Eaton Corp plc
Form 10-K
February 22, 2017

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K
Annual report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934
For the year ended December 31, 2016
Commission file number 000-54863
EATON CORPORATION plc
(Exact name of registrant as specified in its charter)

Ireland	98-1059235
(State or other jurisdiction of incorporation or organization)	(IRS Employer Identification Number)
Eaton House, 30 Pembroke Road, Dublin 4, Ireland	D04 Y0C2
(Address of principal executive offices)	(Zip code)

+353 1637 2900
(Registrant's telephone number, including area code)

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

Title of each class	Name of each exchange on which registered
Ordinary Shares ($0.01 par value)	The New York Stock Exchange

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 o
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 o No þ
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 o

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 (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes þ No o

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

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 definitions of “large accelerated filer,” “accelerated filer” and “smaller reporting company” in Rule 12b-2 of the Exchange Act.

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

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

The aggregate market value of Ordinary Shares held by non-affiliates of the registrant as of June 30, 2016 was $27.2 billion.

As of January 31, 2017, there were 449.7 million Ordinary Shares outstanding.

Documents Incorporated By Reference

Portions of the Proxy Statement for the 2017 annual shareholders meeting are incorporated by reference into Part III.

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Part I

Item 1. Business.

Eaton Corporation plc (Eaton or the Company) is a power management company with 2016 net sales of $19.7 billion. The Company provides energy-efficient solutions that help its customers effectively manage electrical, hydraulic and mechanical power more efficiently, safely and sustainably. Eaton has approximately 95,000 employees in over 60 countries and sells products to customers in more than 175 countries.

Eaton electronically files or furnishes reports pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (Exchange Act) to the United States Securities and Exchange Commission (SEC), including annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and proxy and information statements, as well as any amendments to those reports. As soon as reasonably practicable, these reports are available free of charge through the Company's Internet website at http://www.eaton.com. These filings are also accessible on the SEC's Internet website at http://www.sec.gov.

Business Segment Information

Information by business segment and geographic region regarding principal products, principal markets, methods of distribution, net sales, operating profit and assets is presented in Note 15 of the Notes to the Consolidated Financial Statements. Additional information regarding Eaton's segments and business is presented below.

Electrical Products and Electrical Systems and Services

Principal methods of competition in these segments are performance of products and systems, technology, customer service and support, and price. Eaton has a strong competitive position in these segments and, with respect to many products, is considered among the market leaders. In normal economic cycles, sales of these segments are historically lower in the first quarter and higher in the third and fourth quarters of a year. In 2016, 16% of these segments' sales were made to seven large distributors of electrical products and electrical systems and services.

Hydraulics

Principal methods of competition in this segment are product performance, geographic coverage, service, and price. Eaton has a strong competitive position in this segment and, with respect to many products, is considered among the market leaders. Sales of this segment are historically higher in the first and second quarters and lower in the third and fourth quarters of the year. In 2016, 11% of this segment's sales were made to three large original equipment manufacturers or distributors of agricultural, construction, and industrial equipment and parts.

Aerospace

Principal methods of competition in this segment are total cost of ownership, product and system performance, quality, design engineering capabilities, and timely delivery. Eaton has a strong competitive position in this segment and, with respect to many products and platforms, is considered among the market leaders. In 2016, 29% of this segment's sales were made to three large original equipment manufacturers of aircraft.

Vehicle

Principal methods of competition in this segment are product performance, technology, global service, and price. Eaton has a strong competitive position in this segment and, with respect to many products, is considered among the market leaders. In 2016, 68% of this segment's sales were made to nine large original equipment manufacturers of vehicles and related components.

Information Concerning Eaton's Business in General

Raw Materials

Eaton's major requirements for raw materials include iron, steel, copper, nickel, aluminum, brass, tin, silver, lead, molybdenum, titanium, vanadium, rubber, plastic, electronic components, insulating materials and fluids. Materials are purchased in various forms, such as extrusions, castings, powder metal, metal sheets and strips, forging billets, bar stock, and plastic pellets. Raw materials, as well as parts and other components, are purchased from many suppliers. Under normal circumstances, the Company has no difficulty obtaining its raw materials. In 2016, Eaton maintained appropriate levels of inventory to prevent shortages and did not experience any availability constraints.

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Patents and Trademarks
Eaton considers its intellectual property, including without limitation patents, trade names, domain names, trademarks, confidential information, and trade secrets to be of significant value to its business as a whole. The Company's products are manufactured, marketed and sold under a portfolio of patents, trademarks, licenses, and other forms of intellectual property, some of which expire or are allowed to lapse at various dates in the future. Eaton develops and acquires new intellectual property on an ongoing basis and considers all of its intellectual property to be valuable. Based on the broad scope of the Company's product lines, management believes that the loss or expiration of any single intellectual property right would not have a material effect on Eaton's consolidated financial statements or its business segments. The Company's policy is to file applications and obtain patents for the majority of its novel and innovative new products including product modifications and improvements.
Order Backlog
A significant portion of open orders placed with Eaton are by original equipment manufacturers or distributors. These open orders are not considered firm as they have been historically subject to month-to-month releases by customers. In measuring backlog orders, only the amount of orders to which customers are firmly committed are included. Using this criterion, total backlog at December 31, 2016 and 2015 was approximately $4.0 billion and $4.1 billion, respectively. Backlog should not be relied upon as being indicative of results of operations for future periods.
Research and Development
Research and development expenses for new products and improvement of existing products in 2016, 2015 and 2014 were $589 million, $625 million, and $647 million, respectively. Over the past five years, the Company has invested approximately $2.9 billion in research and development.
Environmental Contingencies
Operations of the Company involve the use and disposal of certain substances regulated under environmental protection laws. Eaton continues to modify processes on an ongoing, regular basis in order to reduce the impact on the environment, including the reduction or elimination of certain chemicals used in, and wastes generated from, operations. Compliance with laws that have been enacted or adopted regulating the discharge of materials into the environment, or otherwise relating to the protection of the environment, are not expected to have a material adverse effect upon earnings or the competitive position of the Company. Eaton's estimated capital expenditures for environmental control facilities are not expected to be material for 2017 and 2018. Information regarding the Company's liabilities related to environmental matters is presented in Note 8 of the Notes to the Consolidated Financial Statements.

Item 1A. Risk Factors.
Among the risks that could materially adversely affect Eaton's businesses, financial condition or results of operations are the following:
Volatility of end markets that Eaton serves.
Eaton's segment revenues, operating results, and profitability have varied in the past and may vary from quarter to quarter in the future. Profitability can be negatively impacted by volatility in the end markets that Eaton serves. The Company has undertaken measures to reduce the impact of this volatility through diversification of the markets it serves and expansion of the geographic regions in which it operates. Future downturns in any of the markets could adversely affect revenues, operating results, and profitability.
Eaton's operating results depend in part on continued successful research, development, and marketing of new and/or improved products and services, and there can be no assurance that Eaton will continue to successfully introduce new products and services.
The success of new and improved products and services depends on their initial and continued acceptance by Eaton's customers. The Company's businesses are affected, to varying degrees, by technological change and corresponding shifts in customer demand, which could result in unpredictable product transitions or shortened life cycles. Eaton may experience difficulties or delays in the research, development, production, or marketing of new products and services which may prevent Eaton from recouping or realizing a return on the investments required to bring new products and services to market.

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Eaton's ability to attract, develop and retain executives and other qualified employees is crucial to the Company's results of operations and future growth.

Eaton depends on the continued services and performance of key executives, senior management, and skilled personnel, particularly professionals with experience in its industry and business. Eaton cannot be certain that any of these individuals will continue his or her employment with the Company. A lengthy period of time is required to hire and develop replacement personnel when skilled personnel depart. An inability to hire, develop, and retain a sufficient number of qualified employees could materially hinder the business by, for example, delaying Eaton's ability to bring new products to market or impairing the success of the Company's operations.

Eaton's operations depend on production facilities throughout the world, which subjects them to varying degrees of risk of disrupted production.

Eaton manages businesses with manufacturing facilities worldwide. The Company's manufacturing facilities and operations could be disrupted by a natural disaster, labor strike, war, political unrest, terrorist activity, economic upheaval, or public health concerns. Some of these conditions are more likely in certain geographic regions in which Eaton operates. Any such disruption could cause delays in shipments of products and the loss of sales and customers, and insurance proceeds may not adequately compensate for losses.

If Eaton is unable to protect its information technology infrastructure against service interruptions, data corruption, cyber-based attacks or network security breaches, operations could be disrupted or data confidentiality lost.

Eaton relies on information technology networks and systems, including the Internet, to process, transmit and store electronic information, and to manage or support a variety of business processes and activities, including procurement, manufacturing, distribution, invoicing and collection. These technology networks and systems may be susceptible to damage, disruptions or shutdowns due to failures during the process of upgrading or replacing software, databases or components; power outages; hardware failures; or computer viruses. In addition, security breaches could result in unauthorized disclosure of confidential information. If these information technology systems suffer severe damage, disruption, or shutdown, and business continuity plans do not effectively resolve the issues in a timely manner, there could be a negative impact on operating results or the Company may suffer financial or reputational damage.

Eaton's global operations subject it to economic risk as Eaton's results of operations may be adversely affected by changes in government regulations and policies and currency fluctuations.

Operating globally subjects Eaton to changes in government regulations and policies in a large number of jurisdictions around the world, including those related to tariffs and trade barriers, investments, property ownership rights, taxation, exchange controls, and repatriation of earnings. Changes in the relative values of currencies occur from time to time and could affect Eaton's operating results. While the Company monitors exchange rate exposures and attempts to reduce these exposures through hedging activities, these risks could adversely affect operating results.

Eaton may be subject to risks relating to changes in its tax rates or exposure to additional income tax liabilities.

Eaton is subject to income taxes in many jurisdictions around the world. Income tax liabilities are subject to the allocation of income among various tax jurisdictions. The Company's effective tax rate could be affected by changes in the mix among earnings in countries with differing statutory tax rates, changes in the valuation allowance of deferred tax assets, or changes in tax laws. With the Administration change in the United States, tax reform is anticipated. It is uncertain what, if any, impact this reform may have to Eaton since proposals have not been reduced to legislative language at this time. The amount of income taxes paid is subject to ongoing audits by tax authorities in the countries in which Eaton operates. If these audits result in assessments different from amounts reserved, future financial results may include unfavorable adjustments to the Company's tax liabilities.

Eaton uses a variety of raw materials and components in its businesses, and significant shortages, price increases, or supplier insolvencies could increase operating costs and adversely impact the competitive positions of Eaton's products.

Eaton's major requirements for raw materials are described above in Item 1 “Raw Materials”. Significant shortages could affect the prices Eaton's businesses are charged and the competitive position of their products and services, all of which could adversely affect operating results.

Further, Eaton's suppliers of component parts may increase their prices in response to increases in costs of raw materials that they use to manufacture component parts. The Company may not be able to increase its prices commensurately with its increased costs, adversely affecting operating results.

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Eaton may be unable to adequately protect its intellectual property rights, which could affect the Company's ability to compete.

Protecting Eaton's intellectual property rights is critical to its ability to compete and succeed. The Company owns a large number of patents and patent applications worldwide, as well as trademark and copyright registrations that are necessary, and contribute significantly, to the preservation of Eaton's competitive position in various markets. Although management believes that the loss or expiration of any single intellectual property right would not have a material effect on the results of operations or financial position of Eaton or its business segments, there can be no assurance that any one, or more, of these patents and other intellectual property will not be challenged, invalidated, or circumvented by third parties. Eaton enters into confidentiality and invention assignment agreements with the Company's employees, and into non-disclosure agreements with suppliers and appropriate customers, so as to limit access to and disclosure of proprietary information. These measures may not suffice to deter misappropriation or independent third party development of similar technologies.

Eaton is subject to litigation and environmental regulations that could adversely impact Eaton's businesses.

At any given time, Eaton may be subject to litigation, the disposition of which may have a material adverse effect on the Company's businesses, financial condition or results of operations. Information regarding current legal proceedings is presented in Note 8 and Note 9 of the Notes to the Consolidated Financial Statements.

Legislative and regulatory action could materially adversely affect Eaton.

Legislative and regulatory action may be taken in the U.S. which, if ultimately enacted, could override tax treaties upon which Eaton relies or broaden the circumstances under which the Company would be considered a U.S. resident, each of which could materially and adversely affect its effective tax rate. Eaton cannot predict the outcome of any specific legislative or regulatory proposals. However, if proposals were enacted that had the effect of disregarding the incorporation in Ireland or limiting Eaton's ability as an Irish company to take advantage of tax treaties with the U.S., the Company could be subject to increased taxation and/or potentially significant expense.

Additionally, existing free trade laws and regulations, such as the North American Free Trade Agreement, provide certain beneficial duties and tariffs for qualifying imports and exports, subject to compliance with the applicable classification and other requirements. Changes in laws or policies governing the terms of foreign trade, and in particular increased trade restrictions, tariffs or taxes on imports from countries where we manufacture products could have an impact on our business and financial results.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

Eaton's principal executive offices are located at Eaton House, 30 Pembroke Road, Dublin 4, Ireland D04 Y0C2. The Company maintains manufacturing facilities at 330 locations in 42 countries. The Company is a lessee under a number of operating leases for certain real properties and equipment, none of which is material to its operations. Management believes that the existing manufacturing facilities are adequate for its operations and that the facilities are maintained in good condition.

Item 3. Legal Proceedings.

Information regarding the Company's current legal proceedings is presented in Note 8 and Note 9 of the Notes to the Consolidated Financial Statements.

Item 4. Mine Safety Disclosures.

Not applicable.

Executive Officers of the Registrant

Information regarding executive officers of the Company is presented in Item 10 of this Form 10-K Report.

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Part II

Item 5. Market for the Registrant's Ordinary Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

The Company's ordinary shares are listed for trading on the New York Stock Exchange. At December 31, 2016, there were 17,627 holders of record of the Company's ordinary shares. Additionally, 21,235 current and former employees were shareholders through participation in the Eaton Savings Plan (ESP), Eaton Personal Investment Plan (EPIP), and the Eaton Puerto Rico Retirement Savings Plan.

Information regarding cash dividends paid, and the high and low market price per ordinary share, for each quarter in 2016 and 2015 is presented in "Quarterly Data" of this Form 10-K. Information regarding equity-based compensation plans required by Regulation S-K Item 201(d) is provided in Item 12 of this Form 10-K Report.

Irish Taxes Applicable to Dividends

In certain circumstances, Eaton will be required to deduct Irish dividend withholding tax (currently at the rate of 20%) from dividends paid to its shareholders. In the majority of cases, however, shareholders resident in the U.S. will not be subject to Irish withholding tax, and shareholders resident in a number of other countries will not be subject to Irish withholding tax provided that they complete certain Irish tax forms. Effective January 1, 2018, shareholders that reside in the US who hold their shares outside of a Depository Trust Company will be subject to Irish withholding tax on dividends unless they complete certain Irish tax forms.

Irish income tax may also arise with respect to dividends paid on Eaton shares. Dividends paid in respect of Eaton shares will generally not be subject to Irish income tax where the beneficial owner of these shares is exempt from dividend withholding tax, unless the beneficial owner of the dividend has some connection with Ireland other than his or her shareholding in Eaton.

Eaton shareholders who receive their dividends subject to Irish dividend withholding tax will generally have no further liability to Irish income tax on the dividends unless the beneficial owner of the dividend has some connection with Ireland other than his or her shareholding in Eaton.

Issuer's Purchases of Equity Securities

During the fourth quarter of 2016, 2.6 million ordinary shares were repurchased in the open market at a total cost of $163 million. These shares were repurchased under the program approved by the Board on February 24, 2016. A summary of the shares repurchased in the fourth quarter of 2016 follows:

Month	Total number of shares purchased	Average price paid per share	Total number of shares purchased as part of publicly announced plans or programs	Approximate dollar value of shares that may yet be purchased under the plans or programs (in millions)
October	—	$ —	—	$ 2,015
November	2,635,546	$ 61.63	2,635,546	$ 1,853
December	—	$ —	—	$ 1,853
Total	2,635,546	$ —	2,635,546	

Item 6. Selected Financial Data.

Information regarding selected financial data is presented in the "Five-Year Consolidated Financial Summary" of this Form 10-K.

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

Information required by this Item is presented in “Management's Discussion and Analysis of Financial Condition and Results of Operations” of this Form 10-K.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk.
Information regarding market risk is presented in “Market Risk Disclosure” of this Form 10-K.

Item 8. Financial Statements and Supplementary Data.
The reports of the independent registered public accounting firm, consolidated financial statements, and notes to consolidated financial statements are presented in Item 15 of this Form 10-K.
Information regarding selected quarterly financial information for 2016 and 2015 is presented in “Quarterly Data” of this Form 10-K.

Item 9. Change in and Disagreements with Accountants on Accounting and Financial Disclosure.
None.

Item 9A. Controls and Procedures.
Evaluation of Disclosure Controls and Procedures - Pursuant to SEC Rule 13a-15, an evaluation was performed under the supervision and with the participation of Eaton's management, including Craig Arnold - Principal Executive Officer; and Richard H. Fearon - Principal Financial Officer, of the effectiveness of the design and operation of the Company's disclosure controls and procedures. Based on that evaluation, Eaton's management concluded that the Company's disclosure controls and procedures were effective as of December 31, 2016.
Disclosure controls and procedures are designed to ensure that information required to be disclosed in Company reports filed or submitted under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Securities and Exchange Commission's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed in Company reports filed under the Exchange Act is accumulated and communicated to management, including the Company's Principal Executive Officer and Principal Financial Officer, to allow timely decisions regarding required disclosure.
Pursuant to Section 404 of the Sarbanes Oxley Act of 2002 and the rules and regulations adopted pursuant thereto, Eaton has included a report of management's assessment of the effectiveness of internal control over financial reporting, which is included in Item 15 of this Form 10-K.
“Report of Independent Registered Public Accounting Firm” relating to internal control over financial reporting as of December 31, 2016 is included in Item 15 of this Form 10-K.
During the fourth quarter of 2016, there was no change in Eaton's internal control over financial reporting that materially affected, or is reasonably likely to materially affect, internal control over financial reporting.

Item 9B. Other Information.
Disclosure Pursuant to Section 13(r) of the Exchange Act
Set forth below is a description of all matters reported by us pursuant to Section 219 of the Iran Threat Reduction and Syria Human Rights Act of 2012 and Section 13(r) of the Exchange Act. Concurrently with the filing of this Annual Report, we are filing a notice pursuant to Section 13(r) of the Exchange Act that such matters have been disclosed in this Annual Report.
During the fourth quarter, we engaged in one transaction requiring disclosure under Section 13(r). On October 23, 2016, our wholly-owned non-U.S. subsidiary sold a plastic panel board to Pars Petrochemical Company, which is owned by the government of Iran. We received total net revenue of approximately 1,311 Euros and realized net profits of approximately 392 Euros from the sale (approximately $1,426 and $426, respectively, at the exchange rates for U.S. dollars at the date of the sale transactions). One or more of our non-U.S. subsidiaries intend to continue doing business in Iran under General License H in compliance with U.S. economic sanctions and export control laws, though the Company has no assets or employees in Iran.

Part III

Item 10. Directors, Executive Officers and Corporate Governance.
Information required with respect to the directors of the Company is set forth under the caption “Election of Directors” in the Company's definitive Proxy Statement to be filed on or about March 17, 2017, and is incorporated by reference.
A listing of executive officers, their ages, positions and offices held over the past five years, as of February 1, 2017, follows:

Name	Age	Position (Date elected to position)
Craig Arnold	56	Chairman of Eaton Corporation plc (June 1, 2016 - present) Chief Executive Officer of Eaton Corporation (June 1, 2016 - present) Director of Eaton Corporation plc (September 1, 2015 - present) President and Chief Operating Officer of Eaton Corporation (September 1, 2015 - May 31, 2016) Vice Chairman and Chief Operating Officer - Industrial Sector of Eaton Corporation (February 1, 2009 - August 31, 2015)
Richard H. Fearon	60	Director of Eaton Corporation plc (September 1, 2015 - present) Vice Chairman and Chief Financial and Planning Officer of Eaton Corporation (April 24, 2002 - present)
Revathi Advaithi	49	Chief Operating Officer - Electrical Sector of Eaton Corporation (September 1, 2015 - present) President of Electrical Sector, Americas of Eaton Corporation (April 1, 2012 - August 31, 2015) President, Electrical Sector, Asia Pacific of Eaton Corporation (July 1, 2009 - March 31, 2012)
Uday Yadav	53	Chief Operating Officer - Industrial Sector of Eaton Corporation (September 1, 2015 - present) President of Aerospace Group of Eaton Corporation (August 1, 2012 - August 31, 2015) Executive Vice President, Eaton Business System (January 1, 2010 - July 31, 2012)
Cynthia K. Brabander	55	Executive Vice President and Chief Human Resources Officer of Eaton Corporation (March 1, 2012 - present)
Mark M. McGuire	59	Executive Vice President and General Counsel of Eaton Corporation (December 1, 2005 - present)
Thomas E. Moran	52	Senior Vice President and Secretary of Eaton Corporation plc (November 27, 2012 - present) Senior Vice President and Secretary of Eaton Corporation (October 1, 2008 - January 1, 2013)

Ken D. Semelsberger	55	Senior Vice President and Controller of Eaton Corporation (November 1, 2013 - present) Senior Vice President, Finance and Planning - Industrial Sector of Eaton Corporation (February 1, 2009 - October 31, 2013)

There are no family relationships among the officers listed, and there are no arrangements or understandings pursuant to which any of them were elected as officers. All officers hold office for one year and until their successors are elected and qualified, unless otherwise specified by the Board of Directors; provided, however, that any officer is subject to removal with or without cause, at any time, by a vote of a majority of the Board of Directors.
Information required with respect to compliance with Section 16(a) of the Exchange Act is set forth under the caption "Section 16(a) Beneficial Ownership Reporting" in the Company's definitive Proxy Statement to be filed on or about March 17, 2017, and is incorporated by reference.

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The Company has adopted a Code of Ethics, which applies to the directors, officers and employees worldwide. This document is available on the Company's website at http://www.eaton.com.
There were no changes during the fourth quarter 2016 to the procedures by which security holders may recommend nominees to the Company's Board of Directors.
Information related to the Audit Committee, and members of the Committee who are financial experts, is set forth under the caption “Board Committees - Audit Committee” in the definitive Proxy Statement to be filed on or about March 17, 2017, and is incorporated by reference.

Item 11. Executive Compensation.
Information required with respect to executive compensation is set forth under the caption “Compensation Discussion and Analysis” in the Company's definitive Proxy Statement to be filed on or about March 17, 2017, and is incorporated by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.
Information required with respect to securities authorized for issuance under equity-based compensation plans is set forth under the caption “Equity Compensation Plans” in the Company's definitive Proxy Statement to be filed on or about March 17, 2017, and is incorporated by reference.
Information required with respect to security ownership of certain beneficial owners, is set forth under the caption “Share Ownership Tables” in the Company's definitive Proxy Statement to be filed on or about March 17, 2017, and is incorporated by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence.
Information required with respect to certain relationships and related transactions is set forth under the caption “Review of Related Person Transactions” in the Company's definitive Proxy Statement to be filed on or about March 17, 2017, and is incorporated by reference.
Information required with respect to director independence is set forth under the caption “Director Independence” in the Company's definitive Proxy Statement to be filed on or about March 17, 2017, and is incorporated by reference.

Item 14. Principal Accounting Fees and Services.
Information required with respect to principal accountant fees and services is set forth under the caption “Audit Committee Report” in the Company's definitive Proxy Statement to be filed on or about March 17, 2017, and is incorporated by reference.

Part IV

Item 15. Exhibits, Financial Statement Schedules.
(a) (1) The reports of the independent registered public accounting firm, consolidated financial statements and notes to consolidated financial statements are included in Item 8 above:
Reports of Independent Registered Public Accounting Firm
Consolidated Statements of Income - Years ended December 31, 2016, 2015 and 2014
Consolidated Statements of Comprehensive Income - Years ended December 31, 2016, 2015 and 2014
Consolidated Balance Sheets - December 31, 2016 and 2015
Consolidated Statements of Cash Flows - Years ended December 31, 2016, 2015 and 2014
Consolidated Statements of Shareholders' Equity - Years ended December 31, 2016, 2015 and 2014
Notes to Consolidated Financial Statements

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(2) All other schedules for which provision is made in Regulation S-X of the SEC are not required under the related instructions or are inapplicable and, therefore, have been omitted.
(3) Exhibits incorporated by reference to or filed in conjunction with this form 10-K are listed in the Exhibit Index.
(b) Exhibits
Certain exhibits required by this portion of Item 15 are filed as a separate section of this Form 10-K Report.

Item 16. Form 10-K Summary.
Not applicable.

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SIGNATURES

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

EATON CORPORATION plc
Registrant

Date: February 22, 2017 By: /s/ Richard H. Fearon
Richard H. Fearon
(On behalf of the registrant and as Principal Financial Officer)

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

Date: February 22, 2017

Signature	Title	Signature	Title
* Craig Arnold	Chairman, Principal Executive Officer; Director	/s/ Richard H. Fearon Richard H. Fearon	Principal Financial Officer, Director
/s/ Ken D. Semelsberger Ken D. Semelsberger	Principal Accounting Officer	* Todd M. Bluedorn	Director
* Christopher M. Connor	Director	* Michael J. Critelli	Director
* Charles E. Golden	Director	* Linda A. Hill	Director
* Arthur E. Johnson	Director	* Deborah L. McCoy	Director
/s/ Gregory R. Page Gregory R. Page	Director	* Sandra Pianalto	Director
* Gerald B. Smith	Director	* Dorothy C. Thompson	Director

*By /s/ Richard H. Fearon
Richard H. Fearon, Attorney-in-Fact for the officers
and directors signing in the capacities indicated

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Shareholders of Eaton Corporation plc

We have audited the accompanying consolidated balance sheets of Eaton Corporation plc (“the Company”) as of December 31, 2016 and 2015, and the related consolidated statements of income, comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2016. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of the Company at December 31, 2016 and 2015, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2016, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Company's internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) and our report dated February 22, 2017 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP
Cleveland, Ohio
February 22, 2017

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MANAGEMENT'S REPORT ON FINANCIAL STATEMENTS

We have prepared the accompanying consolidated financial statements and related information of Eaton Corporation plc ("Eaton") included herein for the three years ended December 31, 2016. The primary responsibility for the integrity of the financial information included in this annual report rests with management. The financial information included in this annual report has been prepared in accordance with accounting principles generally accepted in the United States based on our best estimates and judgments and giving due consideration to materiality. The opinion of Ernst & Young LLP, Eaton's independent registered public accounting firm, on those financial statements is included herein.

Eaton has high standards of ethical business practices supported by the Eaton Code of Ethics and corporate policies. Careful attention is given to selecting, training and developing personnel, to ensure that management's objectives of establishing and maintaining adequate internal controls and unbiased, uniform reporting standards are attained. Our policies and procedures provide reasonable assurance that operations are conducted in conformity with applicable laws and with the Company's commitment to a high standard of business conduct.

The Board of Directors pursues its responsibility for the quality of Eaton's financial reporting primarily through its Audit Committee, which is composed of five independent directors. The Audit Committee meets regularly with management, the internal auditors and the independent registered public accounting firm to ensure that they are meeting their responsibilities and to discuss matters concerning accounting, control, audits and financial reporting. The internal auditors and independent registered public accounting firm have full and free access to senior management and the Audit Committee.

/s/ Craig Arnold	/s/ Richard H. Fearon	/s/ Ken D. Semelsberger
Principal Executive Officer	Principal Financial Officer	Principal Accounting Officer

February 22, 2017

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Shareholders of Eaton Corporation plc

We have audited Eaton Corporation plc's ("the Company") internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) (the COSO criteria). The Company's management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016 based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of the Company as of December 31, 2016 and 2015, and the related consolidated statements of income, comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2016 and our report dated February 22, 2017 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Cleveland, Ohio
February 22, 2017

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MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

The management of Eaton Corporation plc ("Eaton") is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Exchange Act rules 13a-15(f)).

Under the supervision and with the participation of Eaton's management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of the Company's internal control over financial reporting as of December 31, 2016. In conducting this evaluation, we used the framework set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control - Integrated Framework (2013 Framework). Based on this evaluation under the framework referred to above, management concluded that the Company's internal control over financial reporting was effective as of December 31, 2016.

The independent registered public accounting firm Ernst & Young LLP has issued an audit report on the effectiveness of the Company's internal control over financial reporting as of December 31, 2016. This report is included herein.

/s/ Craig Arnold	/s/ Richard H. Fearon	/s/ Ken D. Semelsberger
Principal Executive Officer	Principal Financial Officer	Principal Accounting Officer

February 22, 2017

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EATON CORPORATION plc
CONSOLIDATED STATEMENTS OF INCOME

	Year ended December 31		
(In millions except for per share data)	2016	2015	2014
Net sales	$19,747	$20,855	$22,552
Cost of products sold	13,400	14,292	15,646
Selling and administrative expense	3,505	3,596	3,810
Litigation settlements	—	—	644
Research and development expense	589	625	647
Interest expense - net	233	232	227
Other income - net	(107)	(35)	(183)
Income before income taxes	2,127	2,145	1,761
Income tax expense (benefit)	202	164	(42)
Net income	1,925	1,981	1,803
Less net income for noncontrolling interests	(3)	(2)	(10)
Net income attributable to Eaton ordinary shareholders	$1,922	$1,979	$1,793
Net income per share attributable to Eaton ordinary shareholders			
Diluted	$4.21	$4.23	$3.76
Basic	4.22	4.25	3.78
Weighted-average number of ordinary shares outstanding			
Diluted	456.5	467.1	476.8
Basic	455.0	465.5	474.1
Cash dividends declared per ordinary share	$2.28	$2.20	$1.96

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

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EATON CORPORATION plc
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	Year ended December 31		
(In millions)	2016	2015	2014
Net income	$ 1,925	$ 1,981	$ 1,803
Less net income for noncontrolling interests	(3)	(2)	(10)
Net income attributable to Eaton ordinary shareholders	1,922	1,979	1,793
Other comprehensive loss, net of tax			
Currency translation and related hedging instruments	(570)	(1,078)	(1,019)
Pensions and other postretirement benefits	(6)	111	(315)
Cash flow hedges	(9)	3	(5)
Other comprehensive loss attributable to Eaton ordinary shareholders	(585)	(964)	(1,339)
Total comprehensive income attributable to Eaton ordinary shareholders	$ 1,337	$ 1,015	$ 454

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

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EATON CORPORATION plc
CONSOLIDATED BALANCE SHEETS

	December 31	
(In millions)	2016	2015
Assets		
Current assets		
Cash	$543	$268
Short-term investments	203	177
Accounts receivable - net	3,560	3,479
Inventory	2,254	2,323
Prepaid expenses and other current assets	381	369
Total current assets	6,941	6,616
Property, plant and equipment		
Land and buildings	2,369	2,383
Machinery and equipment	5,670	5,501
Gross property, plant and equipment	8,039	7,884
Accumulated depreciation	(4,596)	(4,319)
Net property, plant and equipment	3,443	3,565
Other noncurrent assets		
Goodwill	13,201	13,479
Other intangible assets	5,514	6,014
Deferred income taxes	360	362
Other assets	960	960
Total assets	$30,419	$30,996
Liabilities and shareholders' equity		
Current liabilities		
Short-term debt	$14	$426
Current portion of long-term debt	1,552	242
Accounts payable	1,718	1,758
Accrued compensation	379	366
Other current liabilities	1,822	1,833
Total current liabilities	5,485	4,625
Noncurrent liabilities		
Long-term debt	6,711	7,746
Pension liabilities	1,659	1,586
Other postretirement benefits liabilities	368	440
Deferred income taxes	321	390
Other noncurrent liabilities	934	978
Total noncurrent liabilities	9,993	11,140
Shareholders' equity		
Ordinary shares (449.4 million outstanding in 2016 and 458.8 million in 2015)	5	5
Capital in excess of par value	11,845	11,701
Retained earnings	7,498	7,346
Accumulated other comprehensive loss	(4,448)	(3,863)

Shares held in trust	(3)	(3)
Total Eaton shareholders’ equity	14,897	15,186
Noncontrolling interests	44	45
Total equity	14,941	15,231
Total liabilities and equity	$30,419	$30,996

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

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EATON CORPORATION plc
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year ended December 31		
(In millions)	2016	2015	2014
Operating activities			
Net income	$ 1,925	$ 1,981	$ 1,803
Adjustments to reconcile to net cash provided by operating activities			
Depreciation and amortization	929	925	983
Deferred income taxes	(80)	(100)	(382)
Pension and other postretirement benefits expense	235	323	293
Contributions to pension plans	(262)	(330)	(362)
Contributions to other postretirement benefits plans	(30)	(31)	(40)
Excess tax benefit from equity-based compensation	(1)	(1)	(20)
Gain on sale of businesses	—	—	(68)
Changes in working capital			
Accounts receivable - net	(170)	5	(205)
Inventory	25	(20)	(152)
Accounts payable	—	(120)	49
Accrued compensation	20	(28)	(32)
Accrued income and other taxes	30	(9)	(73)
Other current assets	(21)	7	73
Other current liabilities	(62)	(76)	8
Other - net	14	(155)	3
Net cash provided by operating activities	2,552	2,371	1,878
Investing activities			
Capital expenditures for property, plant and equipment	(497)	(506)	(632)

Cash received from (paid for) acquisitions of businesses, net of cash acquired	1	(72)	2
Sales (purchases) of short-term investments - net	(40)	37	522
Proceeds from sales of businesses	—	1	282
Other - net	7	(35)	(31)
Net cash (used in) provided by investing activities	(529)	(575)	143
Financing activities			
Proceeds from borrowings	631	425	—
Payments on borrowings	(653)	(1,027)	(582)
Cash dividends paid	(1,037)	(1,026)	(929)
Exercise of employee stock options	74	52	54
Repurchase of shares	(730)	(682)	(650)
Excess tax benefit from equity-based compensation	1	1	20
Other - net	(6)	(10)	(43)
Net cash used in financing activities	(1,720)	(2,267)	(2,130)
Effect of currency on cash	(28)	(42)	(25)
Total increase (decrease) in cash	275	(513)	(134)
Cash at the beginning of the period	268	781	915
Cash at the end of the period	$ 543	$ 268	$ 781

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

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EATON CORPORATION plc
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

(In millions)	Ordinary shares Shares	Ordinary shares Dollars	Capital in excess of par value	Retained earnings	Accumulated other comprehensive loss	Shares held in trust	Total Eaton shareholders' equity	Noncontrolling interests	Total equity
Balance at January 1, 2014	475.1	$ 5	$ 11,483	$ 6,866	$ (1,560)	$ (3)	$ 16,791	$ 72	$ 16,863
Net income	—	—	—	1,793	—	—	1,793	10	1,803
Other comprehensive loss, net of tax					(1,339)		(1,339)	—	(1,339)
Cash dividends paid	—	—	—	(929)	—	—	(929)	(5)	(934)
Issuance of shares under equity-based compensation plans - net (net of income tax benefit of $20)	2.4	—	136	(2)	—	—	134	—	134
Purchase of additional noncontrolling interest of consolidated subsidiaries	—	—	(14)	—	—	—	(14)	(24)	(38)
Repurchase of shares	(9.6)	—	—	(650)	—	—	(650)	—	(650)
Balance at December 31, 2014	467.9	5	11,605	7,078	(2,899)	(3)	15,786	53	15,839
Net income	—	—	—	1,979	—	—	1,979	2	1,981
Other comprehensive loss, net of tax					(964)		(964)	—	(964)
Cash dividends paid	—	—	—	(1,026)	—	—	(1,026)	(9)	(1,035)
Issuance of shares under equity-based compensation plans - net (net of income tax benefit of $1)	2.2	—	99	(3)	—	—	96	—	96
Changes in noncontrolling interest of consolidated subsidiaries - net	—	—	(3)	—	—	—	(3)	(1)	(4)
Repurchase of shares	(11.3)	—	—	(682)	—	—	(682)	—	(682)
Balance at December 31, 2015	458.8	5	11,701	7,346	(3,863)	(3)	15,186	45	15,231
Net income	—	—	—	1,922	—	—	1,922	3	1,925
Other comprehensive loss, net of tax					(585)		(585)	—	(585)
Cash dividends paid	—	—	—	(1,037)	—	—	(1,037)	(2)	(1,039)
Issuance of shares under equity-based compensation plans - net (net of income tax benefit of $1)	2.4	—	144	(3)	—	—	141	—	141
Changes in noncontrolling interest of consolidated subsidiaries - net	—	—	—	—	—	—	—	(2)	(2)
Repurchase of shares	(11.8)	—	—	(730)	—	—	(730)	—	(730)
Balance at December 31, 2016	449.4	$ 5	$ 11,845	$ 7,498	$ (4,448)	$ (3)	$ 14,897	$ 44	$ 14,941

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

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EATON CORPORATION plc
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
Amounts are in millions unless indicated otherwise (per share data assume dilution).

Note 1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

General Information and Basis of Presentation

Eaton Corporation plc (Eaton or the Company) is a power management company with 2016 net sales of $19.7 billion. The Company provides energy-efficient solutions that help its customers effectively manage electrical, hydraulic and mechanical power more efficiently, safely and sustainably. Eaton has approximately 95,000 employees in over 60 countries and sells products to customers in more than 175 countries.

The consolidated financial statements of the Company have been prepared in accordance with generally accepted accounting principles in the United States. Preparation of the consolidated financial statements requires management to make estimates and assumptions that affect amounts reported in the consolidated financial statements and notes. Actual results could differ from these estimates. Management has evaluated subsequent events through the date the consolidated financial statements were filed with the Securities Exchange Commission.

The consolidated financial statements include the accounts of Eaton and all subsidiaries and other entities it controls. Intercompany transactions and balances have been eliminated. The equity method of accounting is used for investments in associate companies where the Company has significant influence and generally a 20% to 50% ownership interest. Equity investments are evaluated for impairment whenever events or circumstances indicate the book value of the investment exceeds fair value. An impairment would exist if there is an other-than-temporary decline in value. These associate companies are not material either individually, or in the aggregate, to Eaton's consolidated financial statements. Eaton does not have off-balance sheet arrangements or financings with unconsolidated entities. In the ordinary course of business, the Company leases certain real properties and equipment, as described in Note 8.

Eaton's functional currency is United States Dollars (USD). The functional currency for most subsidiaries is their local currency. Financial statements for these subsidiaries are translated at year-end exchange rates as to assets and liabilities and weighted-average exchange rates as to revenues and expenses. The resulting translation adjustments are recognized in Accumulated other comprehensive loss.

During 2016, the Company adopted Accounting Standards Update 2015-03, Interest - Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs (ASU 2015-03). ASU 2015-03 requires that debt issuance costs be presented in the balance sheet as a direct deduction from the related debt liability rather than an asset. The Company has applied this standard retrospectively. The adoption of ASU 2015-03 resulted in the reclassification of $35 within the Company's Consolidated Balance Sheets as of December 31, 2016 and December 31, 2015, respectively, from Other noncurrent assets to a reduction in Long-term debt.

During 2016, the Company adopted Accounting Standards Update 2015-07, Fair Value Measurement (Topic 820): Disclosures for Investments in Certain Entities That Calculate Net Asset Value per Share (or Its Equivalent) (ASU 2015-07). Topic 820 allows for investments to be valued at their net asset value if their share price is not published for current transactions (referred to as the practical expedient). Prior to ASU 2015-07, there has been diversity in practice related to how investments measured using the practical expedient are categorized within the fair value hierarchy. With the adoption of ASU 2015-07, these investments are no longer categorized in the fair value hierarchy, which eliminates the diversity in practice resulting from the way in which these investments were classified. In addition, ASU 2015-07 removes the requirement to make certain disclosures for these investments. The Company retrospectively applied the requirements of ASU 2015-07 for all comparative periods presented in Note 7 resulting in investments measured using the net asset value practical expedient no longer being categorized in the fair value hierarchy.

Certain prior year amounts have been reclassified to conform to the current year presentation.

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Revenue Recognition

Sales of products are recognized when a sales agreement is in place, products have been shipped to unaffiliated customers and title has transferred in accordance with shipping terms, the selling price is fixed and determinable and collectability is reasonably assured, all significant related acts of performance have been completed, and no other significant uncertainties exist. Shipping and handling costs billed to customers are included in Net sales and the related costs in Cost of products sold. Although the majority of the sales agreements contain standard terms and conditions, there are agreements that contain multiple elements or non-standard terms and conditions. As a result, judgment is required to determine the appropriate accounting, including whether the deliverables specified in these agreements should be treated as separate units of accounting for recognition purposes, and, if so, how the sales price should be allocated among the elements and when to recognize sales for each element. For delivered elements, sales generally are recognized only when the delivered elements have standalone value and there are no uncertainties regarding customer acceptance. Sales for service contracts generally are recognized as the services are provided.

Eaton records reductions to revenue for customer and distributor incentives, primarily comprised of rebates, at the time of the initial sale. Rebates are estimated based on sales terms, historical experience, trend analysis, and projected market conditions in the various markets served. The rebate programs offered vary across businesses due to the numerous markets Eaton serves, but the most common incentives relate to amounts paid or credited to customers for achieving defined volume levels.

Goodwill and Indefinite Life Intangible Assets

Goodwill is evaluated annually for impairment as of July 1 using either a quantitative or qualitative analysis. Goodwill is tested for impairment at the reporting unit level, which is equivalent to Eaton's operating segments and based on the net assets for each segment, including goodwill and intangible assets. Goodwill is assigned to each operating segment, as this represents the lowest level that constitutes a business and is the level at which management regularly reviews the operating results. The Company performs a quantitative analysis using a discounted cash flow model and other valuation techniques, but may elect to perform a qualitative analysis. Additionally, goodwill is evaluated for impairment whenever an event occurs or circumstances change that would indicate that it is more likely than not that the fair value of an operating segment is less than its carrying amount.

Goodwill impairment testing for 2016 was performed using a quantitative analysis under which the fair value for each reporting unit was estimated using a discounted cash flow model, which considered forecasted cash flows discounted at an estimated weighted-average cost of capital. The forecasted cash flows were based on the Company's long-term operating plan and a terminal value was used to estimate the operating segment's cash flows beyond the period covered by the operating plan. The weighted-average cost of capital is an estimate of the overall after-tax rate of return required by equity and debt market holders of a business enterprise. These analyses require the exercise of significant judgments, including judgments about appropriate discount rates, perpetual growth rates and the timing of expected future cash flows of the respective reporting unit. Sensitivity analyses were performed around these assumptions in order to assess the reasonableness of the assumptions and the resulting estimated fair values.

Goodwill impairment testing in 2015 was performed using qualitative analysis, which is performed by assessing certain trends and factors, including projected market outlook and growth rates, forecasted and actual sales and operating profit margins, discount rates, industry data, and other relevant qualitative factors. These trends and factors are compared to, and based on, the assumptions used in the most recent quantitative assessment performed in 2013. The results of the qualitative analysis did not indicate a need to perform a quantitative analysis.

Based on a quantitative analysis performed in 2016 and a qualitative analysis performed in 2015, the fair value of Eaton's reporting units continue to substantially exceed their respective carrying amounts.

Indefinite life intangible assets consist of certain trademarks. They are evaluated annually for impairment as of July 1 using either a quantitative or qualitative analysis to determine whether their fair values exceed their respective carrying amounts. Indefinite life intangible asset impairment testing for 2016 and 2015 was performed using a quantitative analysis. The Company determines the fair value of these assets using a royalty relief methodology similar to that employed when the associated assets were acquired, but using updated estimates of future sales, cash flows and profitability. Additionally, indefinite life intangible assets are evaluated for impairment whenever an event occurs or circumstances change that would indicate that it is more likely than not that the asset is impaired. For 2016

and 2015, the fair value of indefinite lived intangible assets exceeded the respective carrying value.
For additional information about goodwill and other intangible assets, see Note 5.

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Other Long-Lived Assets

Depreciation and amortization for property, plant and equipment, and intangible assets subject to amortization, are generally computed by the straight-line method and included in Cost of products sold, Selling and administrative expense, and Research and development expense, as appropriate. Cost of buildings are depreciated generally over 40 years and machinery and equipment over 3 to 10 years. At December 31, 2016, the weighted-average amortization period for intangible assets subject to amortization was 17 years for patents and technology, primarily as a result of the long life of aircraft platforms; 17 years for customer relationships; and 16 years for certain trademarks. Software is generally amortized up to a life of 10 years.

Other long-lived assets are reviewed for impairment whenever events or changes in circumstances indicate the carrying amount may not be recoverable. Upon indications of impairment, assets and liabilities are grouped at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. The asset group would be considered impaired when the estimated future net undiscounted cash flows generated by the asset group are less than its carrying value. Determining asset groups and underlying cash flows requires the use of significant judgment.

Retirement Benefits Plans

For the principal pension plans in the United States, Canada, Puerto Rico and the United Kingdom, the Company uses a market-related value of plan assets to calculate the expected return on assets used to determine net periodic benefit costs. The market-related value of plan assets is a calculated value that recognizes changes in the fair value of plan assets over a five year period. All other plans use fair value of plan assets.

Net actuarial gains or losses are amortized to expense on a plan-by-plan basis when they exceed the accounting corridor. The Company’s corridors are set at either 8% or 10%, depending on the plan, of the greater of the plan assets or benefit obligations. Gains or losses outside of the corridor are subject to amortization over an average employee future service period that differs by plan, but is approximately 13 years on a weighted average basis. If most or all of the plan’s participants are no longer actively accruing benefits, the average life expectancy is used.

Warranty Accruals

Product warranty accruals are established at the time the related sale is recognized through a charge to Cost of products sold. Warranty accrual estimates are based primarily on historical warranty claim experience and specific customer contracts. Provisions for warranty accruals are comprised of basic warranties for products sold, as well as accruals for product recalls and other events when they are known and estimable. See Note 8 for additional information about warranty accruals.

Asset Retirement Obligations

A conditional asset retirement obligation is recognized at fair value when incurred if the fair value of the liability can be reasonably estimated. Uncertainty about the timing or method of settlement of a conditional asset retirement obligation would be considered in the measurement of the liability when sufficient information exists. Eaton believes that for substantially all of its asset retirement obligations, there is an indeterminate settlement date because the range of time over which the Company may settle the obligation is unknown or cannot be estimated. A liability for these obligations will be recognized when sufficient information is available to estimate fair value.

Income Taxes

Deferred income tax assets and liabilities are determined based on the difference between the financial statement and tax basis of the respective assets and liabilities, using enacted tax rates in effect for the year when the differences are expected to reverse. Deferred income tax assets are recognized for income tax loss carryforwards and income tax credit carryforwards. Judgment is required in determining and evaluating income tax provisions and valuation allowances for deferred income tax assets. Eaton recognizes the income tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by taxing authorities, based on the technical merits of the position. Eaton evaluates and adjusts these accruals based on changing facts and circumstances. Eaton recognizes interest and penalties related to unrecognized income tax benefits in the provision for income tax expense. Penalties on unrecognized income tax benefits have been accrued for jurisdictions where penalties are automatically applied to any deficiency, regardless of the merit of the position. For additional information about income taxes, see Note 9.

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Equity-Based Compensation

Eaton recognizes equity-based compensation expense based on the grant date fair value of the award. Awards with service conditions or both service and market conditions are expensed over the period during which an employee is required to provide service in exchange for the award. Awards with both service and performance conditions are expensed over the period an employee is required to provide service based on the number of units for which achievement of the performance objective is probable. Participants awarded restricted stock units (RSUs) do not receive dividends; therefore, their fair value is determined by reducing the closing market price of the Company's ordinary shares on the date of grant by the present value of the estimated dividends had they been paid. The fair value of restricted stock awards (RSAs) and performance stock units (PSUs) with performance conditions are determined based on the closing market price of the Company's ordinary shares at the date of grant. The Company uses a Monte Carlo simulation to estimate the fair value of PSUs with market conditions, which incorporates assumptions regarding expected stock price volatility and the risk-free interest rate. Stock options are granted with an exercise price equal to the closing market price of Eaton ordinary shares on the date of grant. The fair value of stock options is determined using a Black-Scholes option-pricing model, which incorporates assumptions regarding the expected stock price volatility, the expected option life, the risk-free interest rate, and the expected dividend yield. See Note 11 for additional information about equity-based compensation.

Derivative Financial Instruments and Hedging Activities

Eaton uses derivative financial instruments to manage the exposure to the volatility in raw material costs, currency, and interest rates on certain debt. These instruments are marked to fair value in the accompanying Consolidated Balance Sheets. Changes in the fair value of derivative assets or liabilities (i.e., gains or losses) are recognized depending upon the type of hedging relationship and whether an instrument has been designated as a hedge. For those instruments that qualify for hedge accounting, Eaton designates the hedging instrument, based upon the exposure being hedged, as a cash flow hedge, a fair value hedge, or a hedge of a net investment in a foreign operation. Changes in fair value of these instruments that do not qualify for hedge accounting are recognized immediately in net income. See Note 13 for additional information about hedges and derivative financial instruments.

Recently Issued Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update 2014-09, Revenue from Contracts with Customers (ASU 2014-09). This accounting standard supersedes all existing US GAAP revenue recognition guidance. Under ASU 2014-09, a company will recognize revenue when it transfers the control of promised goods or services to customers in an amount that reflects the consideration which the company expects to collect in exchange for those goods or services. ASU 2014-09 will require additional disclosures in the notes to the consolidated financial statements and is effective for annual and interim reporting periods beginning after December 15, 2016. In August 2015, the FASB issued ASU 2015-14, Revenue from Contracts with Customers: Deferral of the Effective Date (ASU 2015-14). This accounting standard defers the effective date of ASU 2014-09 for one year and permits early adoption as of the original effective date.

A cross-functional implementation team has been established consisting of representatives from all of our business segments. The implementation team is working to analyze the impact of the standard on the Company's contract portfolio by reviewing current accounting policies and practices to identify potential differences that would result from applying the requirements of the new standard to revenue contracts. In addition, the Company is in the process of identifying and implementing the appropriate changes to business processes and controls to support recognition and disclosure under the new standard. Eaton plans to adopt the standard as of the first quarter of 2018 using the modified retrospective approach and will record a cumulative adjustment to equity for open contracts as of January 1, 2018. Certain revenues will move from point-in-time or multiple elements to over time because of the continuous transfer of control to customers. Eaton is continuing to evaluate the impact of ASU 2014-09 and an estimate of the impact to the consolidated financial statements cannot be made at this time.

In February 2016, the Financial Accounting Standards Board issued Accounting Standards Update 2016-02, Leases (Topic 842), (ASU 2016-02). This accounting standard requires that a lessee recognize a lease asset and a lease liability on its balance sheet for all leases, including operating leases, with a term greater than 12 months. ASU 2016-02 will require additional disclosures in the notes to the consolidated financial statements and is effective for annual and interim reporting periods beginning after December 15, 2018. Eaton is evaluating the impact of ASU 2016-02 and an estimate of the impact to the consolidated financial statements cannot be made at this time.

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In March 2016, the Financial Accounting Standards Board issued Accounting Standards Update 2016-09, Compensation-Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting, (ASU 2016-09). The standard is intended to simplify several areas of accounting for share-based compensation arrangements, including the income tax impact, classification on the statement of cash flows and forfeitures. The new standard eliminates the accounting for excess tax benefits to be recognized in equity, and tax deficiencies recognized in either equity or the income tax provision. ASU 2016-09 is effective for annual and interim reporting periods beginning after December 15, 2016. The Company will adopt the new standard in the first quarter of 2017. Upon adoption, the Company anticipates recognizing deferred tax assets for all excess tax benefits that had not been previously recognized. This will be accomplished through a cumulative-effect adjustment to retained earnings and is not expected to have a material impact to the consolidated financial statements.

Note 2. ACQUISITIONS AND SALES OF BUSINESSES

Acquisition of Ephesus Lighting, Inc.

On October 28, 2015, Eaton acquired Ephesus Lighting, Inc. (Ephesus). Ephesus is a leader in LED lighting for stadiums and other high lumen outdoor and industrial applications. Its sales for the 12 months ended September 30, 2015 were $23. Ephesus is reported within the Electrical Products business segment.

Acquisition of UK Safety Technology Manufacturer Oxalis Group Ltd.

On January 12, 2015, Eaton acquired Oxalis Group Ltd. (Oxalis). Oxalis is a manufacturer of closed-circuit television camera stations, public address and general alarm systems and other electrical products for the hazardous area, marine and industrial communications markets. Its sales for the 12 months ended December 31, 2014 were $9. Oxalis is reported within the Electrical Systems and Services business segment.

Sale of Aerospace Power Distribution Management Solutions and Integrated Cockpit Solutions

On May 9, 2014, Eaton sold the Aerospace Power Distribution Management Solutions and Integrated Cockpit Solutions businesses to Safran for $270, which resulted in a pre-tax gain of $154.

Note 3. ACQUISITION INTEGRATION CHARGES

Eaton incurs integration charges related to acquired businesses. A summary of these charges follows:

	2016	2015	2014
Electrical Products	$3	$25	$66
Electrical Systems and Services	1	15	51
Hydraulics	—	2	12
Total business segments	4	42	129
Corporate	—	5	25
Total acquisition integration charges before income taxes	4	47	154
Income taxes	1	16	52
Total after income taxes	$3	$31	$102
Per ordinary share - diluted	$0.01	$0.07	$0.21

Business segment acquisition integration charges in 2016 related to the integration of Ephesus Lighting, Inc. and Oxalis Group Ltd., which were acquired in 2015. The charges associated with Ephesus were included in Cost of products sold and Selling and administrative expense, while the charges associated with Oxalis were included in Cost of products sold. Business segment acquisition charges in 2015 related primarily to the integration of Cooper Industries plc, which was acquired in 2012. Business segment acquisition integration charges in 2014 related primarily to the integrations of Cooper and Polimer Kaucuk Sanayi ve Pazarlama A.S., which was acquired in 2012. The charges in 2015 and 2014 were included in Cost of products sold or Selling and administrative expense, as appropriate. In Business Segment Information, the charges reduced Operating profit of the related business segment. The integration of Cooper included costs related to restructuring activities Eaton undertook in an effort to gain efficiencies in selling, marketing, traditional back-office functions and manufacturing and distribution. These actions resulted in charges of $20 during 2015, comprised of severance costs and other expense totaling $1 and $19, respectively, of which $14 were incurred in the Electrical Products segment, and $6 were incurred in the Electrical

Systems and Services segment. In 2014, we incurred $95 of charges related to Cooper restructuring activities, comprised of severance costs totaling $69 and other expenses totaling $26, of which $53 and $42 were recognized in the Electrical Products and Electrical Systems and Services business segments, respectively.

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Corporate integration charges related primarily to the acquisition of Cooper. These charges were included in Selling and administrative expense. In Business Segment Information, the charges were included in Other corporate expense - net.
See Note 15 for additional information about business segments.

Note 4. RESTRUCTURING CHARGES
During 2015, Eaton announced its commitment to undertake actions to reduce its cost structure in all business segments and at corporate. Restructuring charges incurred under this plan were $211 in 2016 and $129 in 2015. The charges associated with restructuring activities are anticipated to be $100 in 2017.
A summary of restructuring charges by type follows:

	2016	2015
Workforce reductions	$177	$112
Plant closings and other	34	17
Total	$211	$129

A summary of restructuring charges by segment follows:

	2016	2015
Electrical Products	$44	$12
Electrical Systems & Services	49	29
Hydraulics	67	31
Aerospace	4	5
Vehicle	35	34
Corporate	12	18
Total	$211	$129

A summary of liabilities related to workforce reductions, plant closings and other associated costs announced in 2015 follows:

	Workforce reductions	Plant closing and other	Total
Balance at December 31, 2014	$ —	$ —	$—
Liability recognized	112	17	129
Payments	(59)	(3)	(62)
Other adjustments	1	(14)	(13)
Balance at December 31, 2015	54	—	54
Liability recognized	177	34	211
Payments	(116)	(13)	(129)
Other adjustments	(2)	(20)	(22)
Balance at December 31, 2016	$ 113	$ 1	$114

These charges were included in Cost of products sold, Selling and administrative expenses or Other income-net, as appropriate. In Business Segment Information, the charges reduced Operating profit of the related business segment. See Note 15 for additional information about business segments.

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Note 5. GOODWILL AND OTHER INTANGIBLE ASSETS

Changes in the carrying amount of goodwill by segment follow:

	Electrical Products	Electrical Systems and Services	Hydraulics	Aerospace	Vehicle	Total
December 31, 2014	$ 6,940	$ 4,314	$ 1,327	$ 962	$ 350	$ 13,893
Additions	31	20	—	—	—	51
Reclassifications	(106)	106	—	—	—	—
Translation	(223)	(161)	(68)	(6)	(7)	(465)
December 31, 2015	6,642	4,279	1,259	956	343	13,479
Translation	(145)	(76)	(38)	(18)	(1)	(278)
December 31, 2016	$ 6,497	$ 4,203	$ 1,221	$ 938	$ 342	$ 13,201

A summary of other intangible assets follows:

	2016		2015	
	Historical cost	Accumulated amortization	Historical cost	Accumulated amortization
Intangible assets not subject to amortization				
Trademarks	$ 1,637		$ 1,661	
Intangible assets subject to amortization				
Customer relationships	$ 3,456	$ 1,199	$ 3,544	$ 1,010
Patents and technology	1,342	519	1,447	511
Trademarks	1,104	378	1,113	311
Other	97	26	103	22
Total intangible assets subject to amortization	$ 5,999	$ 2,122	$ 6,207	$ 1,854

Amortization expense related to intangible assets subject to amortization in 2016, and estimated amortization expense for each of the next five years, follows:

2016	$ 392
2017	375
2018	355
2019	348
2020	343
2021	334

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Note 6. DEBT

A summary of long-term debt, including the current portion, follows:

	2016		2015	
2.375% debentures due 2016	$	—	$	240
5.30% notes due 2017 ($150 converted to floating rate by interest rate swap)	250		250	
6.10% debentures due 2017	289		289	
1.50% senior notes due 2017 ($750 converted to floating rate by interest rate swap)	1,000		1,000	
5.60% notes due 2018 ($415 converted to floating rate by interest rate swap)	450		450	
4.215% Japanese yen notes due 2018	86		83	
6.95% notes due 2019 ($300 converted to floating rate by interest rate swap)	300		300	
3.875% debentures due 2020 ($150 converted to floating rate by interest rate swap)	239		239	
3.47% notes due 2021 ($275 converted to floating rate by interest rate swap)	300		300	
8.10% debentures due 2022	100		100	
2.75% senior notes due 2022 ($1,400 converted to floating rate by interest rate swap)	1,600		1,600	
3.68% notes due 2023 ($200 converted to floating	300		300	

rate by interest rate swap)		
0.75% euro notes due 2024	580	—
6.50% debentures due 2025	145	145
7.65% debentures due 2029 ($50 converted to floating rate by interest rate swap)	200	200
4.00% senior notes due 2032	700	700
5.45% debentures due 2034 ($25 converted to floating rate by interest rate swap)	136	136
5.80% notes due 2037	240	240
4.15% senior notes due 2042	1,000	1,000
5.25% to 8.875% notes (maturities ranging from 2018 to 2035, including $50 converted to floating rate by interest rate swap)	239	239
Other	109	177
Total long-term debt	8,263	7,988
Less current portion of long-term debt	(1,552)	(242)
Long-term debt less current portion	$ 6,711	$ 7,746

On October 14, 2016, Eaton refinanced a $750, five-year revolving credit facility with a $750, five-year revolving credit facility that will expire October 14, 2021. Eaton also maintains a $500, four-year revolving credit facility that will expire on October 3, 2018 and a $750, five-year credit facility that will expire October 3, 2019. This refinancing maintains long-term revolving credit facilities at a total of $2,000. The revolving credit facilities are used to support commercial paper borrowings and are fully and unconditionally guaranteed by Eaton and certain of its direct and indirect subsidiaries on an unsubordinated, unsecured basis. There were no borrowings outstanding under Eaton's revolving credit facilities at December 31, 2016 or 2015. The Company had available lines of credit of $823 from various banks primarily for the issuance of letters of credit, of which there was $285 outstanding at December 31, 2016. Borrowings outside the United States are generally denominated in local currencies.

The Company repaid the 2.375% debentures on January 15, 2016, for $240. The Company repaid the 5.45% debentures on April 1, 2015 for $300, the 4.65% notes on June 15, 2015 for $100 and the 0.95% senior notes for $600 on November 2, 2015.

Short-term debt was $14 all of which was outside the United States as of December 31, 2016.

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On September 20, 2016, a subsidiary of Eaton issued euro denominated notes (Euro Notes) with a face value of €550 ($615 based on the September 20, 2016 spot rate), in accordance with Regulation S promulgated under the Securities Act of 1933, as amended. The Euro Notes mature in 2024 with interest payable annually at a rate of 0.75%. The issuer received proceeds totaling €544 ($609 based on the September 20, 2016 spot rate) from the issuance, net of financing costs and discounts. The senior Euro Notes are fully and unconditionally guaranteed on an unsubordinated, unsecured basis by Eaton and certain of its direct and indirect subsidiaries. The Euro Notes contain an optional redemption provision by which the Company may make an offer to purchase all or any part of the Euro Notes prior to June 20, 2024 at a purchase price of the greater of (a) 100% of the principal amount of the respective Euro Notes being redeemed, or (b) the sum of the present values of the respective remaining scheduled payments of principal and interest, discounted to the redemption date on an annual basis at the benchmark Bund Rate plus 20 basis points. In each case, the redemption price will include any accrued and unpaid interest on the Euro Notes being redeemed. At any time on or after June 20, 2024, the Company may redeem the Euro Notes, in whole or in part, at a redemption price equal to 100% of the principal amount to be redeemed plus accrued and unpaid interest. The Euro Notes also contain a change of control provision which requires the Company to make an offer to purchase all or any part of the Euro Notes at a purchase price of 101% of the principal amount plus accrued and unpaid interest. The capitalized deferred financing fees and discounts are amortized in Interest expense - net over the respective terms of the Euro Notes. The Euro Notes are subject to customary non-financial covenants.

The senior notes registered by Eaton Corporation under the Securities Act of 1933 (the Senior Notes) are fully and unconditionally guaranteed on an unsubordinated, unsecured basis by Eaton and certain of its direct and indirect subsidiaries. Substantially all of the other debt instruments issued by the Company or any of its subsidiaries are similarly guaranteed on an unsubordinated, unsecured basis by the identical group of guaranteeing entities. See Note 16 for additional information about the Senior Notes.

Eaton is in compliance with each of its debt covenants for all periods presented.

Maturities of long-term debt for each of the next five years follow:

2017	$1,552
2018	573
2019	340
2020	241
2021	302

Interest paid on debt follows:

2016	$266
2015	271
2014	296

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Note 7. RETIREMENT BENEFITS PLANS

Eaton has defined benefits pension plans and other postretirement benefits plans.

Obligations and Funded Status

	United States pension liabilities		Non-United States pension liabilities		Other postretirement liabilities	
	2016	2015	2016	2015	2016	2015
Funded status						
Fair value of plan assets	$2,969	$2,934	$1,478	$1,472	$74	$93
Benefit obligations	(3,771)	(3,829)	(2,314)	(2,175)	(473)	(575)
Funded status	$(802)	$(895)	$(836)	$(703)	$(399)	$(482)
Amounts recognized in the Consolidated Balance Sheets						
Non-current assets	$34	$11	$33	$57	$—	$—
Current liabilities	(24)	(57)	(22)	(23)	(31)	(42)
Non-current liabilities	(812)	(849)	(847)	(737)	(368)	(440)
Total	$(802)	$(895)	$(836)	$(703)	$(399)	$(482)
Amounts recognized in Accumulated other comprehensive loss (pretax)						
Net actuarial loss	$1,232	$1,322	$771	$644	$21	$95
Prior service cost (credit)	3	5	8	9	(60)	(74)
Total	$1,235	$1,327	$779	$653	$(39)	$21

Change in Benefit Obligations

	United States pension liabilities		Non-United States pension liabilities		Other postretirement liabilities	
	2016	2015	2016	2015	2016	2015
Balance at January 1	$3,829	$4,047	$2,175	$2,337	$575	$676
Service cost	111	123	63	71	4	6
Interest cost	125	156	62	72	17	24
Actuarial (gain) loss	52	(179)	355	(23)	(72)	(66)
Gross benefits paid	(346)	(318)	(94)	(100)	(79)	(86)
Currency translation	—	—	(245)	(182)	1	(8)
Plan amendments	—	—	2	—	—	(1)
Other	—	—	(4)	—	27	30
Balance at December 31	$3,771	$3,829	$2,314	$2,175	$473	$575
Accumulated benefit obligation	$3,620	$3,672	$2,189	$2,049		

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Change in Plan Assets

	United States pension liabilities		Non-United States pension liabilities		Other postretirement liabilities	
	2016	2015	2016	2015	2016	2015
Balance at January 1	$2,934	$3,086	$1,472	$1,535	$ 93	$ 116
Actual return on plan assets	221	(55)	212	29	3	1
Employer contributions	160	221	102	109	30	31
Gross benefits paid	(346)	(318)	(94)	(100)	(79)	(86)
Currency translation	—	—	(211)	(101)	—	—
Other	—	—	(3)	—	27	31
Balance at December 31	$2,969	$2,934	$1,478	$1,472	$ 74	$ 93

The components of pension plans with an accumulated benefit obligation in excess of plan assets at December 31 follow:

	United States pension liabilities		Non-United States pension liabilities	
	2016	2015	2016	2015
Projected benefit obligation	$3,342	$3,376	$1,902	$1,387
Accumulated benefit obligation	3,190	3,219	1,824	1,328
Fair value of plan assets	2,505	2,470	1,066	650

Changes in pension and other postretirement benefit liabilities recognized in Accumulated other comprehensive loss follow:

	United States pension liabilities		Non-United States pension liabilities		Other postretirement liabilities	
	2016	2015	2016	2015	2016	2015
Balance at January 1	$1,327	$1,382	$653	$706	$ 21	$ 90
Prior service cost arising during the year	—	—	2	—	—	(1)
Net loss (gain) arising during the year	81	138	235	47	(69)	(62)
Currency translation	—	—	(75)	(58)	1	(4)
Less amounts included in expense during the year	(173)	(193)	(36)	(42)	8	(2)
Net change for the year	(92)	(55)	126	(53)	(60)	(69)
Balance at December 31	$1,235	$1,327	$779	$653	$ (39)	$ 21

Benefits Expense

	United States pension benefit expense			Non-United States pension benefit expense			Other postretirement benefits expense		
	2016	2015	2014	2016	2015	2014	2016	2015	2014
Service cost	$111	$123	$117	$63	$71	$66	$4	$6	$13
Interest cost	125	156	162	62	72	85	17	24	32
Expected return on plan assets	(250)	(262)	(246)	(92)	(99)	(98)	(6)	(5)	(6)
Amortization	92	119	93	33	40	27	(9)	2	6
	78	136	126	66	84	80	6	27	45
Settlements, curtailments	81	74	71	3	2	2	1	—	(31)

and other									
Total expense	$159	$210	$197	$69	$86	$82	$7	$27	$14

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The estimated pretax net amounts that will be recognized from Accumulated other comprehensive loss into net periodic benefit cost in 2017 follow:

	United States pension liabilities	Non-United States pension liabilities	Other postretirement liabilities
Actuarial loss	$ 142	$ 54	$ 2
Prior service cost (credit)	1	1	(14)
Total	$ 143	$ 55	$ (12)

Retirement Benefits Plans Assumptions

For purposes of determining liabilities related to pension plans and other postretirement benefits plans in the United States, the Company updated its mortality assumption in 2014 to use the RP-2014 tables with a generational improvement scale based on MP-2014. In 2015, the Company updated its mortality assumption to use 2014 tables and a generational improvement scale that are based on MP-2015. In 2016, the Company updated its mortality assumption to use 2014 tables and a generational improvement scale that are based on MP-2016.

In 2016, the Company adopted a change in the method it uses to estimate the service and interest cost components of net periodic benefit cost for its defined benefit pension and other postretirement benefit plans. Prior to 2016, for the vast majority of its plans, the service and interest cost components were estimated using a single weighted-average discount rate derived from the yield curve used to measure the benefit obligation at the beginning of the period. Beginning in 2016, the Company used a spot rate approach by applying the specific spot rates along the yield curve to the relevant projected cash flows in the estimation of the service and interest components of benefit cost, resulting in a more precise measurement. This change does not affect the measurement of total benefit obligations. The change was accounted for as a change in estimate and, accordingly, was accounted for prospectively starting in 2016. The reductions in service cost and interest cost for 2016 associated with this change in estimate were $3 and $42, respectively.

Pension Plans

	United States pension plans			Non-United States pension plans		
	2016	2015	2014	2016	2015	2014
Assumptions used to determine benefit obligation at year-end						
Discount rate	4.12%	4.22%	3.97%	2.63%	3.46%	3.33%
Rate of compensation increase	3.15%	3.18%	3.16%	3.13%	3.12%	3.13%
Assumptions used to determine expense						
Discount rate used to determine benefit obligation	4.22%	3.97%	4.67%	3.46%	3.33%	4.20%
Discount rate used to determine service cost	4.35%	3.97%	4.67%	4.13%	3.33%	4.20%
Discount rate used to determine interest cost	3.42%	3.97%	4.67%	3.07%	3.33%	4.20%
Expected long-term return on plan assets	8.50%	8.50%	8.40%	6.62%	6.92%	7.00%
Rate of compensation increase	3.18%	3.16%	3.16%	3.12%	3.13%	3.12%

The expected long-term rate of return on pension assets was determined for each country and reflects long-term historical data taking into account each plan's target asset allocation. The expected long-term rates of return on pension assets for United States pension plans and Non-United States pension plans for 2017 are 7.90% and 6.30%, respectively. The discount rates were determined using appropriate bond data for each country.

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Other Postretirement Benefits Plans

Substantially all of the obligation for other postretirement benefits plans relates to United States plans. Assumptions used to determine other postretirement benefits obligations and expense follow:

	Other postretirement benefits plans		
	2016	2015	2014
Assumptions used to determine benefit obligation at year-end			
Discount rate	3.96 %	4.04 %	3.79 %
Health care cost trend rate assumed for next year	7.35 %	7.10 %	6.31 %
Ultimate health care cost trend rate	4.75 %	4.75 %	4.77 %
Year ultimate health care cost trend rate is achieved	2026	2025	2024
Assumptions used to determine expense			
Discount rate used to determine benefit obligation	4.04 %	3.79 %	4.48 %
Discount rate used to determine service cost	4.26 %	3.79 %	4.48 %
Discount rate used to determine interest cost	3.12 %	3.79 %	4.48 %
Initial health care cost trend rate	7.10 %	6.31 %	6.64 %
Ultimate health care cost trend rate	4.75 %	4.77 %	4.77 %
Year ultimate health care cost trend rate is achieved	2025	2024	2023

Assumed health care cost trend rates may have a significant effect on the amounts reported for the health care plans. A 1-percentage point change in the assumed health care cost trend rates would have the following effects:

	1% increase	1% decrease
Effect on total service and interest cost	$ 1	$ (1)
Effect on other postretirement liabilities	17	(15)

Employer Contributions to Retirement Benefits Plans

Contributions to pension plans that Eaton expects to make in 2017, and made in 2016, 2015 and 2014, follow:

	2017	2016	2015	2014
United States plans	$125	$160	$221	$248
Non-United States plans	90	102	109	114
Total contributions	$215	$262	$330	$362

The following table provides the estimated pension and other postretirement benefit payments for each of the next five years, and the five years thereafter in the aggregate. For other postretirement benefits liabilities, the expected subsidy receipts related to the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 would reduce the gross payments listed below.

	Estimated United States pension payments	Estimated non-United States pension payments	Estimated other postretirement benefit payments	
			Gross	Medicare prescription drug subsidy
2017	$ 309	$ 77	$ 53	$ (5)
2018	279	80	50	(5)
2019	278	83	46	(4)
2020	281	86	42	(4)
2021	289	88	36	(3)
2022 - 2026	1,460	495	156	(9)

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Pension Plan Assets

Investment policies and strategies are developed on a country specific basis. The United States plans, representing 67% of worldwide pension assets, and the United Kingdom plans representing 27% of worldwide pension assets, are invested primarily for growth, as the majority of the assets are in plans with active participants and ongoing accruals. In general, the plans have their primary allocation to diversified global equities, primarily through index funds in the form of common collective and other trusts. The United States plans' target allocation is 33% United States equities, 32% non-United States equities, 8% real estate (primarily equity of real estate investment trusts), 22% debt securities and 5% other, including hedge funds, private equity and cash equivalents. The United Kingdom plans' target asset allocations are 57% equities and the remainder in debt securities, cash equivalents and real estate investments. The equity risk for the plans is managed through broad geographic diversification and diversification across industries and levels of market capitalization. The majority of debt allocations for these plans are longer duration government and corporate debt. The United States, United Kingdom and Canada pension plans are authorized to use derivatives to achieve more economically desired market exposures and to use futures, swaps and options to gain or hedge exposures.

Other Postretirement Benefits Plan Assets

The Voluntary Employee Benefit Association trust which holds U.S. other postretirement benefits plan assets has investment guidelines that include allocations to global equities and fixed income investments. The trust's 2016 target investment allocation is 53% diversified global equities and 47% fixed income securities held in a trust that invests primarily in exchange traded funds. The fixed income allocation is primarily comprised of intermediate term, high quality, dollar denominated, fixed income instruments. The equity allocation is invested in diversified global equity index funds.

Fair Value Measurements

Financial instruments included in pension and other postretirement benefits plan assets are categorized into a fair value hierarchy of three levels, based on the degree of subjectivity inherent in the valuation methodology as follows:

Level 1 - Quoted prices (unadjusted) for identical assets in active markets.

Level 2 - Quoted prices for similar assets in active markets, and inputs that are observable for the asset, either directly or indirectly, for substantially the full term of the financial instrument.

Level 3 - Unobservable prices or inputs.

Certain investments that are measured at fair value using the net asset value per share practical expedient have not been categorized in the fair value hierarchy and are being presented in the tables to permit a reconciliation to total plan assets.

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Pension Plans

A summary of the fair value of pension plan assets at December 31, 2016 and 2015, follows:

	Total	Quoted prices in active markets for identical assets (Level 1)	Other observable inputs (Level 2)	Unobservable inputs (Level 3)
2016				
Common collective trusts				
Non-United States equity and global equities	$413	$ —	$ 413	$ —
United States equity	94	—	94	—
Fixed income	422	—	422	—
Fixed income securities	359	—	359	—
United States treasuries	123	123	—	—
Bank loans	150	—	150	—
Real estate securities	201	195	—	6
Equity securities	104	104	—	—
Cash equivalents	276	21	255	—
Exchange traded funds	55	55	—	—
Other	109	—	14	95
Common collective and other trusts measured at net asset value	2,038			
Hedge funds measured at net asset value	85			
Money market funds measured at net asset value	18			
Total pension plan assets	$4,447	$ 498	$ 1,707	$ 101

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	Total	Quoted prices in active markets for identical assets (Level 1)	Other observable inputs (Level 2)	Unobservable inputs (Level 3)
2015				
Common collective trusts				
Non-United States equity and global equities	$415	$ —	$ 415	$ —
United States equity	96	—	96	—
Fixed income	418	—	418	—
Fixed income securities	357	—	357	—
United States treasuries	105	105	—	—
Bank loans	136	—	136	—
Real estate securities	251	244	—	7
Equity securities	98	98	—	—
Cash equivalents	227	17	210	—
Exchange traded funds	49	49	—	—
Other	100	—	14	86
Common collective and other trusts measured at net asset value	2,043			
Hedge funds measured at net asset value	92			
Money market funds measured at net asset value	19			
Total pension plan assets	$4,406	$ 513	$ 1,646	$ 93

The fair value measurement of plan assets using significant unobservable inputs (Level 3) changed during 2015 and 2016 due to the following:

	Real estate securities	Other	Total
Balance at December 31, 2014	$ 6	$ 60	$ 66
Actual return on plan assets:			
Gains (losses) relating to assets still held at year-end	1	(2)	(1)
Purchases, sales, settlements - net	—	37	37
Transfers into or out of Level 3	—	(9)	(9)
Balance at December 31, 2015	7	86	93
Actual return on plan assets:			
Gains (losses) relating to assets still held at year-end	—	(6)	(6)
Purchases, sales, settlements - net	(1)	15	14
Transfers into or out of Level 3	—	—	—
Balance at December 31, 2016	$ 6	$ 95	$ 101

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Other Postretirement Benefits Plans

A summary of the fair value of other postretirement benefits plan assets at December 31, 2016 and 2015, follows:

	Total	Quoted prices in active markets for identical assets (Level 1)	Other observable inputs (Level 2)	Unobservable inputs (Level 3)
2016				
Cash equivalents	$ 8	$ 8		