substantial portion of our cash flow from operations is dedicated to servicing our debt and is not available for other purposes. Our level of debt could have other negative consequences to us, including the following:

- limiting our ability to borrow money or sell stock for our working capital, capital expenditures, debt service requirements or other general corporate purposes;

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limiting our flexibility in planning for, or reacting to, changes in our operations, our business or the industry in which we compete; and

our leverage may place us at a competitive disadvantage by limiting our ability to invest in the business or in further research and development.

Our ability to make payments on our indebtedness depends on our ability to generate cash in the future. If we do not generate sufficient cash flow to meet our debt service and working capital requirements, we may need to seek additional financing or sell assets. This may make it more difficult for us to obtain financing on terms that are acceptable to us, or at all. Without such financing, we could be forced to sell assets to make up for any shortfall in our payment obligations under unfavorable circumstances. If necessary, we may not be able to sell assets quickly enough or for sufficient amounts to enable us to meet our obligations.

In addition, our senior credit facility and our other debt agreements contain covenants that limit our flexibility in planning for or reacting to changes in our business and our industry, including limitations on incurring additional indebtedness, making investments, granting liens and merging or consolidating with other companies. Complying with these covenants may impair our ability to finance our future operations and capital needs or to engage in other favorable business activities.

Our failure to comply with the covenants contained in our senior credit facility or the indentures for our other debt instruments, including as a result of events beyond our control, could result in an event of default, which could materially and adversely affect our operating results and our financial condition.

Our senior credit facility and receivables securitization program in the U.S. require us to maintain certain financial ratios. Our senior credit facility and our other debt instruments require us to comply with various operational and other covenants. If there were an event of default under any of our debt instruments that was not cured or waived, the holders of the defaulted debt could cause all amounts outstanding with respect to that debt to be due and payable immediately. We cannot assure you that our assets or cash flow would be sufficient to fully repay borrowings under our outstanding debt instruments, either upon maturity or if accelerated, upon an event of default, or that we would be able to refinance or restructure the payments on those debt instruments.

For example, in February 2009, we sought an amendment to our senior credit facility to revise the financial ratios we are required to maintain thereunder. If, in the future, we are required to obtain similar amendments as a result of our inability to meet the required financial ratios, there can be no assurance that those amendments will be available on commercially reasonable terms or at all. If, as or when required, we are unable to repay, refinance or restructure our indebtedness under our senior credit facility, or amend the covenants contained therein, the lenders under our senior credit facility could elect to terminate their commitments thereunder, cease making further loans and institute foreclosure proceedings against our assets. In addition, any event of default or declaration of acceleration under one of our debt instruments could also result in an event of default under one or more of our other financing agreements, including our other debt instruments and/or the agreements under which we sell certain of our accounts receivable. This would have a material adverse impact on our liquidity, financial position and results of operations.

Our working capital requirements may negatively affect our liquidity and capital resources.

Our working capital requirements can vary significantly, depending in part on the level, variability and timing of our customers worldwide vehicle production and the payment terms with our customers and suppliers. If our working capital needs exceed our cash flows from operations, we would look to our cash balances and availability for borrowings under our borrowing arrangements to satisfy those needs, as well as potential sources of additional capital, which may not be available on satisfactory terms and in adequate amounts, if at all.

We may be unable to realize our business strategy of improving operating performance, growing our business and generating savings and improvements.

We regularly implement strategic and other initiatives designed to improve our operating performance. For example, we recently announced a cost reduction initiative in Europe that is anticipated to significantly reduce

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our annual structural costs in the region. The failure to achieve the goals of these initiatives could have a material adverse effect on our business, particularly since we rely on these initiatives to offset pricing pressures from our suppliers and our customers, as described above, as well as to manage the impacts of production cuts, such as the significant production decreases we experienced during 2008 and 2009 as a result of the recent global economic crisis, and the lingering effects this crisis continues to have in Europe in particular, where light vehicle production declined in 2012 and is not forecasted to recover in 2013. Furthermore, the terms of our senior credit facility and the indentures governing our notes may restrict the types of initiatives we undertake, as these agreements include certain restrictions on our uses of cash and require us to maintain defined financial ratios and otherwise prohibit us from undertaking certain other activities. In the past we have been successful in obtaining the consent of our senior lenders where appropriate in connection with our initiatives. We cannot assure you, however, that we will be able to pursue, successfully implement or realize the expected benefits of any initiative or that we will be able to sustain improvements made to date.

The hourly workforce in the industries in which we participate is highly unionized and our business could be adversely affected by labor disruptions.

A portion of our hourly workforce in North America and the majority of our hourly workforce in Europe and China are unionized. Although we consider our current relations with our employees to be satisfactory, if major work disruptions were to occur, our business could be adversely affected by, for instance, a loss of revenues, increased costs or reduced profitability. We have not experienced a material labor disruption in our recent history, but there can be no assurance that we will not experience a material labor disruption at one of our facilities in the future in the course of renegotiation of our labor arrangements or otherwise.

In addition, substantially all of the hourly employees of General Motors, Ford and Chrysler in North America and many of their other suppliers are represented by the United Automobile, Aerospace and Agricultural Implement Workers of America under collective bargaining agreements. Vehicle manufacturers, their suppliers and their respective employees in other countries are also subject to labor agreements. A work stoppage or strike at one of our production facilities, at those of a customer, or impacting a supplier of ours or any of our customers, such as the 2008 strike at American Axle which resulted in 30 GM facilities in North America being idled for several months, could have an adverse impact on us by disrupting demand for our products and/or our ability to manufacture our products.

In the past, we have experienced significant increases and fluctuations in raw materials pricing; and future changes in the prices of raw materials or utility services could have a material adverse impact on us without proportionate recovery from our customers.

Significant increases in the cost of certain raw materials used in our products or the cost of utility services required to produce our products, to the extent they are not timely reflected in the price we charge our customers or are otherwise mitigated, could materially and adversely impact our results. In general, commodity prices including steel, oil and rubber, have been increasing since 2004 with the exception of a temporary but significant decline in prices as a result of the economic turmoil in 2008 and 2009. Notwithstanding this temporary decline, the trend of increasing commodity prices has continued. We mitigated these challenges by evaluating alternative materials and processes, reviewing material substitution opportunities, increasing component sourcing and parts assembly in best cost countries as well as strategically pursuing regional and global purchasing strategies for specific commodities, and aggressively negotiating to recover these higher costs from our customers. We also continue to pursue productivity initiatives and other opportunities to reduce costs through restructuring activities. During periods of economic recovery, the cost of raw materials and utility services generally rise. Accordingly, we cannot ensure that we will not face increased prices in the future or, if we do, whether these actions will be effective in containing them.

We may incur costs related to product warranties, environmental and regulatory matters and other claims, which could have a material adverse impact on our financial condition and results of operations.

From time to time, we receive product warranty claims from our customers, pursuant to which we may be required to bear costs of repair or replacement of certain of our products. Vehicle manufacturers require their

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outside suppliers to guarantee or warrant their products and to be responsible for the operation of these component products in new vehicles sold to consumers. Warranty claims may range from individual customer claims to full recalls of all products in the field. We cannot assure you that costs associated with providing product warranties will not be material, or that those costs will not exceed any amounts reserved in our consolidated financial statements. For a description of our accounting policies regarding warranty reserves, see Management s Discussion and Analysis of Financial Condition and Results of Operations Critical Accounting Policies included in Item 7.

We are subject to extensive government regulations worldwide. Foreign, federal, state and local laws and regulations may change from time to time and our compliance with new or amended laws and regulations in the future may materially increase our costs and could adversely affect our results of operations and competitive position. For example, we are subject to a variety of environmental and pollution control laws and regulations in all jurisdictions in which we operate. Soil and groundwater remediation activities are being conducted at certain of our current and former real properties. We record liabilities for these activities when environmental assessments indicate that the remedial efforts are probable and the costs can be reasonably estimated. On this basis, we have established reserves that we believe are adequate for the remediation activities at our current and former real properties for which we could be held responsible. Although we believe our estimates of remediation costs are reasonable and are based on the latest available information, the cleanup costs are estimates and are subject to revision as more information becomes available about the extent of remediation required. In future periods, we could incur cash costs or charges to earnings if we are required to undertake remediation efforts as the result of ongoing analysis of the environmental status of our properties.

We also from time to time are involved in legal proceedings, claims or investigations that are incidental to the conduct of our business. Some of these proceedings allege damages against us relating to environmental liabilities, intellectual property matters, personal injury claims, taxes, employment matters or commercial or contractual disputes. For example, we are subject to a number of lawsuits initiated by a significant number of claimants alleging health problems as a result of exposure to asbestos. Many of these cases involve significant numbers of individual claimants. Many of these cases also involve numerous defendants, with the number of defendants in some cases exceeding 100 defendants from a variety of industries. As major asbestos manufacturers or other companies that used asbestos in their manufacturing processes continue to go out of business, we may experience an increased number of these claims.

We vigorously defend ourselves in connection with all of the matters described above. We cannot, however, assure you that the costs, charges and liabilities associated with these matters will not be material, or that those costs, charges and liabilities will not exceed any amounts reserved for them in our consolidated financial statements. In future periods, we could be subject to cash costs or charges to earnings if any of these matters are resolved unfavorably to us. See Management s Discussion and Analysis of Financial Condition and Results of Operations Environmental and Legal Contingencies included in Item 7.

Developments relating to our intellectual property could materially impact our business.

We and others in our industry hold a number of patents and other intellectual property rights, including licenses, that are critical to our respective businesses and competitive positions. Notwithstanding our intellectual property portfolio, our competitors may develop similar or superior proprietary technologies. Further, as we expand into regions where the protection of intellectual property rights is less robust, the risk of others replicating our proprietary technologies increases, which could result in a deterioration of our competitive position. On occasion, we may assert claims against third parties who are taking actions that we believe are infringing on our intellectual property rights. Similarly, third parties may assert claims against us and our customers and distributors alleging our products infringe upon third party intellectual property rights. These claims, regardless of their merit or resolution, are frequently costly to prosecute, defend or settle and divert the efforts and attention of our management and employees. Claims of this sort also could harm our relationships with our customers and might deter future customers from doing business with us. If any such claim were to result in an adverse outcome, we could be required to take actions which may include: expending significant resources to develop or license non-infringing products; paying substantial damages to third parties, including to customers to

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compensate them for their discontinued use or replacing infringing technology with non-infringing technology; or cessation of the manufacture, use or sale of the infringing products. Any of the foregoing results could have a material adverse effect on our business, financial condition, results of operations or our competitive position.

We are increasingly dependent on information technology, and if we are unable to protect against service interruptions or security breaches, our business could be adversely affected.

Our operations rely on a number of information technologies to manage, store, and support business activities. We have put in place a number of systems, processes, and practices designed to protect against the failure of our systems, as well as the misappropriation, exposure or corruption of the information stored thereon. Unintentional service disruptions or intentional actions such as intellectual property theft, cyber-attacks, unauthorized access or malicious software, may lead to such misappropriation, exposure or corruption if our protective measures prove to be inadequate. Further, these events may cause operational impediments or otherwise adversely affect our product sales, financial condition and/or results of operations. We could also encounter violations of applicable law or reputational damage from the disclosure of confidential information belonging to us or our employees, customers or suppliers. In addition, the disclosure of non-public information could lead to the loss of our intellectual property and/or diminished competitive advantages. Should any of the foregoing events occur, we may be required to incur significant costs to protect against damage caused by these disruptions or security breaches in the future.

We may have difficulty competing favorably in the highly competitive automotive parts industry.

The automotive parts industry is highly competitive. Although the overall number of competitors has decreased due to ongoing industry consolidation, we face significant competition within each of our major product areas, including from new competitors entering the markets which we serve. The principal competitive factors include price, quality, service, product performance, design and engineering capabilities, new product innovation, global presence and timely delivery. As a result, many suppliers have established or are establishing themselves in emerging, low-cost markets to reduce their costs of production and be more conveniently located for customers. Although we are also pursuing a best-cost country production strategy and otherwise continue to seek process improvements to reduce costs, we cannot assure you that we will be able to continue to compete favorably in this competitive market or that increased competition will not have a material adverse effect on our business by reducing our ability to increase or maintain sales or profit margins.

Furthermore, due to the cost focus of our major customers, we have been, and expect to continue to be, requested to reduce prices as part of our initial business quotations and over the life of vehicle platforms we have been awarded. We cannot be certain that we will be able to generate cost savings and operational improvements in the future that are sufficient to offset price reductions requested by existing customers and necessary to win additional business.

The decreasing number of automotive parts customers and suppliers could make it more difficult for us to compete favorably.

Our financial condition and results of operations could be adversely affected because the customer base for automotive parts is decreasing in both the original equipment market and aftermarket. As a result, we are competing for business from fewer customers. Furthermore, consolidation and bankruptcies among automotive parts suppliers are resulting in fewer, larger suppliers who benefit from purchasing and distribution economies of scale. If we cannot achieve cost savings and operational improvements sufficient to allow us to compete favorably in the future with these larger companies, our financial condition and results of operations could be adversely affected due to a reduction of, or inability to increase sales.

We may not be able to successfully respond to the changing distribution channels for aftermarket products.

Major automotive aftermarket retailers, such as AutoZone and Advance Auto Parts, are attempting to increase their commercial sales by selling directly to automotive parts installers in addition to individual consumers. These installers have historically purchased from their local warehouse distributors and jobbers, who

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are our more traditional customers. We cannot assure you that we will be able to maintain or increase aftermarket sales through increasing our sales to retailers. Furthermore, because of the cost focus of major retailers, we have occasionally been requested to offer price concessions to them. Our failure to maintain or increase aftermarket sales, or to offset the impact of any reduced sales or pricing through cost improvements, could have an adverse impact on our business and operating results.

Longer product lives of automotive parts are adversely affecting aftermarket demand for some of our products.

The average useful life of automotive parts has steadily increased in recent years due to innovations in products and technologies. The longer product lives allow vehicle owners to replace parts of their vehicles less often. As a result, a portion of sales in the aftermarket has been displaced. This has adversely impacted, and could continue to adversely impact, our aftermarket sales. Also, any additional increases in the average useful lives of automotive parts would further adversely affect the demand for our aftermarket products. Aftermarket sales represented approximately 17 percent and 18 percent of our net sales in the fiscal years ended December 31, 2012 and 2011, respectively.

Any acquisitions we make could disrupt our business and seriously harm our financial condition.

We may, from time to time, consider acquisitions of complementary companies, products or technologies. Acquisitions involve numerous risks, including difficulties in the assimilation of the acquired businesses, the diversion of our management s attention from other business concerns and potential adverse effects on existing business relationships with customers and suppliers. In addition, any acquisitions could involve the incurrence of substantial additional indebtedness. We cannot assure you that we will be able to successfully integrate any acquisitions that we pursue or that such acquisitions will perform as planned or prove to be beneficial to our operations and cash flow. Any such failure could seriously harm our business, financial condition and results of operations.

We are subject to risks related to our international operations.

We have manufacturing and distribution facilities in many regions and countries, including Australia, Asia, North America, Europe, South Africa and South America, and sell our products worldwide. For the fiscal year ended December 31, 2012, approximately 50 percent of our net sales were derived from operations outside North America. International operations are subject to various risks which could have a material adverse effect on those operations or our business as a whole, including:

- exposure to local economic conditions and labor issues;
- exposure to local political conditions, including the risk of seizure of assets by a foreign government;
- exposure to local social unrest, including any resultant acts of war, terrorism or similar events;
- exposure to local public health issues and the resultant impact on economic and political conditions;
- currency exchange rate fluctuations;
- hyperinflation in certain foreign countries;
- controls on the repatriation of cash, including imposition or increase of withholding and other taxes on remittances and other payments by foreign subsidiaries;

export and import restrictions; and

requirements for manufacturers to use locally produced goods.

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New regulations related to conflict-free minerals may force us to incur additional expenses and otherwise adversely impact our business.

In August 2012, as mandated by the Dodd-Frank Wall Street Reform and Consumer Protection Act, the SEC adopted final rules regarding disclosure of the use of certain minerals, known as conflict minerals, originating from the Democratic Republic of Congo (DRC) or adjoining countries. These new requirements will require ongoing due diligence efforts, with initial disclosure requirements beginning in May 2014. Our supply chain is complex and we may incur significant costs to determine the source of any such minerals used in our products. We may also incur costs with respect to potential changes to products, processes or sources of supply as a consequence of our diligence activities. Further, the implementation of these rules and their effect on customer, supplier and/or consumer behavior could adversely affect the sourcing, supply and pricing of materials used in our products. As there may be only a limited number of suppliers offering conflict-free minerals, we cannot be sure that we will be able to obtain necessary minerals from such suppliers in sufficient quantities or at competitive prices. We may face reputational challenges if we determine that certain of our products contain minerals not determined to be conflict-free or if we are unable to sufficiently verify the origins for all conflict minerals used in our products through the procedures we implement. Accordingly, the implementation of these rules could have a material adverse effect on our business, results of operations and/or financial condition.

Exchange rate fluctuations could cause a decline in our financial condition and results of operations.

As a result of our international operations, we are subject to increased risk because we generate a significant portion of our net sales and incur a significant portion of our expenses in currencies other than the U.S. dollar. For example, where we have a greater portion of costs than revenues generated in a foreign currency, we are subject to risk if the foreign currency in which our costs are paid appreciates against the currency in which we generate revenue because the appreciation effectively increases our cost in that country.

The financial condition and results of operations of some of our operating entities are reported in foreign currencies and then translated into U.S. dollars at the applicable exchange rate for inclusion in our consolidated financial statements. As a result, appreciation of the U.S. dollar against these foreign currencies generally will have a negative impact on our reported revenues and operating profit while depreciation of the U.S. dollar against these foreign currencies will generally have a positive effect on reported revenues and operating profit. For example, our consolidated results of operations were negatively impacted in 2012 due to the weakening of the Euro against the U.S. dollar and positively impacted in 2011 due to the strengthening of the Euro against the U.S. dollar. However, in 2008 through 2010, the dollar strengthened against the Euro which had negative effects on our results of operations. Our South American operations were negatively impacted by the devaluation in 2000 of the Brazilian currency as well as by the devaluation of the Argentine currency in 2002. We do not generally seek to mitigate this translation effect through the use of derivative financial instruments. To the extent we are unable to match revenues received in foreign currencies with costs paid in the same currency, exchange rate fluctuations in that currency could have a material adverse effect on our business.

Entering new markets poses new competitive threats and commercial risks.

As we have expanded into markets beyond light vehicles, we expect to diversify our product sales by leveraging technologies being developed for the light vehicle segment. Such diversification requires investments and resources which may not be available as needed. We cannot guarantee that we will be successful in leveraging our capabilities into new markets and thus, in meeting the needs of these new customers and competing favorably in these new markets. Further, a significant portion of our growth potential is dependent on our ability to increase sales to commercial vehicle customers. While we believe that we can achieve our growth targets with the production contracts that have been or will be awarded to us, our future prospects will be negatively affected if those customers underlying these contracts experience reduced demand for their products, or financial difficulties.

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Impairment in the carrying value of long-lived assets and goodwill could negatively affect our operating results.

We have a significant amount of long-lived assets and goodwill on our consolidated balance sheet. Under generally accepted accounting principles, long-lived assets are required to be reviewed for impairment whenever adverse events or changes in circumstances indicate a possible impairment. If business conditions or other factors cause profitability and cash flows to decline, we may be required to record non-cash impairment charges. Goodwill must be evaluated for impairment annually or more frequently if events indicate it is warranted. If the carrying value of our reporting units exceeds their current fair value as determined based on the discounted future cash flows of the related business, the goodwill is considered impaired and is reduced to fair value by a non-cash charge to earnings. Events and conditions that could result in impairment in the value of our long-lived assets and goodwill include changes in the industries in which we operate, particularly the impact of a downturn in the global economy, as well as competition and advances in technology, adverse changes in the regulatory environment, or other factors leading to reduction in expected long-term sales or profitability. For example, during the fiscal year ended December 31, 2008, we recorded a $114 million asset impairment charge to write-off the remaining goodwill related to our 1996 acquisition of Clevite Industries and during the fiscal year ended December 31, 2011, we recorded a $11 million goodwill impairment charge relating to our Australian reporting unit. During the fiscal year ended December 31, 2012, we recorded non-cash asset impairment charges of $4 million related to the announced closing of our aftermarket emission control plant in Vittaryd, Sweden, and a $7 million asset impairment charge related to certain assets of our European ride control business.

The value of our deferred tax assets could become impaired, which could materially and adversely affect our operating results.

As of December 31, 2012, we had approximately $155 million in net deferred tax assets. These deferred tax assets include net operating loss carryovers that can be used to offset taxable income in future periods and reduce income taxes payable in those future periods. Each quarter, we determine the probability of the realization of deferred tax assets, using significant judgments and estimates with respect to, among other things, historical operating results and expectations of future earnings and tax planning strategies. If we determine in the future that there is not sufficient positive evidence to support the valuation of these assets, due to the risk factors described herein or other factors, we may be required to further adjust the valuation allowance to reduce our deferred tax assets. Such a reduction could result in material non-cash expenses in the period in which the valuation allowance is adjusted and could have a material adverse effect on our results of operations.

Our expected annual effective tax rate could be volatile and materially change as a result of changes in mix of earnings and other factors.

Our overall effective tax rate is equal to our total tax expense as a percentage of our total profit or loss before tax. However, tax expenses and benefits are determined separately for each tax paying entity or group of entities that is consolidated for tax purposes in each jurisdiction. Losses in certain jurisdictions may provide no current financial statement tax benefit. As a result, changes in the mix of profits and losses between jurisdictions, among other factors, could have a significant impact on our overall effective tax rate.

ITEM 1B. UNRESOLVED STAFF COMMENTS.

None.

ITEM 2. PROPERTIES.

We lease our principal executive offices, which are located at 500 North Field Drive, Lake Forest, Illinois, 60045.

Our emission control business operates 11 manufacturing facilities in the U.S. and 50 manufacturing facilities outside of the U.S. Our emission control business also operates four engineering and technical facilities worldwide and shares three other such facilities with our ride control business. Twenty-seven of these manufacturing plants are JIT facilities. In addition, two joint ventures in which we hold a noncontrolling interest operate a total of two manufacturing facilities outside the U.S., all of which are JIT facilities.

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Our ride control business operates six manufacturing facilities in the U.S. and 22 manufacturing facilities outside the U.S. Our ride control business also operates seven engineering and technical facilities worldwide and shares three other such facilities with our emission control business. One of these manufacturing plants is a JIT facility.

The above-described manufacturing locations outside of the U.S. are located in Argentina, Australia, Belgium, Brazil, Canada, China, Czech Republic, France, Germany, Hungary, India, Italy, Japan, Korea, Mexico, Poland, Portugal, Russia, Spain, South Africa, Sweden, Thailand, and the United Kingdom. We also have sales offices located in Singapore and Taiwan.

We own 48 of the properties described above and lease 71. We hold 18 of the above-described international manufacturing facilities through seven joint ventures in which we own a controlling interest. In addition, two joint ventures in which we hold a noncontrolling interest operate a total of two manufacturing facilities outside the U.S. We also have distribution facilities at our manufacturing sites and at a few offsite locations, substantially all of which we lease.

We believe that substantially all of our plants and equipment are, in general, well maintained and in good operating condition. They are considered adequate for present needs and, as supplemented by planned construction, are expected to remain adequate for the near future.

We also believe that we have generally satisfactory title to the properties owned and used in our respective businesses.

ITEM 3. LEGAL PROCEEDINGS.

We are involved in environmental remediation matters, legal proceedings, claims, investigations and warranty obligations that are incidental to the conduct of our business and create the potential for contingent losses. We accrue for potential contingent losses when our review of available facts indicates that it is probable a loss has been incurred and the amount of the loss is reasonably estimable. Each quarter we assess our loss contingencies based upon currently available facts, existing technology, and presently enacted laws and regulations taking into consideration the likely effects of inflation and other societal and economic factors and record adjustments to these reserves as required. As an example, we consider all available evidence including prior experience in remediation of contaminated sites, other companies cleanup experiences and data released by the United States Environmental Protection Agency or other organizations when we evaluate our environmental remediation contingencies. Further, all of our loss contingency estimates are subject to revision in future periods based on actual costs or new information. With respect to our environmental liabilities, where future cash flows are fixed or reliably determinable, we have discounted those liabilities. All other environmental liabilities are recorded at their undiscounted amounts. We evaluate recoveries separately from the liability and, when they are assured, recoveries are recorded and reported separately from the associated liability in our consolidated financial statements.

We are subject to a variety of environmental and pollution control laws and regulations in all jurisdictions in which we operate. We expense or capitalize, as appropriate, expenditures for ongoing compliance with environmental regulations that relate to current operations. We expense costs related to an existing condition caused by past operations that do not contribute to current or future revenue generation. As of December 31, 2012, we have the obligation to remediate or contribute towards the remediation of certain sites, including one Federal Superfund site. At December 31, 2012, our aggregated estimated share of environmental remediation costs for all these sites on a discounted basis was approximately $18 million, of which $5 million is recorded in other current liabilities and $13 million is recorded in deferred credits and other liabilities in our consolidated balance sheet. For those locations where the liability was discounted, the weighted average discount rate used was 1.6 percent. The undiscounted value of the estimated remediation costs was $21 million. Our expected payments of environmental remediation costs are estimated to be approximately $3 million in 2013, $1 million each year beginning 2014 through 2017 and $14 million in aggregate thereafter. Based on information known to us, we have established reserves that we believe are adequate for these costs. Although we believe these estimates of remediation costs are reasonable and are based on the latest available information, the costs are

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estimates and are subject to revision as more information becomes available about the extent of remediation required. At some sites, we expect that other parties will contribute towards the remediation costs. In addition, certain environmental statutes provide that our liability could be joint and several, meaning that we could be required to pay in excess of our share of remediation costs. Our understanding of the financial strength of other potentially responsible parties at these sites has been considered, where appropriate, in our determination of our estimated liability. We do not believe that any potential costs associated with our current status as a potentially responsible party in the Federal Superfund site, or as a liable party at the other locations referenced herein, will be material to our consolidated results of operations, financial position or cash flows.

We also from time to time are involved in legal proceedings, claims or investigations. Some of these proceedings allege damages against us relating to environmental liabilities (including, toxic tort, property damage and remediation), intellectual property matters (including patent, trademark and copyright infringement, and licensing disputes), personal injury claims (including injuries due to product failure, design or warning issues, and other product liability related matters), taxes, employment matters, and commercial or contractual disputes, sometimes related to acquisitions or divestitures. For example, one of our Argentine subsidiaries is currently defending against a criminal complaint alleging the failure to comply with laws requiring the proceeds of export transactions to be collected, reported and/or converted to local currency within specified time periods. As another example, in the U.S. we are subject to an audit in 11 states with respect to the payment of unclaimed property to those states, spanning a period as far back as over 30 years. While we vigorously defend ourselves against all of these claims in future periods we could be subject to cash costs or charges to earnings if any of these matters are resolved on unfavorable terms. Although the ultimate outcome of any legal matter cannot be predicted with certainty, based on current information, including our assessment of the merits of the particular claim, we do not expect that these legal proceedings or claims will have any material adverse impact on our future consolidated financial position, results of operations or cash flows.

In addition, we are subject to lawsuits initiated by a significant number of claimants alleging health problems as a result of exposure to asbestos. In the early 2000 s we were named in nearly 20,000 complaints, most of which were filed in Mississippi state court and the vast majority of which made no allegations of exposure to asbestos from our product categories. Most of these claims have been dismissed and our current docket of active and inactive cases is less than 500 cases nationwide. A small number of claims have been asserted by railroad workers alleging exposure to asbestos products in railroad cars manufactured by The Pullman Company, one of our subsidiaries. The substantial majority of the remaining claims are related to alleged exposure to asbestos in our automotive products. Only a small percentage of the claimants allege that they were automobile mechanics and a significant number appear to involve workers in other industries or otherwise do not include sufficient information to determine whether there is any basis for a claim against us. We believe, based on scientific and other evidence, it is unlikely that mechanics were exposed to asbestos by our former products and that, in any event, they would not be at increased risk of asbestos-related disease based on their work with these products. Further, many of these cases involve numerous defendants, with the number in some cases exceeding 100 defendants from a variety of industries. Additionally, the plaintiffs either do not specify any, or specify the jurisdictional minimum, dollar amount for damages. As major asbestos manufacturers and/or users continue to go out of business or file for bankruptcy, we may experience an increased number of these claims. We vigorously defend ourselves against these claims as part of our ordinary course of business. In future periods, we could be subject to cash costs or charges to earnings if any of these matters are resolved unfavorably to us. To date, with respect to claims that have proceeded sufficiently through the judicial process, we have regularly achieved favorable resolutions. Accordingly, we presently believe that these asbestos-related claims will not have a material adverse impact on our future consolidated financial condition, results of operations or cash flows.

ITEM 4. MINE SAFETY DISCLOSURES.

Not applicable.

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ITEM 4.1. EXECUTIVE OFFICERS OF THE REGISTRANT.

The following provides information concerning the persons who serve as our executive officers as of February 27, 2013.

Name and Age	Offices Held
Gregg M. Sherrill (60)	Chairman and Chief Executive Officer
Hari N. Nair (53)	Chief Operating Officer
Josep Fornos (60)	Executive Vice President, Ride Performance Division
Timothy E. Jackson (56)	Executive Vice President Technology, Strategy and Business Development
Kenneth R. Trammell (52)	Executive Vice President and Chief Financial Officer
Neal A. Yanos (51)	Executive Vice President, Clean Air Division
Brent J. Bauer (57)	Senior Vice President and General Manager North America Original Equipment Emission Control
Gregg Bolt (53)	Senior Vice President, Global Human Resources and Administration
Michael J. Charlton (54)	Senior Vice President, Global Manufacturing Development and European Cost Reduction Initiatives
James D. Harrington (52)	Senior Vice President, General Counsel and Corporate Secretary
Barbara A. Kluth (56)	Senior Vice President, Global Human Resources
Paul D. Novas (54)	Vice President and Controller

Gregg M. Sherrill Mr. Sherrill was named the Chairman and Chief Executive Officer of Tenneco in January 2007. Mr. Sherrill joined us from Johnson Controls Inc., where he served since 1998, most recently as President, Power Solutions. From 2002 to 2003, Mr. Sherrill served as the Vice President and Managing Director of Europe, South Africa and South America for Johnson Controls Automotive Systems Group. Prior to joining Johnson Controls, Mr. Sherrill held various engineering and manufacturing assignments over a 22-year span at Ford Motor Company, including Plant Manager of Ford s Dearborn, Michigan engine plant, Chief Engineer, Steering Systems and Director of Supplier Technical Assistance. Mr. Sherrill became a director of our company in January 2007.

Hari N. Nair Mr. Nair was named Chief Operating Officer in July 2010. Prior to that, he served as our Executive Vice President and President International since March 2007. Previously, Mr. Nair served as Executive Vice President and Managing Director of our business in Europe, South America and India. Before that, he was Senior Vice President and Managing Director International. Prior to December 2000, Mr. Nair was the Vice President and Managing Director Emerging Markets. Previously, Mr. Nair was the Managing Director for Tenneco Automotive Asia, based in Singapore and responsible for all operations and development projects in Asia. He began his career with the former Tenneco Inc. in 1987, holding various positions in strategic planning, marketing, business development, quality systems and finance. Prior to joining Tenneco, Mr. Nair was a senior financial analyst at General Motors Corporation focusing on European operations. Mr. Nair became a director of our company in March 2009.

Josep Fornos Mr. Fornos was named Executive Vice President, Ride Performance Division in February 2013. He served as Executive Vice President and General Manager, Europe, South America and India from March 2012 to February 2013 and as Senior Vice President and General Manager, Europe, South America and India from July 2010 to March 2012. Prior to that, he had served as Vice President and General Manager, Europe Original Equipment Emission Control since March 2007. Mr. Fornos joined Tenneco in July 2000 as Vice President and General Manager, Europe Original Equipment Ride Control. Prior to joining Tenneco, Fornos spent a year at Lear Corporation as General Manager of the company s seating and wire and harness business in France, following Lear s acquisition of United Technologies Automotive. Mr. Fornos spent 16 years with United Technologies Automotive, holding several management positions in production, engineering and quality control in Spain and later having Europe-wide responsibility for engineering and quality control.

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Timothy E. Jackson Mr. Jackson has served as Executive Vice President, Technology, Strategy and Business Development since March 2012. He served as our Senior Vice President and Chief Technology Officer from March 2007 to March 2012. Prior to that, Mr. Jackson served as our Senior Vice President Global Technology and General Manager, Asia Pacific since July 2005. From 2002 to 2005, Mr. Jackson served as Senior Vice President Manufacturing, Engineering, and Global Technology. In August 2000, he was named Senior Vice President Global Technology, a role he served in after joining us as Senior Vice President and General Manager North American Original Equipment and Worldwide Program Management in June 1999. Mr. Jackson came to Tenneco from ITT Industries where he was President of that company s Fluid Handling Systems Division. With over 30 years of management experience, 14 within the automotive industry, he had also served as Chief Executive Officer for HiSan, a joint venture between ITT Industries and Sanoh Industrial Company. Mr. Jackson has also held senior management positions at BF Goodrich Aerospace and General Motors Corporation.

Kenneth R. Trammell Mr. Trammell has served as our Executive Vice President and Chief Financial Officer since January 2006. Mr. Trammell was named our Senior Vice President and Chief Financial Officer in September 2003, having served as our Vice President and Controller since September 1999. From April 1997 to November 1999, he served as Corporate Controller of Tenneco Inc. He joined Tenneco Inc. in May 1996 as Assistant Controller. Before joining Tenneco Inc., Mr. Trammell spent 12 years with the international public accounting firm of Arthur Andersen LLP, last serving as a senior manager.

Neal A. Yanos Mr. Yanos was named Executive Vice President, Clean Air Division in February 2013. He served as Executive Vice President, North America from July 2008 to February 2013. Prior to that, he served as our Senior Vice President and General Manager North American Original Equipment Ride Control and North American Aftermarket since May 2003. He joined our Monroe ride control division as a process engineer in 1988 and since that time has served in a broad range of assignments including product engineering, strategic planning, business development, finance, program management and marketing, including Director of our North American Original Equipment GM/VW business unit and most recently as our Vice President and General Manager North American Original Equipment Ride Control from December 2000. Before joining our company, Mr. Yanos was employed in various engineering positions by Sheller Globe Inc. from 1985 to 1988.

Brent J. Bauer Mr. Bauer has served as our Senior Vice President and General Manager North American Original Equipment Emission Control since May 2002. Prior to this appointment, Mr. Bauer was named Vice President and General Manager European and North American Original Equipment Emission Control in July 2001. Mr. Bauer joined Tenneco Automotive in August 1996 as a Plant Manager and was named Vice President and General Manager European Original Equipment Emission Control in September 1999. Prior to joining Tenneco, he was employed at AeroquipVickers Corporation for 20 years in positions of increasing responsibility serving most recently as Director of Operations.

Gregg Bolt Mr. Bolt was named our Senior Vice President, Global Human Resources and Administration in February 2013. Prior to joining Tenneco, Mr. Bolt worked for Quad/Graphics, Inc. as Executive Vice President, Human Resources and Administration from March 2009 to January 2013. Previously, he was with Johnson Controls Inc. for more than 10 years, serving most recently as Vice President, Human Resources for JCI s Building Efficiency division.

Michael J. Charlton Mr. Charlton was named Senior Vice President, Global Manufacturing Development and European Cost Reduction Initiatives in February 2013. He served as our Senior Vice President, Global Supply Chain Management and Manufacturing from January 2010 to February 2013. Mr. Charlton served as our Vice President, Global Supply Chain Management and Manufacturing from November 2008 through December 2009. Mr. Charlton served as Tenneco s Managing Director for India from January 2008 until November 2008. Prior to that, he served as the operations director for the Company s emission control business in Europe since 2005. Prior to joining Tenneco in 2005, Mr. Charlton held a variety of positions of increasing responsibility at TRW Automotive, the most recent being Lead Director, European Purchasing and Operations for the United Kingdom.

James D. Harrington Mr. Harrington has served as our Senior Vice President, General Counsel and Corporate Secretary since June 2009 and is responsible for managing our worldwide legal affairs including

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corporate governance and compliance. Mr. Harrington joined us in January 2005 as Corporate Counsel and was named Vice President Law in July 2007. Prior to joining Tenneco, he worked at Mayer Brown LLP in the firm s corporate and securities practice.

Barbara A. Kluth Ms. Kluth has served as Senior Vice President, Global Human Resources since March 2011. She was named Vice President, Global Human Resources in April 2010. In December 2001, she was named Executive Director, HR, North America after beginning her career in human resources in 1988 as HR manager for our Marshall, Michigan facility. She joined Tenneco in 1985 as an internal auditor.

Paul D. Novas Mr. Novas has served as our Vice President and Controller since July 2006. Mr. Novas served as Vice President, Finance and Administration for Tenneco Europe from January 2004 until July 2006 and as Vice President and Treasurer of Tenneco from November 1999 until January 2004. Mr. Novas joined Tenneco in 1996 as assistant treasurer responsible for corporate finance and North American treasury operations. Prior to joining Tenneco, Mr. Novas worked in the treasurer s office of General Motors Corporation for ten years.

PART II

ITEM 5. MARKET FOR REGISTRANT S COMMON EQUITY, RELATED STOCKHOLDER MATTERS, AND ISSUER PURCHASES OF EQUITY SECURITIES.

Our outstanding shares of common stock, par value $.01 per share, are listed on the New York and Chicago Stock Exchanges. The following table sets forth, for the periods indicated, the high and low sales prices of our common stock on the New York Stock Exchange Composite Transactions Tape.

	Sales Prices	
Quarter	**High**	**Low**
2012		