JOHNSON CONTROLS INTERNATIONAL PLC

Annual Report

For the Year Ended September 30, 2023

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JOHNSON CONTROLS INTERNATIONAL PLC
DIRECTORS' REPORT
For the Financial Year Ended September 30, 2023

The directors present their report and the audited consolidated financial statements of Johnson Controls International plc and its subsidiaries (hereinafter referred to as "Johnson Controls" or the "Group") for the financial year ended September 30, 2023, which are set out on pages 50 to 112, and audited entity financial statements of Johnson Controls International plc ("Johnson Controls Ireland" or "the Company") for the financial year ended September 30, 2023, which are set out on pages 113 to 122.

The directors have elected to prepare the consolidated financial statements of the Group in accordance with Section 279 of the Companies Act 2014 (the "Act"), which provides that a true and fair view of the state of affairs and profit or loss may be given by preparing the financial statements in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"), as defined in Section 279 of the Act, to the extent that the use of those principles in the preparation of the financial statements does not contravene any provision of the Act or of any regulations made thereunder.

The directors have elected to prepare the Company financial statements in accordance with Financial Reporting Standard 102, "The Financial Reporting Standard applicable in the UK and Ireland" ("FRS 102"), together with the Companies Act 2014.

DIRECTORS' COMPLIANCE STATEMENT

The directors acknowledge that they are responsible for securing the Company's compliance with its relevant obligations.

The directors confirm that the Company has:

1. Drawn up a compliance policy statement setting out the Company's policies respecting compliance by the Company with its relevant obligations.

2. Put in place appropriate arrangements or structures that are designed to secure material compliance with the Company's relevant obligations.

3. Conducted a review during the financial year ended September 30, 2023 of the arrangements and structures referred to at 2 above.

STATEMENT OF DIRECTORS' RESPONSIBILITIES

The directors are responsible for preparing the Directors' Report and the financial statements in accordance with Irish law.

Irish law requires the directors to prepare financial statements for each financial year that give a true and fair view of the Group's and Company's assets, liabilities and financial position as at the end of the financial year and of the profit or loss of the Group for the financial year. Under that law, the directors have prepared the consolidated financial statements in accordance with U.S. accounting standards, as defined in Section 279(1) of the Companies Act 2014, to the extent that the use of those principles in the preparation of the financial statements does not contravene any provision of the Companies Act, or of any regulations made thereunder, and the Company financial statements in accordance with Irish Generally Accepted Accounting Practice (accounting standards issued by the UK Financial Reporting Council, including Financial Reporting Standard 102 *The Financial Reporting Standard applicable in the UK and Republic of Ireland* and Irish law).

Under Irish law, the directors shall not approve the financial statements unless they are satisfied that they give a true and fair view of the Group's and Company's assets, liabilities and financial position as at the end of the financial year and the profit or loss of the Group for the financial year.

In preparing these financial statements, the directors are required to:

- select suitable accounting policies and then apply them consistently;
- make judgments and estimates that are reasonable and prudent;
- state that the consolidated financial statements of the Group comply with accounting principles generally accepted in the United States of America (U.S.) (U.S. GAAP) to the extent that it does not contravene Irish Company Law, and that the Company financial statements comply with accounting standards issued by the UK Financial Reporting Council and Irish Law; and
- prepare the Group and Company financial statements on a going concern basis unless it is inappropriate to presume that the Group and Company will continue in business.

The directors are responsible for keeping adequate accounting records that are sufficient to:

- correctly record and explain the transactions of the Group;
- enable, at any time, the assets, liabilities, financial position and profit or loss of the Group to be determined with reasonable accuracy; and
- enable the directors to ensure that the financial statements comply with the Companies Act 2014 and enable those financial statements to be audited.

The directors are also responsible for safeguarding the assets of the Group and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The directors are responsible for the maintenance and integrity of the corporate and financial information included on the Group's website. Legislation in Ireland governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

ACCOUNTING RECORDS

The measures that the directors have taken to secure compliance with the requirements of Sections 281 to 285 of the Companies Act 2014 with regards to the keeping of accounting records, are the employment of appropriately qualified accounting personnel and the maintenance of computerized accounting systems. In accordance with Section 283 of the Companies Act 2014, sufficient books of account are maintained in the Group’s registered office in One Albert Quay, Cork, Ireland and at the Group's office at 5757 N Green Bay Ave, Milwaukee, WI 53209, USA to disclose, with reasonable accuracy, the financial position of the Group at intervals not exceeding six months.

BASIS OF PRESENTATION

The accompanying financial statements have been prepared in United States dollars and reflect the consolidated operations of the Group. Unless otherwise indicated, references to 2023 and 2022 are to Johnson Control's financial years ending September 30, 2023 ("fiscal 2023") and 2022 ("fiscal 2022"), respectively.

PRINCIPAL ACTIVITIES

Johnson Controls International plc, headquartered in Cork, Ireland, is a global leader in smart, healthy and sustainable buildings, serving a wide range of customers in more than 150 countries. The Group’s products, services, systems and solutions advance the safety, comfort and intelligence of spaces to serve people, places and the planet. The Group is committed to helping its customers win and creating greater value for all of its stakeholders through its strategic focus on buildings.

Johnson Controls was originally incorporated in the state of Wisconsin in 1885 as Johnson Electric Service Company to manufacture, install and service automatic temperature regulation systems for buildings and was renamed Johnson Controls, Inc. in 1974. In 2005, Johnson Controls acquired York International, a global supplier of heating, ventilating and air-conditioning ("HVAC") and refrigeration equipment and services. In 2014, Johnson Controls acquired Air Distribution Technologies, Inc., one of the largest independent providers of air distribution and ventilation products in North America. In 2015, Johnson Controls formed a joint venture with Hitachi to expand its building related product offerings. In 2016, Johnson Controls, Inc. and Tyco International plc ("Tyco") completed their combination (the "Merger"), combining Johnson Controls' portfolio of building efficiency solutions with Tyco’s portfolio of fire and security solutions. Following the Merger, Tyco changed its name to “Johnson Controls International plc.”

In 2016, the Group completed the spin-off of its automotive business into Adient plc, an independent, publicly traded company. In 2019, the Group closed the sale of its Power Solutions business, completing the Group’s transformation into a pure-play building technologies and solutions provider.

The Group is a global leader in engineering, manufacturing and commissioning building products and systems, including residential and commercial HVAC equipment, industrial refrigeration systems, controls, security systems, fire-detection systems and fire-suppression solutions. The Group further serves customers by providing technical services, including maintenance, management, repair, retrofit and replacement of equipment (in the HVAC, industrial refrigeration, security and fire-protection space), and energy-management consulting. The Group's OpenBlue digital software platform enables enterprises to better manage their physical spaces by combining the Group's building products and services with cutting-edge technology and digital capabilities to enable data-driven “smart building” services and solutions. The Group partners with customers by leveraging its broad product portfolio and digital capabilities powered by OpenBlue, together with its direct channel service and solutions capabilities, to deliver outcome-based solutions across the lifecycle of a building that address customers' needs to improve energy efficiency, enhance security, create healthy environments and reduce greenhouse gas emissions.

Business Segments

The Group conducts its business through four business segments:

- *Building Solutions North America* which operates in the United States and Canada;
- *Building Solutions EMEA/LA* which operates in Europe, the Middle East, Africa and Latin America;
- *Building Solutions Asia Pacific* which operates in Asia Pacific; and
- *Global Products* which operates worldwide and includes the Johnson Controls-Hitachi joint venture.

The Building Solutions segments:

- Design, sell, install and service HVAC, controls, building management, refrigeration, integrated electronic security and integrated fire-detection and suppression systems; and
- Provide energy-efficiency solutions and technical services, including data-driven "smart building" solutions as well as inspection, scheduled maintenance, and repair and replacement of mechanical and controls systems.

The Global Products segment designs, manufactures and sells:

- HVAC equipment, controls software and software services for residential and commercial applications;
- Refrigeration equipment and controls;
- Fire protection and suppression; and
- Security products, including intrusion security, anti-theft devices, access control, and video surveillance and management systems.

The Group's segments provide products and services to commercial, institutional, industrial, data center, governmental and residential customers.

For more information on the Group's segments, refer to Note 19, "Segment Information," of the notes to consolidated financial statements.

Products, Systems, Services and Solutions

The Group sells and installs its commercial HVAC equipment and systems, control systems, security systems, fire-detection and fire suppression systems, equipment and services primarily through its extensive direct channel, consisting of a global network of sales and service offices. Significant sales are also generated through global third-party channels, such as distributors of air-conditioning, controls, security and fire-detection and suppression products. The Group's large base of current customers leads to significant repeat business for the maintenance, retrofit and replacement markets. The Group is also able to leverage its installed base to generate sales for its service business. Trusted building brands, such as YORK®, Hitachi Air Conditioning, Metasys®, Ansul, Ruskin®, Titus®, Frick®, FM:Systems®, PENN®, Sabroe®, Silent-Aire®, Simplex® and Grinnell®, together with the breadth and depth of the products, systems and solutions offered by the Group, give it what it believes to be the most diverse portfolio in the building technology industry.

The Group has developed software platforms, including on-premises platforms and cloud-based software services, and integrated its products and services with digital capabilities to provide data-driven solutions to create smarter, safer and more sustainable buildings. The Group's OpenBlue platform enables enterprises to better manage their physical spaces delivering sustainability, new occupant experiences, safety and security by combining the Group's building expertise with cutting-edge technology, including artificial intelligence and machine learning-powered service solutions such as remote diagnostics, predictive maintenance, workplace management, compliance monitoring and advanced risk assessments. The Group leverages its digital and data-driven products and services to offer integrated and customizable solutions focused on delivering outcomes to customers, including OpenBlue Buildings-as-a-Service, OpenBlue Net Zero Buildings-as-a-Service and OpenBlue Healthy Buildings. These services are generally designed to generate recurring revenue for the Group as it supports its customers in achieving their desired outcomes.

In fiscal 2023, products and systems accounted for 76% of sales and services accounted for 24% of sales.

Competition

The Group conducts its operations through a significant number of individual contracts that are either negotiated or awarded on a competitive basis. Key factors in the award of contracts include system and service performance, quality, price, design, reputation, technology, application engineering capability, availability of financing and construction or project management expertise. Competitors for HVAC equipment, security, fire-detection, fire suppression and controls in the residential and non-residential marketplace include many local, regional, national and international providers. Larger competitors include Honeywell International, Inc.; Siemens Smart Infrastructure, an operating group of Siemens AG; Schneider Electric SA; Carrier Global Corporation; Trane Technologies plc; Daikin Industries, Ltd.; Lennox International, Inc.; GC Midea Holding Co, Ltd. and Gree Electric Appliances, Inc. In addition, the Group competes in a highly fragmented building services market. The Group also faces competition from a diverse range of established companies, start-ups and other emerging entrants to the buildings industry in the areas of digital services, software as a service and the Internet of Things. The loss of any individual contract or customer would not have a material adverse effect on the Group.

Business Strategy

The Group’s business strategy is to sustain and expand its position as a leader in smart and sustainable building solutions by offering a full spectrum of products and solutions for customer buildings across the globe. The Group’s core strategy remains focused on creating growth platforms, driving operational improvements and creating a high-performance culture. The Group has strong positions in attractive and growing end-markets across HVAC, controls, fire, security and services, enhanced by its comprehensive product portfolio and substantial installed base. The Group believes that it is well positioned to capitalize on the emerging and prevalent trends in the buildings industry, including sustainability, healthy buildings/indoor environmental quality and smart buildings. To capitalize on these trends, the Group remains focused on maintaining leading positions in delivering building products, systems and solutions, as well as enabling growth through digital, to develop and leverage new digital technologies and capabilities into outcomes powered by its OpenBlue software platform. In furtherance of these goals, the Group has three strategic priorities:

Capitalize on Key Growth Vectors: Sustainability, healthy buildings/indoor environmental quality and smart buildings represent key growth opportunities for the Group. The Group seeks to leverage its existing portfolio breadth and investments in product development, combined with the expansion of its digital products and capabilities powered by OpenBlue, to offer differentiated solutions and innovative deal structures to help customers achieve their objectives. The Group intends to expand its capabilities by investing in products and technologies, as well as expanding its partnerships, to power innovation that will allow it to provide differentiated services that are tailored to its customers’ desired outcomes.

Accelerate in High Growth Digital Services, Regions and Verticals: The Group is focused on transforming its large service business through digital technology, further enabled by the Group’s installed base, domain expertise and global coverage. The Group is focused on developing and deploying connected equipment, systems and controls that will support the provision of digital services and solutions. The Group further intends to expand its presence in high growth regions and invest in high growth verticals within the markets it serves, including healthcare, commercial offices/campus, education and data centers.

Sustain a High-Performance, Customer-Centric Culture: The Group recognizes that developing talent and creating positive customer experiences is central to accomplishing its business strategies. The Group is investing in its talent to build a diverse workforce that is digital capable, solutions oriented and focused on continuous learning and growth. The Group aims to leverage its talent capabilities and training to create a customer-focused culture to drive customer loyalty and decisions.

To realize these priorities, the Group is leveraging its technology leadership, comprehensive product portfolio, global presence, substantial installed base and strong channels to monetize the lifecycle opportunities of install, service, retrofit and replacement which are established and delivered by the Group’s direct field businesses and third-party channels across the globe. The Group is augmenting its strategic priorities with disciplined execution, productivity enhancements and sustainable cost management to create a path to realize expanded margins and enhanced profitability.

Backlog

The Group’s backlog is applicable to its sales of systems and services. At September 30, 2023, the backlog was $13.6 billion, of which $12.1 billion was attributable to the building solutions (field) business. The backlog amount outstanding at any given time is not necessarily indicative of the amount of revenue to be earned in the upcoming fiscal year.

At September 30, 2023, remaining performance obligations were $19.6 billion, which is $6.0 billion higher than the Group's backlog of $13.6 billion. Differences between the Group’s remaining performance obligations and backlog are primarily due to the following:

- Remaining performance obligations include large, multi-purpose contracts including services to be performed over the initial term of the building contract (typically 25 to 35 years) versus backlog which includes only the lifecycle period of the contract (approximately five years);
- Remaining performance obligations exclude certain customer contracts with a term of one year or less and contracts that are cancellable without substantial penalty versus backlog which includes short-term and cancellable contracts; and
- Remaining performance obligations include the full remaining term of service contracts with substantial termination penalties versus backlog which includes one year for all outstanding service contracts.

The Group believes backlog is a useful measure of evaluating the Group's operational performance and relationship to total orders.

Raw Materials

Raw materials used by the Group’s businesses in connection with their operations include steel, aluminum, brass, copper, polypropylene and certain flurochemicals used in fire suppression agents. The Group also uses semiconductors and other electronic components in the manufacture of its products. During fiscal 2022 and portions of fiscal 2023, the Group experienced material cost increases due to global inflation, supply chain disruptions, labor shortages, increased demand and other regulatory and macroeconomic factors. The collective impact of these trends were favorable to revenue due to increased demand and price increases to offset inflation, while negatively impacting margins due to supply chain disruptions and cost pressures. However, throughout fiscal 2023, the Group experienced improved margins as supply chain disruptions eased and higher priced backlog was converted to sales. Although the Group has experienced recent improvement in its supply chain, the Group could experience further disruptions, shortages and price inflation in the future, the effect of which will depend on the Group’s ability to successfully mitigate and offset the impact of these events. In fiscal 2024, commodity prices and availability could fluctuate throughout the year and could significantly affect the Group’s results of operations. For a more detailed description of the risks related to the availability of raw materials, components and commodities, see Principal Risks and Uncertainties.

Intellectual Property

Generally, the Group seeks statutory protection for strategic or financially important intellectual property developed in connection with its business. The Group protects its intellectual property investments in a variety of ways. The Group works actively in the U.S. and internationally to ensure the enforcement of copyright, trademark, trade secret, and other protections that apply to the Group's products, services, software, solutions, and branding. Certain intellectual property, where appropriate, is protected by contracts, licenses, confidentiality or other agreements.

The Group owns numerous U.S. and non-U.S. patents (and their respective counterparts), the more important of which cover those technologies and inventions embodied in current products or which are used in the manufacture of those products. Internal development allows the Group to maintain competitive advantages that come from product differentiation and closer technical control over its products and services. While the Group believes patents are important to its business operations and in the aggregate constitute a valuable asset, no single patent, or group of patents, is critical to the success of the business. The Group, from time to time, grants licenses under its patents and technology and receives licenses under patents and technology of others.

The Group’s trademarks, certain of which are material to its business, are registered or otherwise legally protected in the U.S. and many non-U.S. countries where products and services of the Group are sold. The Group, from time to time, becomes involved in trademark licensing transactions.

Most works of authorship produced for the Group, such as computer programs, catalogs and sales literature, carry appropriate notices indicating the Group’s claim to copyright protection under U.S. law and appropriate international treaties.

Environmental, Health and Safety Matters

Laws addressing the protection of the environment and workers’ safety and health govern the Group’s ongoing global operations. They generally provide for civil and criminal penalties, as well as injunctive and remedial relief, for noncompliance or require remediation of sites where Company-related materials have been released into the environment.

A portion of the Group’s products consume energy and use refrigerants. Increased public awareness and concern regarding global climate change has resulted in more regulations designed to reduce greenhouse gas emissions. These regulations tend to be implemented under global, national and sub-national climate objectives or policies, and target the global warming potential (“GWP”) of refrigerants, equipment energy efficiency, and the combustion of fossil fuels as a heating source. The Group continues to invest in its product portfolio to meet emerging emissions regulations and standards.

The Group has expended substantial resources globally, both financial and managerial, to comply with environmental laws and worker safety laws and maintains procedures designed to foster and ensure compliance. Certain of the Group’s businesses are, or have been, engaged in the handling or use of substances that may impact workplace health and safety or the environment. The Group is committed to protecting its workers and the environment against the risks associated with these substances.

The Group’s operations and facilities have been, and in the future may become, the subject of formal or informal enforcement actions or proceedings for noncompliance with environmental laws and worker safety laws or for the remediation of Company-related substances released into the environment. Such matters typically are resolved with regulatory authorities through commitments to compliance, abatement or remediation programs and, in some cases, payment of penalties. In addition, governments in the United States and internationally have increasingly been regulating perfluorooctane sulfonate ("PFOS"), perfluorooctanoic acid ("PFOA"), and/or other per- and poly-fluoroalkyl substances ("PFAS"), which are contained in certain of the Group's firefighting foam products. These regulations include declining emission standards and limits set as to the presence of certain compounds. See Note 21, "Commitments and Contingencies," of the notes to consolidated financial statements for further discussion of environmental matters.

Government Regulation and Supervision

The Group's operations are subject to numerous federal, state and local laws and regulations, both within and outside the United States, in areas such as consumer protection, government contracts, international trade, environmental protection, labor and employment, tax, licensing and others. For example, most U.S. states and non-U.S. jurisdictions in which the Group operates have licensing laws directed specifically toward the alarm and fire suppression industries. The Group's security businesses currently rely extensively upon the use of wireline and wireless telephone service to communicate signals. Wireline and wireless telephone companies in the U.S. are regulated by the federal and state governments. In addition, government regulation of fire safety codes can impact the Group's fire businesses. The Group’s businesses may also be affected by changes in governmental regulation of refrigerants, PFAS, energy efficiency standards, noise regulation and product safety regulations, including changes related to hydro fluorocarbons/emissions reduction efforts, energy conservation standards and the regulation of fluorinated gases. These and other laws and regulations impact the manner in which the Group conducts its business, and changes in legislation or government policies can affect the Group's worldwide operations, both favorably and unfavorably. For a more detailed description of the various laws and regulations that affect the Group's business, see Principal Risks and Uncertainties.

Regulatory Capital Expenditures

The Group’s efforts to comply with numerous federal, state and local laws and regulations applicable to its business and products often results in capital expenditures. The Group makes capital expenditures to design and upgrade its fire and security products to comply with or exceed standards applicable to the alarm, fire suppression and security industries. The Group also makes capital expenditures to meet or exceed energy efficiency standards and comply with applicable regulations, including the regulation of refrigerants, hydro fluorocarbons/emissions reduction efforts and the regulation of fluorinated gasses, particularly with respect to the Group’s HVAC products and solutions. The Group’s ongoing environmental compliance program also results in capital expenditures. Regulatory and environmental considerations are a part of all significant capital expenditure decisions; however, expenditures in fiscal 2023 related solely to regulatory compliance were not material. It is management’s expectation that the amount of any future capital expenditures related to compliance with any individual regulation or grouping of related regulations will not have a material adverse effect on the Group’s financial results or competitive position in any one year. See Note 21, "Commitments and Contingencies," of the notes to consolidated financial statements for further discussion of environmental matters.

Seasonal Factors

Certain of the Group's sales are seasonal as the demand for residential air conditioning equipment and services generally increases in the summer months. This seasonality is mitigated by the other products and services provided by the Group that have no material seasonal effect.

RESEARCH AND DEVELOPMENT EXPENDITURES

Refer to Note 1, "Basis of Presentation and Summary of Significant Accounting Policies," of the notes to consolidated financial statements for research and development expenditures. The Group has committed to invest a substantial portion of its new product research and development in climate-related innovation to develop sustainable products and services. The Group invests in enhancements to the capabilities of its product lines and services to support its strategy, meet consumer preferences and achieve regulatory compliance. This includes investments in the development of the Group’s OpenBlue platform and related service offerings, digital product capabilities, energy efficient products, and low GWP refrigerants and technology.

PRINCIPAL RISKS AND UNCERTAINTIES

Provided below is a cautionary discussion of what we believe to be the most important risk factors applicable to the Group. Discussion of these factors is incorporated by reference into and considered an integral part of this report. The disclosure of a risk should not be interpreted to imply that such risk has not already materialized. Additional risks not currently known to the Group or that the Group currently believes are immaterial may also impair the Group’s business, financial condition, results of operations and cash flows.

Risks Related to Our Business Operations

Our future growth is dependent upon our ability to develop or acquire new products and technologies that achieve market acceptance with acceptable margins.

Our future success depends on our ability to develop or acquire, manufacture and bring competitive, and increasingly complex, products and services to market quickly and cost-effectively. Our ability to develop or acquire new products, services and technologies requires the investment of significant resources. These acquisitions and development efforts divert resources from other potential investments in our businesses, and they may not lead to the development of new technologies, products or services on a timely basis. Further, we must continue to effectively adapt our products and services to a changing technological and regulatory environment to drive growth and defend against disruption caused by competitors, regulators or other external forces impacting our business and operations. If we are unable to be agile and responsive to disruption in the development of new products, services and technologies, including technologies such as artificial intelligence and machine learning, our business, financial condition, results of operations and cash flows could be adversely affected.

Moreover, as we introduce new products, we may be unable to detect and correct defects in the design of a product or in its application to a specified use, which could result in loss of sales or delays in market acceptance. Even after introduction, new or enhanced products may not satisfy customer preferences and product failures may cause customers to reject our products. Further, as we integrate emerging and rapidly evolving technologies such as artificial intelligence and machine learning into our products and services, we may not be able to anticipate or identify vulnerabilities, design flaws or security threats resulting from the use of such technology and develop adequate protection measures. As a result, these products may not achieve market acceptance and our brand image could suffer. We must also attract, develop and retain individuals with the requisite technical expertise and understanding of customers’ needs to develop new technologies and introduce new products, particularly as we increase investment in our digital services and solutions business and our OpenBlue software platform. The laws and regulations applicable to our products, and our customers’ product and service needs, change from time to time, and regulatory changes may render our products and technologies noncompliant or result in new or enhanced regulatory scrutiny. In addition, the markets for our products, services and technologies may not develop or grow as we anticipate. The failure of our technology, products or services to gain market acceptance due to more attractive offerings by our competitors, the introduction of new competitors to the market with new or innovative product offerings or the failure to address any of the above factors could significantly reduce our revenues, increase our operating costs or otherwise materially and adversely affect our business, financial condition, results of operations and cash flows.

Failure to achieve and maintain a high level of product and service quality could damage our reputation with customers and negatively impact our results.

Product and service quality issues could harm customer confidence in our company and our brands. If certain of our product and service offerings do not meet applicable safety standards or our customers’ expectations regarding quality, safety or performance, we could experience lost sales and increased costs and we could be exposed to legal, financial and reputational risks. In addition, when our products fail to perform as expected, we are exposed to warranty, product liability, personal injury and other claims. We have experienced such quality issues in the past and may experience such issues in the future.

We cannot be certain that our quality controls and procedures will reveal defects in our products or their raw materials, which may not become apparent until after the products have been placed in use in the market. Accordingly, there is a risk that products will have defects, which could require a product recall or field corrective action. Such remedial actions can be expensive to implement and may damage our reputation, customer relationships and market share. We have conducted product recalls and field corrective actions in the past and may do so again in the future.

In many jurisdictions, product liability claims are not limited to any specified amount of recovery. If any such claims or contribution requests or requirements exceed our available insurance or if there is a product recall, there could be an adverse impact on our results of operations. In addition, a recall or claim could require us to review some or all of our product portfolio to assess whether similar issues are present in other products, which could result in a significant disruption to our business and which could have a further adverse impact on our business, financial condition, results of operations and cash flows. There can be no assurance that we will not experience any material warranty or product liability claims in the future, that we will not incur significant costs to defend such claims or that we will have adequate reserves to cover any recall, repair and replacement costs.

Failure to increase organizational effectiveness through organizational improvements may reduce our profitability or adversely impact our business.

Our results of operations, financial condition and cash flows are dependent upon our ability to drive organizational improvement. We seek to drive improvements through a variety of actions, including restructuring and integration activities, digital transformation, business portfolio reviews, productivity initiatives, functionalization, executive management changes, and business and operating model assessments. Risks associated with these actions include delays in execution, additional unexpected costs, realization of fewer than estimated productivity improvements, increased change fatigue, organizational strain and adverse effects on employee morale. We may not realize the full operational or financial benefits we expect, the recognition of these benefits may be delayed, and these actions may potentially disrupt our operations. In addition, our failure to effectively manage organizational changes may lead to increased attrition and harm our ability to attract and retain key talent.

Cybersecurity incidents impacting our IT systems and digital products could disrupt business operations, result in the loss of critical and confidential information, and materially and adversely affect our reputation and results of operations.

We rely upon the capacity, reliability and security of our IT and data security infrastructure and our ability to expand and continually update this infrastructure in response to the changing needs of our business. As we implement new systems or integrate existing systems, they may not perform as expected. We also face the challenge of supporting our older systems, which are vulnerable to increased risks, including the risk of further security breaches, system failures and disruptions, and implementing necessary upgrades. In addition, certain of our employees work remotely at times, which increases our vulnerability to cybersecurity and other IT risks. If we experience a problem with the functioning of an important IT system as a result of increased burdens placed on our IT infrastructure or a security breach of our IT systems, the resulting disruptions could have a material adverse effect on our business.

Global cybersecurity threats and incidents can range from uncoordinated individual attempts to gain unauthorized access to IT systems to sophisticated and targeted measures known as advanced persistent threats directed at the Group, its products, its customers and/or its third-party service providers, including cloud providers. These threats and incidents originate from many sources globally and include malware that takes the form of computer viruses, ransomware, worms, Trojan horses, spyware, adware, scareware, rogue software, and programs that act against the computer user. Techniques used to obtain unauthorized access to, or to sabotage, IT systems or networks are constantly evolving and may not be recognized until launched against a target. We and third parties we utilize as vendors to support our business and operations have experienced, and expect to continue to experience, these types of threats and incidents. We and our third-party service providers have experienced and expect to continue to experience threats from sophisticated nation-state actors and organized criminal groups who engage in attacks (including advanced persistent threat intrusions) that add to the risks to our IT systems (including our cloud services providers' systems), internal networks, our customers' systems and the information that they store and process. Our customers, including the U.S. government, are increasingly requiring cybersecurity protections and mandating cybersecurity standards in our products, and we may incur additional costs to comply with such demands. We deploy countermeasures to deter, prevent, detect, respond to and mitigate these threats, including identity and access controls, data protection, vulnerability assessments, product software designs which we believe are less susceptible to cyber-attacks, monitoring of our IT networks and systems, maintenance of backup and protective systems and the incorporation of cybersecurity design throughout the lifecycle of our products. Despite these efforts, the Group has experienced, and will likely continue to experience, attacks and resulting breaches or breakdowns of the Group's, or its third-party service providers', databases or systems. Cybersecurity incidents, depending on their nature and scope, have resulted, and may in the future result, in the misappropriation, destruction, corruption or unavailability of critical data and confidential or proprietary information (our own or that of third parties) and the disruption of business operations. Such incidents have remained, and could in the future remain, undetected for an extended period of time, and the losses arising from such incidents could exceed our available insurance coverage for such matters. In addition, security breaches impacting our IT systems have in certain cases resulted in, and in the future could result in, a risk of loss or unauthorized disclosure or theft of information, which could lead to enforcement actions, litigation, regulatory or governmental audits, investigations and possible liability.

An increasing number of our products, services and technologies, including our OpenBlue software platform, are delivered with digital capabilities and accompanying interconnected device networks, which include sensors, data, building management systems and advanced computing and analytics capabilities. If we are unable to manage the lifecycle cybersecurity risk in development, deployment and operation of our digital platforms and services, they could become susceptible to cybersecurity incidents and lead to third-party claims that our product failures have caused damages to our customers. This risk is enhanced by the increasingly connected nature of our products and the role they play in managing building systems.

During the fourth quarter of fiscal 2023, we experienced a cybersecurity incident that disrupted portions of our internal information technology infrastructure and applications consisting of unauthorized access by a third party, exfiltration of data and the deployment of ransomware, which in turn caused disruptions and limitation of access to portions of our business applications that support aspects of our operations and corporate functions. As a result of this incident, we experienced disruptions to our normal operations which had an adverse impact on our financial performance. We have and may continue to incur significant costs in connection with the cybersecurity incident and any future cybersecurity incidents, including infrastructure investments or remediation efforts. Further, we could experience other additional consequences in the future as a result of the incident, including, reputational damage, exposure to legal claims or enforcement actions and fines levied by governmental organizations, which in turn could materially and adversely affect our results of operations. In addition, limitations on our ability to analyze and investigate the incident due to limitations on the availability of historical logs and other forensic data may impact our ability to identify all of the impacts and root causes of the cybersecurity incident. There can be no assurance that additional unauthorized access or cyber incidents will not occur or that we will not suffer material losses in the future. Unauthorized access or cyber incidents could occur more frequently and on a more significant scale to those we have suffered to date. We could also experience similar consequences as a result of future cybersecurity incidents. Other potential consequences of future cybersecurity incidents could include the theft of intellectual property and the diminution in the value of our investment in research, development and engineering, which in turn could materially and adversely affect our competitiveness and results of operations.

We identified a material weakness in our internal control over financial reporting which, if not remediated appropriately or timely, could result in the loss of investor confidence and adversely impact our business operations and our stock price.

As a result of the cybersecurity incident experienced beginning in September 2023, and as disclosed in Part II, Item 9A of this report, we have identified a material weakness in our internal control over financial reporting related to not maintaining sufficient information technology (“IT”) controls to prevent or detect, on a timely basis, unauthorized access to certain of the Group’s financial reporting systems. Accordingly, management concluded that our internal control over financial reporting was not effective as of September 30, 2023. If we are unable to remediate the material weakness, or if we are otherwise unable to maintain effective internal control over financial reporting, then our ability to record, process and report financial information accurately, and to prepare financial statements within required time periods, could be adversely affected. If our financial statements are not accurate, investors may not have a complete understanding of our operations. Likewise, if our financial statements are not filed on a timely basis, we could be in violation of covenants contained in the agreements governing our debt and other borrowings. We could also be subject to sanctions or investigations by the stock exchange on which our shares are listed, the SEC or other regulatory authorities, which could result in a material adverse effect on our business. These outcomes could subject us to litigation, civil or criminal investigations or enforcement actions requiring the expenditure of financial resources and diversion of management time, could negatively affect investor confidence in the accuracy and completeness of our financial statements and could also adversely impact our stock price and our access to the capital markets. Moreover, while we are implementing measures designed to help ensure that control deficiencies contributing to the material weakness are remediated as soon as possible, these measures will result in additional costs, including third-party expenditures engaging security specialists and implementing certain new IT access, security and recovery measures, and such costs could adversely affect our results of operations, financial condition and cash flows.

Data privacy, identity protection and information security compliance may require significant resources and presents certain risks.

We collect, store, have access to and otherwise process certain confidential or sensitive data, including proprietary business information, customer data, personal data or other information that is subject to privacy and security laws, regulations and/or customer-imposed controls. Despite our efforts to protect such data, our business and our products may be vulnerable to security incidents, theft, misplaced or lost data, programming errors, or errors that could potentially lead to compromising such data, improper use of our products, systems, software solutions or networks, unauthorized access, use, disclosure, modification or destruction of information, defective products, production downtimes and operational disruptions. During the fourth quarter of fiscal 2023, we experienced a cybersecurity event consisting of unauthorized access, data exfiltration and deployment of ransomware by a third party to a portion of our internal IT infrastructure. We are currently in the process of analyzing the data accessed, exfiltrated or otherwise impacted during the cybersecurity incident. The actual or perceived risk of theft, loss, fraudulent use or misuse of customer, employee or other data as a result of the cybersecurity incident, as well as non-compliance with applicable industry standards or our contractual or other legal obligations or privacy and information security policies regarding such data, could result in costs, fines, litigation or regulatory actions. We could face similar consequences in the future if we, our suppliers, channel partners, customers or other third parties experience the actual or perceived risk of theft, loss, fraudulent use or misuse of data, including as a result of employee error or malfeasance, or as a result of the imaging, software, security and other products we incorporate into our products. Such an event could lead customers to select the products and services of our competitors. Both the cybersecurity incident and similar future incidents could harm our reputation, cause unfavorable publicity or otherwise adversely affect certain potential customers' perception of the security and reliability of our services as well as our credibility and reputation, which could result in lost sales.

In addition, we operate in an environment in which there are different and potentially conflicting data privacy laws in effect in the various U.S. states and foreign jurisdictions in which we operate and we must understand and comply with each law and standard in each of these jurisdictions while ensuring the data is secure. For example, proposed regulations restricting the use of biometric security technology could impact the products and solutions offered by our security business. Government enforcement actions can be costly and interrupt the regular operation of our business, and violations of data privacy laws can result in fines, reputational damage and civil lawsuits, any of which may adversely affect our business, reputation and financial statements.

Some of our contracts do not contain limitations of liability, and even where they do, there can be no assurance that limitations of liability in our contracts are sufficient to protect us from liabilities, damages, or claims related to our data privacy and security obligations. While we maintain general liability insurance coverage and coverage for errors or omissions, such coverage might not be adequate or otherwise protect us from liabilities or damages with respect to claims alleging compromises of customer data, that such coverage will continue to be available to us on acceptable terms or at all, or that such coverage will pay future claims. The successful assertion of one or more large claims against us that exceeds our available insurance coverage, or results in changes to our insurance policies (including premium increases or the imposition of large deductible or co-insurance requirements), could have an adverse effect on our business.

Infringement or expiration of our intellectual property rights, or allegations that we have infringed upon the intellectual property rights of third parties, could negatively affect us.

We rely on a combination of trademarks, trade secrets, patents, copyrights, know-how, confidentiality provisions and licensing arrangements to establish and protect our proprietary rights. We cannot guarantee, however, that the steps we have taken to protect our intellectual property will be adequate to prevent infringement of our rights or misappropriation or theft of our technology, trade secrets or know-how. For example, effective patent, trademark, copyright and trade secret protection may be unavailable or limited in some of the countries in which we operate. In addition, while we generally enter into confidentiality agreements with our employees and third parties to protect our trade secrets, know-how, business strategy and other proprietary information, such confidentiality agreements could be breached or otherwise may not provide meaningful protection for our trade secrets and know-how related to the design, manufacture or operation of our products. From time to time we resort to litigation to protect our intellectual property rights. Such proceedings can be burdensome and costly, and we may not prevail. Further, adequate remedies may not be available in the event of an unauthorized use or disclosure of our trade secrets and manufacturing expertise. Finally, for those products in our portfolio that rely on patent protection, once a patent has expired, the product is generally open to competition. Products under patent protection usually generate significantly higher revenues than those not protected by patents. If we fail to successfully enforce our intellectual property rights, our competitive position could suffer, which could harm our business, financial condition, results of operations and cash flows.

In addition, we are, from time to time, subject to claims of intellectual property infringement by third parties, including practicing entities and non-practicing entities. Regardless of the merit of such claims, responding to infringement claims can be expensive and time-consuming. The litigation process is subject to inherent uncertainties, and we may not prevail in litigation matters regardless of the merits of our position. Intellectual property lawsuits or claims may become extremely disruptive if the plaintiffs succeed in blocking the trade of our products and services and they may have a material adverse effect on our business, financial condition, results of operations and cash flows.

We rely on our global direct installation channel for a significant portion of our revenue. Failure to maintain and grow the installed base resulting from direct channel sales could adversely affect our business.

Unlike many of our competitors, we rely on a direct sales channel for a substantial portion of our revenue. The direct channel provides for the installation of fire and security solutions, and HVAC equipment manufactured by us. This represents a significant distribution channel for our products, creates a large installed base of our fire and security solutions and HVAC equipment, and creates opportunities for longer term service and monitoring revenue. If we are unable to maintain or grow this installation business, whether due to changes in economic conditions, a failure to anticipate changing customer needs, a failure to introduce innovative or technologically advanced solutions, or for any other reason, our installation revenue could decline, which could in turn adversely impact our product pull-through and our ability to grow service and monitoring revenue.

Global climate change and related regulations could negatively affect our business.

The effects of climate change create financial risks to our business. For example, the effects of climate change could disrupt our operations by impacting the availability and cost of materials needed for manufacturing, exacerbate existing risks to our supply chain and increase insurance and other operating costs. These factors may impact our decisions to construct new facilities or maintain existing facilities in areas most prone to physical climate risks. We could also face indirect financial risks passed through the supply chain and disruptions that could result in increased prices for our products and the resources needed to produce them.

Increased public awareness and concern regarding global climate change has resulted in more regulations designed to reduce greenhouse gas emissions. These regulations tend to be implemented under global, national and sub-national climate objectives or policies, and target the global warming potential ("GWP") of refrigerants, equipment energy efficiency, and the combustion of fossil fuels as a heating source. Many of our products consume energy and use refrigerants. Regulations which seek to reduce greenhouse gas emissions present a risk to our global products business, predominantly our HVAC business, if we do not adequately prepare our product portfolio. As a result, we have and may be in the future required to make increased research and development and other capital expenditures to improve our product portfolio in order to meet new regulations and standards. Further, our customers and the markets we serve may impose emissions or other environmental standards through regulation, market-based emissions policies or consumer preference that we may not be able to timely meet due to the required level of capital investment or technological advancement. While we have been committed to continuous improvements to our product portfolio to meet and exceed anticipated regulations and preferences, there can be no assurance that our commitments will be successful, that our products will be accepted by the market, that proposed regulation or deregulation will not have a negative competitive impact or that economic returns will reflect our investments in new product development.

We are subject to emerging and competing climate regulations. There continues to be a lack of consistent climate legislation, which creates economic and regulatory uncertainty. Such regulatory uncertainty extends to incentives, which if discontinued, could adversely impact the demand for energy efficient buildings, and could increase costs of compliance. These factors may impact the demand for our products, obsolescence of our products and our results of operations.

Failure to achieve our public sustainability commitments could negatively affect our reputation and business.

As of the date of this filing, we have made several public commitments regarding our intended reduction of carbon emissions, including commitments to achieve net zero carbon emissions by 2040 and the establishment of science-based targets to reduce carbon emissions from our operations and the operations of our customers. Although we intend to meet these commitments, we may be required to expend significant resources to do so, which could increase our operational costs. Further, there can be no assurance of the extent to which any of our commitments will be achieved, or that any future investments we make in furtherance of achieving such targets and goals will meet investor expectations or any binding or non-binding legal standards regarding sustainability performance. Moreover, we may determine that it is in the best interest of our company and our shareholders to prioritize other business, social, governance or sustainable investments over the achievement of our current commitments based on economic, regulatory and social factors, business strategy or pressure from investors, activist groups or other stakeholders. If we are unable to meet these commitments, then we could incur adverse publicity and reaction from investors, activist groups and other stakeholders, which could adversely impact the perception of our brand and our products and services by current and potential customers, as well as investors, which could in turn adversely impact our financial condition and results of operations.

The ability of suppliers to deliver raw materials, parts and components to our manufacturing facilities, and our ability to manufacture and deliver services without disruption, could affect our results of operations.

We use a wide range of materials (primarily steel, copper and aluminum) and components (including semiconductors and other electronic components) in the global production of our products, which come from numerous suppliers around the world. Because not all of our business arrangements provide for guaranteed supply and some key parts may be available only from a single supplier or a limited group of suppliers, we are subject to supply and pricing risk. Our operations and those of our suppliers are subject to disruption for a variety of reasons, including supplier plant shutdowns or slowdowns, transportation delays, work stoppages, labor relations, labor shortages, global geopolitical instability, price inflation, governmental regulatory and enforcement actions, intellectual property claims against suppliers, financial issues such as supplier bankruptcy, information technology failures, and hazards such as fire, earthquakes, flooding, or other natural disasters. For example, during 2022 and 2023 we were impacted by the following supply chain issues, due to economic, political and other factors largely beyond our control: increased input material costs and component shortages; supply chain disruptions and delays and cost inflation. In addition, some of our subcontractors have experienced supply chain and labor disruptions, which have and could in the future impact our ability to timely complete projects and convert our backlog. Such disruptions have and could in the future interrupt our ability to manufacture or obtain certain products and components, thereby adversely impacting our ability to provide products to customers, convert our backlog into revenue and realize expected profit margins. We could experience the reoccurrence of similar or new disruptions in the future, the effect of which will depend on our ability to successfully mitigate and offset the impact of these disruptions. Any significant disruption could materially and adversely affect our business, financial condition, results of operations and cash flows.

Material supply shortages and delays in deliveries, along with other factors such as price inflation, can also result in increased pricing. While many of our customers permit quarterly or other periodic adjustments to pricing based on changes in component prices and other factors, we may bear the risk of price increases that occur between any such repricing or, if such repricing is not permitted, during the balance of the term of the particular customer contract. The inability to timely convert our backlog due to supply chain disruptions subjects us to pricing risk due to cost inflation occurring between the generation of backlog and its conversion into revenue. If we are unable to effectively manage the impacts of price inflation and timely convert our backlog, our results of operations, financial condition and cash flows could materially and adversely be affected.

Our business success depends on attracting and retaining qualified personnel.

Our ability to sustain and grow our business requires us to hire, retain and develop a high-performance, customer-centric and diverse management team and workforce. Continuous efficient and timely customer service, customer support and customer intimacy are essential to enabling customer loyalty and driving our financial results. Our growth strategies require that we pivot to new talent capability investments and build the workforce of the future, with an emphasis on developing skills in digital and consultative, outcome-based selling. Failure to ensure that we have the leadership and talent capacity with the necessary skillset and experience could impede our ability to deliver our growth objectives, execute our strategic plan and effectively transition our leadership. Any unplanned turnover or inability to attract and retain key employees could have a negative effect on our results of operations.

Our ability to convert backlog into revenue requires us to maintain a labor force that is sufficiently large enough to support our manufacturing operations to meet customer demand, as well as provide on-site services and project support for our customers. This includes recruiting, hiring and retaining skilled trade workers to support our direct channel field businesses. We have in the past, and could in the future, experience shortages for skilled or unskilled labor. The impacts of such labor shortages could limit our ability to convert backlog into revenue and negatively impact our results of operations.

A material disruption of our operations due to catastrophic or geopolitical events, particularly at our monitoring and/or manufacturing facilities, could materially and adversely affect our business.

If our operations, particularly at our monitoring facilities and/or manufacturing facilities, were to be disrupted as a result of significant equipment failures, natural disasters, pandemics, climate change, cybersecurity incidents, power outages, fires, explosions, abrupt political change, armed conflict, terrorism, sabotage, adverse weather conditions, public health crises, labor disputes, labor shortages or other reasons, we may be unable to effectively respond to alarm signals, fill customer orders, convert our backlog, collect revenue and otherwise meet obligations to or demand from our customers, which could adversely affect our financial performance. These events may also cause us to experience increased costs and reduced productivity. For example, our recent cybersecurity incident caused disruptions to our operations, adversely affecting our financial performance.

The occurrence or reoccurrence of regional epidemics or a global pandemic, such as COVID-19, may adversely affect our operations, financial condition, and results of operations. The extent to which global pandemics impact our business going forward will depend on factors such as the duration and scope of the pandemic; governmental, business, and individuals' actions in response to the pandemic; and the impact on economic activity, including the possibility of recession or financial market instability. Measures to contain a global pandemic may intensify other risks described in these Risk Factors.

Interruptions to production could increase our costs and reduce our sales. Any interruption in production capability could require us to make substantial capital expenditures or purchase alternative material at higher costs to fill customer orders, which could negatively affect our profitability and financial condition. We maintain property damage insurance that we believe to be adequate to provide for reconstruction of facilities and equipment, cybersecurity insurance to mitigate losses resulting from cybersecurity incidents, as well as business interruption insurance to mitigate losses resulting from significant production interruption or shutdown caused by an insured loss. However, any recovery under our insurance policies may not offset the lost sales or increased costs that may be experienced during the disruption of operations, which could adversely affect our business, financial condition, results of operations and cash flows.

Our business may be adversely affected by work stoppages, union negotiations, labor disputes and other matters associated with our labor force.

We employ approximately 100,000 people worldwide. Approximately 22% of these employees are covered by collective bargaining agreements or works councils. Although we believe that our relations with the labor unions and works councils that represent our employees are generally good and we have experienced no material strikes or work stoppages recently, no assurances can be made that we will not experience in the future these and other types of conflicts with labor unions, works councils, other groups representing employees or our employees generally, or that any future negotiations with our labor unions will not result in significant increases in our cost of labor. Additionally, a work stoppage at one of our suppliers could materially and adversely affect our operations if an alternative source of supply were not readily available. Work stoppages by employees of our customers could also result in reduced demand for our products.

Risks Related to Macroeconomic and Political Conditions

Some of the industries in which we operate are cyclical and, accordingly, demand for our products and services could be adversely affected by downturns in these industries.

Much of the demand for installation of our products and solutions is driven by commercial, institutional, industrial, data center, governmental and residential construction, industrial facility expansion, retrofit activity, maintenance projects and other capital investments in buildings within the sectors that we serve. Construction and other capital investment projects are heavily dependent on general economic conditions, localized demand for real estate and availability of credit, public funding or other sources of financing. Some of the real estate markets we serve are prone to significant fluctuations in supply and demand. In addition, most real estate developers rely heavily on project financing in order to initiate and complete projects. Declines in real estate values and increases in prevailing interest rates could lead to significant reductions in the demand for and availability of project financing, even in markets where demand may otherwise be sufficient to support new construction. These factors could in turn temper demand for new building products and solutions and have a corresponding impact on our financial condition, results of operations and cash flows.

Levels of industrial capital expenditures for facility expansions and maintenance are dependent on general economic conditions, economic conditions within specific industries we serve, expectations of future market behavior and available financing. The businesses of many of our industrial customers are to varying degrees cyclical and have experienced periodic downturns. During such economic downturns, customers in these industries tend to delay major capital projects, including greenfield construction, maintenance projects and upgrades. Additionally, demand for our products and services may be affected by volatility in energy, component and commodity prices, commodity and component availability and fluctuating demand forecasts, as our customers may be more conservative in their capital planning, which may reduce demand for our products and services as projects are postponed or cancelled. Increases in prevailing interest rates or disruptions in financial markets and banking systems could make credit and capital markets difficult for our customers to access and could significantly raise the cost of new debt for our customers. Any difficulty in accessing these markets and the increased associated costs can have a negative effect on investment in large capital projects, including necessary maintenance and upgrades, even during periods of favorable end-market conditions.

Many of our customers inside and outside of the industrial and commercial sectors, including governmental and institutional customers, have experienced budgetary constraints as sources of revenue have been negatively impacted by adverse or stagnant economic conditions, including continued increases in interest rates. These budgetary constraints have in the past, and may in the future, reduce demand for our products and services among governmental and institutional customers.

Reduced demand for our products and services could result in the delay or cancellation of existing orders or lead to excess capacity, which unfavorably impacts our absorption of fixed costs. This reduced demand may also erode average selling prices in the industries we serve. Any of these results could materially and adversely affect our business, financial condition, results of operations and cash flows.

Economic, political, credit and capital market conditions could adversely affect our financial performance, our ability to grow or sustain our business and our ability to access the capital markets.

We compete around the world in various geographic regions and product markets. Global economic and political conditions affect each of our primary businesses and the businesses of our customers and suppliers. Recessions, economic downturns, price instability, inflation, slowing economic growth and social and political instability in the industries and/or markets where we compete could negatively affect our revenues and financial performance in future periods, result in future restructuring charges, and adversely impact our ability to grow or sustain our business. For example, current macroeconomic and political instability caused by rising interest rates, global supply chain disruptions, inflation, ongoing conflicts between Russia and Ukraine as well as Israel and Hamas, geopolitical tensions and the strengthening of the U.S. dollar, have and could continue to adversely impact our results of operations. Other potential consequences arising from the conflicts, the further escalation of geopolitical tensions globally and their effect on our business and results of operations as well as the global economy, cannot be predicted. This may include further economic sanctions, embargoes, regional instability, geopolitical shifts, regional or international expansion of current conflicts, energy instability, potential retaliatory action by governments, supply chain disruptions, disruption to local markets, increased cybersecurity attacks against us, our third-party service providers and customers, collateral consequences from cyber conflicts between nation-states or other politically motivated actors targeting critical technology infrastructure. and increased tensions among countries in which we operate. Our failure to adequately react to these and other political and economic conditions could materially and adversely affect our results of operations, financial condition or liquidity.

The capital and credit markets provide us with liquidity to operate and grow our business beyond the liquidity that operating cash flows provide. A worldwide economic downturn and/or disruption of the credit markets could reduce our access to capital necessary for our operations and executing our strategic plan. In addition, we have experienced, and expect to continue to experience, increased capital costs due to increases in global interest rates. If our access to capital were to become significantly constrained, or if costs of capital increased significantly due to increased interest rates, lowered credit ratings, prevailing industry conditions, the volatility of the capital markets or other factors; then our financial condition, results of operations and cash flows could be adversely affected.

Risks associated with our non-U.S. operations could adversely affect our business, financial condition and results of operations.

We have significant operations in a number of countries outside the U.S., some of which are located in emerging markets. Long-term economic and geopolitical uncertainty in any of the regions of the world in which we operate, such as Asia, South America, the Middle East, Europe and emerging markets, could result in the disruption of markets and negatively affect cash flows from our operations to cover our capital needs and debt service requirements.

In addition, as a result of our global presence, a significant portion of our revenues and expenses is denominated in currencies other than the U.S. dollar. We are therefore subject to non-U.S. currency risks and non-U.S. exchange exposure. While we employ financial instruments to hedge some of our transactional foreign exchange exposure, these activities do not insulate us completely from those exposures. Exchange rates can be volatile and a substantial weakening of foreign currencies against the U.S. dollar could reduce our profit margin in various locations outside of the U.S. and adversely impact the comparability of results from period to period. During each of 2022 and 2023, we experienced a reduction in revenue and profits as a result of the significant strengthening of the U.S. dollar against foreign currencies. The continued strength of the U.S. dollar could continue to adversely impact our revenue and profit in non-U.S. jurisdictions.

There are other risks that are inherent in our non-U.S. operations, including the potential for changes in socio-economic conditions, laws and regulations, including anti-trust, labor and environmental laws, and monetary and fiscal policies; the ability to enforce rights, collect revenues and protect assets in foreign jurisdictions; protectionist measures that may prohibit acquisitions or joint ventures, or impact trade volumes; unsettled or unstable political conditions; international conflict; government-imposed plant or other operational shutdowns; backlash from foreign labor organizations related to our restructuring actions; corruption; natural and man-made disasters, hazards and losses; violence, civil and labor unrest, and possible terrorist attacks. These and other factors may have a material adverse effect on our business and results of operations.

Changes in U.S. or foreign trade policies and other factors beyond our control may adversely impact our business and operating results.

Geopolitical tensions and trade disputes can disrupt supply chains and increase the cost of our products. This could cause our products to be more expensive for customers, which could reduce the demand for or attractiveness of such products. In addition, a geopolitical conflict in a region where we operate could disrupt our ability to conduct business operations in that region. Countries also could adopt restrictive trade measures, such as laws and regulations concerning investments and limitations on foreign ownership of businesses, taxation, foreign exchange controls, capital controls, employment regulations and the repatriation of earnings and controls on imports or exports of goods, technology, or data, any of which could adversely affect our operations and supply chain and limit our ability to offer our products and services as intended. 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 or from where we import products or raw materials (either directly or through our suppliers) could have an impact on our competitive position, business operations and financial results. For example, the U.S., China and other countries continue to implement restrictive trade actions, including tariffs, export controls, sanctions, legislation favoring domestic investment and other actions impacting the import and export of goods, foreign investment and foreign operations in jurisdictions in which we operate. These kinds of restrictions could be adopted with little to no advanced notice, and we may not be able to effectively mitigate the adverse impacts from such measures. Political uncertainty surrounding trade or other international disputes also could have a negative impact on customer confidence and willingness to spend money, which could impair our future growth. Any of these events could increase the cost of our products, create disruptions to our supply chain and impair our ability to effectively operate and compete in the countries where we do business.

Volatility in commodity prices may adversely affect our results of operations.

Increases in commodity costs can negatively impact the profitability of orders in backlog as prices on such orders are typically fixed; therefore, in the short-term, our ability to adjust for changes in certain commodity prices is limited. In these cases, if we are not able to recover commodity cost increases through price increases to our customers on new orders, then such increases will have an adverse effect on our results of operations. In cases where commodity price risk cannot be naturally offset or hedged through supply-based fixed-price contracts, we use commodity hedge contracts to minimize overall price risk associated with our anticipated commodity purchases. Unfavorability in our hedging programs during a period of declining commodity prices could result in lower margins as we reduce prices to match the market on a fixed commodity cost level. Additionally, to the extent we do not or are unable to hedge certain commodities and the commodity prices substantially increase, such increases will have an adverse effect on our results of operations.

During fiscal 2023, we experienced increased commodity costs as a result of global macroeconomic trends, including global price inflation, supply chain disruption and the Russia/Ukraine conflict. We could experience further cost fluctuations in the future, which could negatively impact our results of operations to the extent we are unable to successfully mitigate and offset the impact of increased costs.

Risks Related to Government Regulations

Our businesses operate in regulated industries and are subject to a variety of complex and continually changing laws and regulations.

Our operations and employees are subject to various U.S. federal, state and local licensing laws, codes and standards and similar foreign laws, codes, standards and regulations. Changes in laws or regulations could require us to change the way we operate or to utilize resources to maintain compliance, which could increase costs or otherwise disrupt operations. In addition, failure to comply with any applicable laws or regulations could result in substantial fines or revocation of our operating permits and licenses. Competition or other regulatory investigations can continue for several years, be costly to defend and can result in substantial fines. If laws and regulations were to change or if we or our products failed to comply, our business, financial condition and results of operations could be adversely affected.

Due to the international scope of our operations, the system of laws and regulations to which we are subject is complex and includes regulations issued by the U.S. Customs and Border Protection, the U.S. Department of Commerce's Bureau of Industry and Security, the U.S. Treasury Department's Office of Foreign Assets Control and various non U.S. governmental agencies, including applicable export controls, anti-trust, customs, currency exchange control and transfer pricing regulations, laws regulating the foreign ownership of assets, and laws governing certain materials that may be in our products. No assurances can be made that we will continue to be found to be operating in compliance with, or be able to detect violations of, any such laws or regulations.

We are also subject to a complex network of tax laws and tax treaties that impact our effective tax rate. For more information on risks related to tax regulation, see “Risks Related to Tax Matters” below.

We cannot predict the nature, scope or effect of future regulatory requirements to which our operations might be subject or the manner in which existing laws might be administered or interpreted.

We are subject to requirements relating to environmental and safety regulations and environmental remediation matters which could adversely affect our business, results of operation and reputation.

We are subject to numerous federal, state and local environmental laws and regulations governing, among other things, solid and hazardous waste storage, treatment and disposal, and remediation of releases of hazardous materials. There are significant capital, operating and other costs associated with compliance with these environmental laws and regulations. Environmental laws and regulations may become more stringent in the future, which could increase costs of compliance, decrease demand for our products, create reputational harm or require us to manufacture with alternative technologies and materials. For example, our subsidiary Tyco Fire Protection Products announced it will discontinue the production and sale of fluorinated firefighting foams by June 2024, including Aqueous Film-Forming Foam ("AFFF") and related products, and will transition to non-fluorinated foam alternatives.

Federal, state and local authorities also regulate a variety of matters, including, but not limited to, health, safety laws governing employee injuries, and permitting requirements in addition to the environmental matters discussed above. If we are unable to adequately comply with applicable health and safety regulations and provide our employees with a safe working environment, we may be subject to litigation and regulatory action, in addition to negatively impacting our ability to attract and retain talented employees. New legislation and regulations may require us to make material changes to our operations, resulting in significant increases to the cost of production. Additionally, violations of environmental, health and safety laws are subject to civil, and, in some cases, criminal sanctions. As a result of these various uncertainties, we may incur unexpected interruptions to operations, fines, penalties or other reductions in income which could adversely impact our business, financial condition and results of operations.

We could be adversely affected by violations of the U.S. Foreign Corrupt Practices Act, the U.K. Bribery Act and similar anti-bribery laws around the world.

The U.S. Foreign Corrupt Practices Act (the "FCPA"), the U.K. Bribery Act and similar anti-bribery laws in other jurisdictions generally prohibit companies and their intermediaries from making improper payments to government officials or other persons for the purpose of obtaining or retaining business, and require that companies maintain accurate books and records. Our policies mandate compliance with these laws. We operate in many parts of the world that are recognized as having governmental and commercial corruption and local customs and practices that can be inconsistent with anti-bribery laws. We cannot provide assurance that our internal control policies and procedures will preclude reckless or criminal acts committed by our employees or third-party intermediaries. Where we believe or have reason to believe that our employees or agents have or may have violated applicable anti-corruption laws, or if we are subject to allegations of any such violations, we have and will investigate the allegations and from time to time as necessary may engage outside counsel to investigate the relevant facts and circumstances, which can be expensive and require significant time and attention from senior management. Violations of these laws may result in criminal or civil sanctions, which could disrupt our business and result in a material adverse effect on our reputation, business, financial condition, results of operations and cash flows. In addition, we could be subject to commercial impacts such as lost revenue from customers who decline to do business with us as a result of such compliance matters, which also could have a material adverse effect on our reputation, business, financial condition, results of operations and cash flows.

We are subject to risks arising from regulations applicable to companies doing business with the U.S. government.

Our customers include many U.S. federal, state and local government authorities. Doing business with the U.S. federal, state and local governments subjects us to certain particular risks, including dependence on the level of government spending and compliance with and changes in governmental procurement and security regulations. Agreements relating to the sale of products to government entities may be subject to termination, reduction or modification, either at the convenience of the government or for failure to perform under the applicable contract. We are subject to potential government investigations of business practices and compliance with government procurement and security regulations, which can be expensive and burdensome. If we were charged with wrongdoing as a result of an investigation, we could be suspended from bidding on or receiving awards of new government contracts, which could have a material adverse effect on our results of operations. In addition, various U.S. federal and state legislative proposals have been made in the past that would deny governmental contracts to U.S. companies that have moved their corporate location abroad. We are unable to predict the likelihood that, or final form in which, any such proposed legislation might become law, the nature of regulations that may be promulgated under any future legislative enactments, or the effect such enactments and increased regulatory scrutiny may have on our business.

Risks Related to Litigation

Potential liability for environmental contamination could result in substantial costs.

We have projects underway at multiple current and former manufacturing and testing facilities to investigate and remediate environmental contamination resulting from past operations by us or by other businesses that previously owned or used the properties, including our Fire Technology Center and Stanton Street manufacturing facility located in Marinette, Wisconsin. These projects relate to a variety of activities, including arsenic, solvent, oil, metal, lead, PFOS, PFOA and/or other per- and polyfluorinated substances ("PFAS") and other hazardous substance contamination cleanup; and structure decontamination and demolition, including asbestos abatement. Governments in the United States and internationally have increasingly been regulating PFAS, which is contained in certain of the Group's firefighting foam products. These regulations include declining emission standards and limits set as to the presence of certain compounds. Because of uncertainties associated with environmental regulation and environmental remediation activities at sites where we may be liable, future expenses that we may incur to remediate identified sites and resolve outstanding litigation could be considerably higher than the current accrued liability on our consolidated statement of financial position, which could have a material adverse effect on our business, results of operations and cash flows.

In addition, we have been named, along with others, in a number of class action and other lawsuits relating to the use of fire-fighting foam products by the U.S. Department of Defense, the U.S. military and others for fire suppression purposes and related training exercises. It is difficult to predict the outcome or ultimate financial exposure, if any, represented by these matters, and there can be no assurance that any such exposure will not be material. Such claims may also negatively affect our reputation. See Note 21, “Commitments and Contingencies,” of the notes to consolidated financial statements for additional information on these matters.

We are party to asbestos-related product litigation that could adversely affect our financial condition, results of operations and cash flows.

We and certain of our subsidiaries, along with numerous other third parties, are named as defendants in personal injury lawsuits based on alleged exposure to asbestos containing materials. These cases typically involve product liability claims based primarily on allegations of manufacture, sale or distribution of industrial products that either contained asbestos or were used with asbestos containing components. We cannot predict with certainty the extent to which we will be successful in litigating or otherwise resolving lawsuits on satisfactory terms in the future and we continue to evaluate different strategies related to asbestos claims filed against us including entity restructuring and judicial relief. Unfavorable rulings, judgments or settlement terms could have a material adverse impact on our business and financial condition, results of operations and cash flows. See Note 21, “Commitments and Contingencies,” of the notes to consolidated financial statements for additional information on these matters.

Legal proceedings in which we are, or may be, a party may adversely affect us.

We are currently, and may in the future, become subject to legal proceedings and commercial or contractual disputes. These are typically claims that arise in the normal course of business including, without limitation, commercial or contractual disputes with our suppliers or customers, intellectual property matters, third party liability, including product liability claims, and employment claims. In addition, we may be exposed to greater risks of liability for employee acts or omissions, or system failure, in our fire and security businesses than may not be inherent in other businesses. In particular, because many of our fire and security products and services are intended to protect lives and real and personal property, we may have greater exposure to litigation risks than other businesses. The nature of the services we provide exposes us to the risks that we may be held liable for employee acts or omissions or system failures. As a result, such employee acts or omissions or system failures could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Risks Relating to Strategic Transactions

We may be unable to successfully execute or effectively integrate acquisitions or joint ventures.

We expect acquisitions of businesses and assets, as well as joint ventures (or other strategic arrangements), to play a role in our future growth and our ability to build capabilities in our products and services. We cannot be certain that we will be able to identify attractive acquisition or joint venture targets, obtain financing for acquisitions on satisfactory terms, successfully acquire identified targets or form joint ventures, or manage the timing of acquisitions with capital obligations across our businesses. Competition for acquisition opportunities may rise, thereby increasing our costs of making acquisitions or causing us to refrain from making further acquisitions.

Acquisitions and investments may involve significant cash expenditures, debt incurrences, equity issuances, operating losses and expenses and may be dilutive to earnings. Acquisitions involve numerous other risks, including: the diversion of management attention to integration matters; difficulties in integrating operations and systems; challenges in conforming standards, controls, procedures and accounting and other policies, business cultures and compensation structures; difficulties in assimilating employees and in attracting and retaining key personnel; challenges in successfully integrating and operating businesses with different characteristics than our current core businesses; challenges in keeping existing customers and obtaining new customers; difficulties in achieving anticipated cost savings, synergies, business opportunities and growth prospects; contingent liabilities (including contingent tax liabilities and earn-out obligations) that are larger than expected; and potential unknown liabilities, adverse consequences and unforeseen increased expenses associated with acquired companies. The goodwill and intangible assets recorded with past acquisitions were significant and impairment of such assets could result in a material adverse impact on our financial condition and results of operations.

Many of these factors are outside of our control, and any one of them could result in increased costs, decreased expected revenues and diversion of management time and energy, which could materially and adversely impact our business, financial condition and results of operations.

Risks associated with joint venture investments may adversely affect our business and financial results.

We have entered into several joint ventures and we may enter into additional joint ventures in the future. Our joint venture partners may at any time have economic, business or legal interests or goals that are inconsistent with our goals or with the goals of the joint venture. In addition, we may compete against our joint venture partners in certain of our markets. Disagreements with our business partners may impede our ability to maximize the benefits of our partnerships. Our joint venture arrangements may require us, among other matters, to pay certain costs or to make certain capital investments or to seek our joint venture partner's consent to take certain actions. In addition, our joint venture partners may be unable or unwilling to meet their economic or other obligations under the operative documents, and we may be required to either fulfill those obligations alone to ensure the ongoing success of a joint venture or to dissolve and liquidate a joint venture. These risks could result in a material adverse effect on our business and financial results.

Divestitures of some of our businesses or product lines may materially adversely affect our financial condition, results of operations or cash flows.

We continually evaluate the performance and strategic fit of all of our businesses and may sell businesses or product lines. Divestitures involve risks, including difficulties in the separation of operations, services, products and personnel, the diversion of management's attention from other business concerns, the disruption of our business, the potential loss of key employees and the retention of uncertain environmental or other contingent liabilities related to the divested business. Some divestitures may be dilutive to earnings. In addition, divestitures may result in significant asset impairment charges, including those related to goodwill and other intangible assets, which could have a material adverse effect on our financial condition and results of operations. In the event we are unable to successfully divest a business or product line, we may be forced to wind down such business or product line, which could materially and adversely affect our results of operations and financial condition. We cannot assure you that we will be successful in managing these or any other significant risks that we encounter in divesting a business or product line, and any divestiture we undertake could materially and adversely affect our business, financial condition, results of operations and cash flows, and may also result in a diversion of management attention, operational difficulties and losses.

Risks Related to Tax Matters

Future potential changes to the tax laws could adversely affect us and our affiliates.

Legislative and regulatory action may be taken in the U.S. and other jurisdictions in which we operate, which, if ultimately enacted, could override tax treaties upon which we rely, or broaden the circumstances under which we would be considered a U.S. resident, each of which could materially and adversely affect our effective tax rate. We cannot predict the outcome of any specific legislative or regulatory proposals and such changes could have a prospective or retroactive application. However, if proposals were enacted that had the effect of disregarding our incorporation in Ireland or limiting Johnson Controls International plc's ability, as an Irish company, to take advantage of tax treaties with the U.S., we could be subject to increased taxation, potentially significant expense, and/or other adverse tax consequences.

The U.S. enacted the Inflation Reduction Act of 2022 ("IRA") in August 2022, which, among other sections, creates a new book minimum tax of at least 15% of consolidated GAAP pre-tax income for corporations with average book income in excess of $1 billion. The book minimum tax will first apply to us in fiscal 2024. We do not expect the IRA to have a material impact on our effective tax rate, however, it is possible that the U.S. Congress could advance other tax legislation proposals in the future that could have a material impact on our tax rate. In addition, in October 2021, the Organization for Economic Co-operation and Development ("OECD")/G20 inclusive framework on Base Erosion and Profit Shifting (the Inclusive Framework) published a statement updating and finalizing the key components of a two-pillar plan on global tax reform which has now been agreed upon by the majority of OECD members. Pillar One allows countries to reallocate a portion of residual profits earned by multinational enterprises ("MNE"), with an annual global revenue exceeding €20 billion and a profit margin over 10%, to other market jurisdictions. The adoption of Pillar One and its potential effective date remain uncertain. Pillar Two requires MNEs with an annual global revenue exceeding €750 million to pay a global minimum tax of 15%. On December 15, 2022, the Council of the EU formally adopted Directive (EU) 2022/2523 (the "Pillar Two Directive") to achieve a coordinated implementation of Pillar Two in EU Member States consistent with EU law. On October 19, 2023, the Irish Minster of Finance published Irish Finance (No.2) Bill 2023, which includes implementation of the 15% Pillar Two global minimum tax. The bill, subject to amendment during the legislative process, is expected to be signed into law by late December. The Pillar Two legislation is anticipated to be effective for our fiscal year beginning October 1, 2024. We are continuing to evaluate the potential impact on future periods of the Pillar Two Framework, pending legislative adoption by individual countries, as such changes could result in an increase in our effective tax rate.

Future potential changes to the U.S. tax laws could result in us being treated as a U.S. corporation for U.S. federal tax purposes, and the Internal Revenue Service ("IRS") may not agree that we should be treated as a non-U.S. corporation for U.S. federal tax purposes.

Because Johnson Controls International plc is organized under the laws of Ireland, it would generally be classified as a foreign corporation under the general rule that a corporation is considered tax resident in the jurisdiction of its organization or incorporation for U.S. federal income tax purposes. However, Section 7874 of the Code ("Section 7874") provides an exception to this general rule under which a non-U.S. incorporated entity may, in certain circumstances, be treated as a U.S. corporation for U.S. federal tax purposes. The IRS may assert that, as a result of the Merger, Johnson Controls International plc should be treated as a U.S. corporation (and, therefore, a U.S. tax resident) for U.S. federal income tax purposes pursuant to Section 7874 of the Internal Revenue Code. The IRS may also assert that the ability of our U.S. affiliates to utilize U.S. tax attributes, such as net operating losses and certain tax credits, to offset U.S. taxable income resulting from certain transactions may be limited under Section 7874. The application of these rules could result in significant additional U.S. tax liability. In addition, a retroactive change to U.S. tax laws in this area could change the tax classification of Johnson Controls International plc. If it were to be treated as a U.S. corporation for federal tax purposes, we could be subject to substantially greater U.S. tax liability than currently contemplated as a non-U.S. corporation.

Based on the terms of the Merger, we currently expect that Section 7874 does not apply to us or our affiliates as a result of the Merger. However, determining the applicability of Section 7874 is complex and is subject to factual and legal uncertainties. Thus, there can be no assurance that the IRS will agree with the position that Johnson Controls International plc should not be treated as a U.S. corporation for U.S. federal tax purposes or that Section 7874 does not otherwise apply.

Changes to the U.S. model income tax treaty could adversely affect us.

On February 17, 2016, the U.S. Treasury released a revised U.S. model income tax convention (the "new model"), which is the baseline text used by the U.S. Treasury to negotiate tax treaties. If any or all of the modifications to the model treaty are adopted in the main jurisdictions in which we do business, they could, among other things, cause double taxation, increase audit risk and substantially increase our worldwide tax liability. We cannot predict the outcome of any specific modifications to the model treaty, and we cannot provide assurance that any such modifications will not apply to us.

Negative or unexpected tax consequences could adversely affect our results of operations.

Adverse changes in the underlying profitability and financial outlook of our operations in several jurisdictions could lead to additional changes in our valuation allowances against deferred tax assets and other tax reserves on our statement of financial position, and the future sale of certain businesses could potentially result in the reversal of outside basis differences that could adversely affect our results of operations and cash flows. Additionally, changes in tax laws in the U.S., Ireland or in other countries where we have significant operations could materially affect deferred tax assets and liabilities on our consolidated statement of financial position and our income tax provision in our consolidated statement of income.

We are also subject to tax audits by governmental authorities. Negative unexpected results from one or more such tax audits could adversely affect our results of operations.

Risks Relating to Our Jurisdiction of Incorporation

Irish law differs from the laws in effect in the U.S. and may afford less protection to holders of our securities.

It may not be possible to enforce court judgments obtained in the U.S. against us in Ireland based on the civil liability provisions of the U.S. federal or state securities laws. In addition, there is some uncertainty as to whether the courts of Ireland would recognize or enforce judgments of U.S. courts obtained against us or our directors or officers based on the civil liabilities provisions of the U.S. federal or state securities laws or hear actions against us or those persons based on those laws. We have been advised that the U.S. currently does not have a treaty with Ireland providing for the reciprocal recognition and enforcement of judgments in civil and commercial matters. Therefore, a final judgment for the payment of money rendered by any U.S. federal or state court based on civil liability, whether or not based solely on U.S. federal or state securities laws, would not automatically be enforceable in Ireland.

As an Irish company, Johnson Controls is governed by the Irish Companies Acts, which differ in some material respects from laws generally applicable to U.S. corporations and shareholders, including, among others, differences relating to interested director and officer transactions and shareholder lawsuits. Likewise, the duties of directors and officers of an Irish company generally are owed to the company only. Shareholders of Irish companies generally do not have a personal right of action against directors or officers of the company and may exercise such rights of action on behalf of the company only in limited circumstances. Accordingly, holders of Johnson Controls International plc securities may have more difficulty protecting their interests than would holders of securities of a corporation incorporated in a jurisdiction of the U.S.

Transfers of Johnson Controls ordinary shares may be subject to Irish stamp duty.

For the majority of transfers of Johnson Controls ordinary shares, there is no Irish stamp duty. However, Irish stamp duty is payable for certain share transfers. A transfer of Johnson Controls ordinary shares from a seller who holds shares beneficially (i.e., through the Depository Trust Company ("DTC")) to a buyer who holds the acquired shares beneficially is not subject to Irish stamp duty (unless the transfer involves a change in the nominee that is the record holder of the transferred shares). A transfer of Johnson Controls ordinary shares by a seller who holds shares directly (i.e., not through DTC) to any buyer, or by a seller who holds the shares beneficially to a buyer who holds the acquired shares directly, may be subject to Irish stamp duty (currently at the rate of 1% of the price paid or the market value of the shares acquired, if higher) payable by the buyer. A shareholder who directly holds shares may transfer those shares into his or her own broker account to be held through DTC without giving rise to Irish stamp duty provided that the shareholder has confirmed to Johnson Controls transfer agent that there is no change in the ultimate beneficial ownership of the shares as a result of the transfer and, at the time of the transfer, there is no agreement in place for a sale of the shares.

We currently intend to pay, or cause one of our affiliates to pay, stamp duty in connection with share transfers made in the ordinary course of trading by a seller who holds shares directly to a buyer who holds the acquired shares beneficially. In other cases, Johnson Controls may, in its absolute discretion, pay or cause one of its affiliates to pay any stamp duty. Johnson Controls Memorandum and Articles of Association provide that, in the event of any such payment, Johnson Controls (i) may seek reimbursement from the buyer, (ii) may have a lien against the Johnson Controls ordinary shares acquired by such buyer and any dividends paid on such shares and (iii) may set-off the amount of the stamp duty against future dividends on such shares. Parties to a share transfer may assume that any stamp duty arising in respect of a transaction in Johnson Controls ordinary shares has been paid unless one or both of such parties is otherwise notified by Johnson Controls.

Dividends paid by us may be subject to Irish dividend withholding tax.

In certain circumstances, as an Irish tax resident company, we will be required to deduct Irish dividend withholding tax (currently at the rate of 25%) from dividends paid to our shareholders. Shareholders that are residents in the U.S., European Union countries (other than Ireland) or other countries with which Ireland has signed a tax treaty (whether the treaty has been ratified or not) generally should not be subject to Irish withholding tax so long as the shareholder has provided certain Irish dividend withholding tax forms. However, some shareholders may be subject to withholding tax, which could adversely affect the price of our ordinary shares.

Dividends received by investors could be subject to Irish income tax.

Dividends paid in respect of Johnson Controls ordinary shares generally are not subject to Irish income tax where the beneficial owner of these dividends 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 Johnson Controls.

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

General Risk Factors

The potential insolvency or financial distress of third parties could adversely impact our business and results of operations.

We are exposed to the risk that third parties to various arrangements who owe us money or goods and services, or who purchase goods and services from us, will not be able to perform their obligations or continue to place orders due to insolvency or financial distress. If third parties fail to perform their obligations under arrangements with us, we may be forced to replace the underlying commitment at current or above market prices or on other terms that are less favorable to us. In such events, we may incur losses, or our results of operations, financial condition or liquidity could otherwise be adversely affected.

Risks related to our defined benefit retirement plans may adversely impact our results of operations and cash flow.

Significant changes in actual investment return on defined benefit plan assets, discount rates, mortality assumptions and other factors could adversely affect our results of operations and the amounts of contributions we must make to our defined benefit plans in future periods. Because we mark-to-market our defined benefit plan assets and liabilities on an annual basis, large non-cash gains or losses could be recorded in the fourth quarter of each fiscal year or when a remeasurement event occurs. Generally accepted accounting principles in the U.S. require that we calculate income or expense for the plans using actuarial valuations. These valuations reflect assumptions about financial markets and interest rates, which may change based on economic conditions. Funding requirements for our defined benefit plans are dependent upon, among other factors, interest rates, underlying asset returns and the impact of legislative or regulatory changes related to defined benefit funding obligations.

A variety of other factors could adversely affect the results of operations of our business.

Any of the following could materially and adversely impact the results of operations of our business: loss of, changes in, or failure to perform under guaranteed performance contracts with our major customers; cancellation of, or significant delays in, projects in our backlog; delays or difficulties in new product development; our ability to recognize the expected benefits of our restructuring actions, downgrades in the ratings of our debt, material increases to our level of indebtedness, products and services that we are unable to pass on to the market; changes in energy costs or governmental regulations that would decrease the incentive for customers to update or improve their building control systems; and natural or man-made disasters or losses that impact our ability to deliver products and services to our customers.

NON-FINANCIAL STATEMENT

These non-financial information disclosures are included for the purpose of complying with European Union (Disclosure of Non-Financial and Diversity Information by certain large undertakings and groups) Regulations 2017 (as amended) for fiscal 2023.

Our Business Model

As the global leader in smart, healthy and sustainable buildings, our mission is to reimagine the performance of buildings to serve people, places and the planet. Building on a proud history of nearly 140 years of innovation, we deliver the blueprint of the future for industries such as healthcare, schools, data centers, airports, stadiums, manufacturing and beyond through OpenBlue, our comprehensive digital offering. With a global team of nearly 100,000 experts in more than 150 countries, Johnson Controls offers the world`s largest portfolio of building technology and software products as well as service solutions from some of the most trusted names in the industry. See the Principal Activities section of this Directors' Report for further description of our business model.

Our Principal Risks and Uncertainties

A description of our principal risks and uncertainties and their impact on our business, including those related to environmental matters, social and employee matters, anti-bribery, anti-corruption and respect for human rights, if applicable, are set out at the Principal Risks and Uncertainties section of this Directors' Report.

Analysis of Key Performance Indicators

Johnson Controls tracks and analyzes non-financial key performance indicators on an ongoing basis.

The full Board of Directors oversees our overall strategy and enterprise strategic risk through robust and constructive engagement with management, taking into consideration our key priorities, global trends impacting our business, regulatory developments, and disruptors in our businesses. The Governance and Sustainability Committee of our board of directors provides oversight of our environmental, social and governance ("ESG") programs and goals, sustainability management, sustainability risks, sustainability trends and environmental health and safety, receiving regular briefings on our progress. In addition, the Compensation and Talent Development Committee provides oversight of certain social matters impacting our workforce, including human capital management, diversity and inclusion and employee experience.

Our Chief Sustainability and External Relations Officer reports directly to our CEO. The Global ESG Leadership Committee ("ESG LC") is chaired by our Vice President of Global Sustainability & Regulatory Affairs, who reports to the Chief Sustainability & External Relations Officer. Its members consist of senior leaders across our businesses, functions and regions. The ESG LC is charged with leading the enterprise across all measures of sustainability, managing and reporting progress toward our ESG commitments, and responsible for embedding sustainability into our culture and operations across the enterprise.

The key performance indicators that we monitor in relation to our policies include:

- greenhouse gas emissions
- energy consumption
- water withdrawals
- zero landfill sites
- health and safety
- workplace inclusion and diversity
- volunteer hours
- spend with diverse suppliers

Environmental matters

As the threats posed by climate change become increasingly apparent, action from national and subnational governments, including regulations on building products, is driving initiatives to reduce the emissions and increase efficiency of our products. We support the drive to adopt these regulations and standards and seek to capitalize on these trends to drive growth by developing and delivering technologies and solutions to create smart, sustainable and healthy buildings. Throughout our heating, ventilation, air conditioning, and refrigeration ("HVACR") portfolio, a wide array of low-emission products exist today and will continue to expand as we anticipate future regulation. We believe that our business is well positioned to manage the overall impacts of climate change on ourselves and our customers.

Our 2030 science-based emission-reduction targets are approved by the Science-Based Targets initiative, through which we are committed to reducing Scope 1 and 2 by 55 percent and Scope 3 by 16 percent by 2030. We have also set a target to achieve net zero Scope 1 and 2 emissions by 2040, ten years ahead of the goal set out in the United Nations Paris Climate Agreement.

We continue to take steps to further improve environmental impacts across our value chain.

- Our business provides a range of innovative, sustainable technologies and solutions that help our customers mitigate and adapt to climate change through reductions in carbon, energy and water, and the reuse and recycling of materials. Our solutions, such as the OpenBlue digital platform, can help our customers and suppliers achieve their emissions goals, cutting emissions while saving customers significantly in energy and operational costs.

- As the HVAC industry evolves to meet the needs of building decarbonization, our portfolio of residential, commercial, and industrial heat pumps is uniquely positioned to revolutionize the sustainable infrastructure industry. We were named to Fortune's 2023 Change the World List for our innovative and transformative heat pump technology. Heat pumps are recognized as a critical tool for reducing greenhouse gas emissions by the International Energy Agency and national and subnational governments across the globe.

- We are committed to investing at least 75 percent of our new product development research and development in climate-related innovation to develop sustainable products and services. In 2023, we launched the YORK YVWH water-to-water heat pump, which uses the ultra-low GWP refrigerant R1234ze and produces industry-leading hot water temperatures up to 176 degrees Fahrenheit. We also introduced the Hitachi air365 Hybrid dual fuel system, which combines a heat pump and furnace to provide efficient, economical home comfort year-round while reducing carbon emissions.

- We continue to partner with our customers to deliver deep decarbonization and cost savings. We entered into a 20-year energy savings performance contract with NRG Park in Harris County, Texas, providing infrastructure updates that will be funded by energy savings.

- As a leading smart buildings company, we actively engage with leaders around the world to address the nearly 40% of global greenhouse gas emissions buildings represent. Members of our leadership team, including our Chairman and Chief Executive Officer, George Oliver, are dedicated participants in the Conference of the Parties to the United Nations Framework Convention on Climate Change. Our executives take a leading role urging both the public and private sector to take the bolder action that is required for us to solve the climate crisis. Mr. Oliver has been invited to the White House on multiple occasions to discuss the importance of energy sustainability and security with Administration leadership, including our extensive efforts to invest in and significantly expand heat pump production. In addition, Mr. Oliver serves as chair of the Sustainable Buildings Task Force of the Sustainable Markets Initiative and chairs the Energy and Environment Committee of the Business Roundtable, working together with global CEOs to accelerate net zero solutions.

Key performance indicators including progress as of September 30, 2023:

- Scope 1 and 2 emissions:
  - Goal #1: Reduce absolute scope 1 and 2 emissions 55% by 2030 from a 2017 baseline.
  - Progress: 606,000 Metric Tons CO2e, a 43.8% reduction from a 2017 baseline of 1,079,373 Metric Tons CO2e..

  - Goal #2: Reduce scope 1 and 2 emissions intensity 25% by 2025 from a 2017 baseline.
  - Progress: 22.7 Metric Tons CO2e per Million USD in revenue, a 52.4% reduction from a 2017 baseline of 47.6 Metric Tons CO2e per Million USD in revenue. Goal has been exceeded.

- Energy intensity:
  - Goal: Reduce energy intensity 25% by 2025 from a 2017 baseline.
  - Progress: 277 GJ per Million USD in revenue, a 22.5% reduction from a 2017 baseline of 358 GJ per Million USD in revenue.

- Water use:
  - Goal: Reduce water use by 10% at water-stressed locations by 2025 from a 2017 baseline.
  - Progress: 272.46 megaliters, an 18.4% reduction from a 2017 baseline of 334 megaliters. Goal has been exceeded.

- Manufacturing site landfills:
  - Goal: 25% of manufacturing sites landfill free by 2025.
  - Progress: 25% of manufacturing sites are landfill free. Goal has been exceeded.

Our environmental sustainability metrics reporting is consistent with the GHG Protocol Corporate Reporting and Accounting Standard and includes data from Johnson Controls and the Johnson Controls-Hitachi joint venture. Apex, an independent third-party assurance provider recognized by CDP has verified our greenhouse gas emissions data, waste data and water data. Scope for energy and emissions include what is under the company's operational control. Absolute emissions have been rounded to the nearest thousand. Fiscal 2023 intensity metrics are measured as the total energy consumed or total scope 1 and 2 emissions divided by revenue consistent with what is reported in this Annual Report. Scope for water and waste include our manufacturing facilities. Indirect emissions (Scope 2) are market-based. Stationary combustion data is tracked using the Environmental, Health and Safety Information System ("EHSIS") tool.

Social and employee matters

At Johnson Controls, we strive continuously to drive and develop a high-performance culture, represented by practices and behaviors that reflect our values. The CEO, the Chief Human Resources Officer ("CHRO"), the Vice President of Diversity, Equity, & Inclusion and other senior leaders are responsible for the execution of our human resources strategy. The Compensation and Talent Development Committee, the Governance and Sustainability Committee, and the full board of directors have oversight over various social and employee matters, including human capital trends, practices and operations, diversity and inclusion, health and safety, leadership development, and succession planning.

Health and safety

Health and Wellness, Safety, and Environment are the three pillars of our Zero Harm vision. We are committed to a safe and healthy work environment for our employees, our customers and contractors, our visitors, and our communities. Our Global Environmental Health and Safety Policy identifies the key operating principles that define our expectations, actions and behaviors of all Johnson Controls employees in conducting business that is protective of health, safety and the environment. Health and safety programs are designed around global standards addressing multiple jurisdictions and regulations, the specific hazards and unique working environments of our manufacturing, service and install teams, and headquarter operations.

We work together to promote a Zero Harm culture globally in all that we do. We require each of our locations to perform regular environmental, health, and safety compliance audits to ensure proper policies, program procedures, analyses and training are in place. In addition, we engage an independent third-party conformity assessment and certification vendor to audit selected operations for adherence to our global health and safety standards and local environmental health and safety regulations.

Key performance indicators, fiscal 2023 data, based upon the number of incidents per 100 employees and supervised contractors, per 200,000 work hours:

- Goal: By 2025, reduce recordable safety incident rate by 25% from a 2017 baseline:
- Progress: Total Recordable Incident Rate ("TRIR"): 0.37, a 34.6% reduction to date from a 2017 baseline of TRIR of 0.57. Goal has been exceeded.

Employee matters

At Johnson Controls, we support the continued development and advancement of our people. Strategic talent reviews and succession planning occur annually, and we emphasize real-life, real-time learning that enables employees to meet the demands of challenging and changing work. To ensure our people have the skills and capabilities to drive success, we have embedded our enterprise leadership competency model into our talent processes. The model is part of our leadership curriculum and self-directed development guides for employees’ personal development.

We are dedicated to creating a workplace where diversity is celebrated, where every employee feels included and valued, and where equitable practices are the norm. By prioritizing diversity, equity and inclusion, we aim to foster a culture of innovation, collaboration, and respect that drives its success in the global marketplace. Diversity, Equity, and Inclusion ("DEI") is a core component of our strategy to drive a High-Performance Culture, recognized as adding value to our creation and delivery of innovative high performing products and enabling solutions to its customers' toughest problems. We have recently elevated our focus on 'equity' to further enable all employees to have access to the opportunities, resources, support and networks they need to develop and succeed. We empower employees to take an active role in creating a culture that values uniqueness, celebrates creativity and drives innovation.

We encourage employees to enable an inclusive culture through active participation in Business Resource Groups ("BRGs") - employee-led voluntary organizations of people with similar interests, experiences, or demographic characteristics. We continue to increase participation in our BRG chapters worldwide across nine categories: African American, Asia Pacific, LGBTQ+, Emerging Leaders, Hispanic, Disabilities, Veterans, Women, and Sustainability. In 2023, we established BRGs focused on Wellness and Caregiving in response to feedback through its Voice of the Employee events. Each BRG is open to all employees and sponsored and supported by senior leaders across the enterprise. Our BRG structure includes monthly learning series, an active recruitment platform, an innovation hub, community engagement and feedback sessions. We also engage BRGs to support the acquisition and development of diverse talent internally and externally.

Key performance indicators, fiscal 2023 data:

- Goal: Double the representation of women leaders globally and minority leaders in the US within five years,
- Progress to date:
  - 24 percent of leadership positions were held by women
  - 25 percent of leadership positions in the U.S. were held by minorities

Gender data reflects global population. Minority data reflects US population only. Our 2023 Diversity, Equity, and Inclusion Annual Report and our EEO-1 are reported and publicly available.

Community engagement and philanthropic strategy

Johnson Controls seeks to promote the well-being of our communities and our planet with a strategic approach to philanthropy and volunteerism. Our philanthropic reach is focused on those communities where our employees live and work in the countries we call home. Through our employee gift matching program, Johnson Controls employees can request matches for donations they make to eligible organizations that help build smart, healthy, and sustainable communities.

Johnson Controls contributes millions of dollars annually and our employees give freely of their time, skills and energy. We align our volunteering and philanthropy efforts with the UN Sustainable Development Goals.

Key performance indicators, fiscal 2023 data:

- Goal: Volunteer two million hours and align 80 percent of volunteer activities with the United Nations Sustainable Development Goal by the end of 2025.
- Progress to date:
  - 61,521 volunteer hours, the most volunteer hours recorded in one year since 2017
  - 1.92 million accumulated volunteer hours.
  - 82% of our volunteer hours are aligned to the UN Sustainable Development Goals

Supplier diversity

Johnson Controls defines diverse suppliers as companies in the United States that are Minority, Women, LGBTQAI+, Disability, and Veteran-owned businesses that have been certified by the National Minority Supplier Development Council ("NMSDC"), Women's Business Enterprise National Council ("WBENC"), National Veteran's Business Development Council ("NVBDC"), National LGBT Chamber of Commerce ("NGLCC"), and DisabilityIN. Johnson Controls also recognizes certifications from the Canadian Aboriginal and Minority Supplier Council ("CAMSC"), Minority Supplier Development China ("MSDC"), Minority Supplier Development United Kingdom ("MSDCUK"), South African Supplier Diversity Counsel ("SASDC") and WE Connect International. Our diversity business initiative is integrated into our corporate strategy and directed by senior management.

In 2023, we spent approximately $600 million with certified diverse suppliers worldwide. Our initiatives identified diverse suppliers and integrated them into our procurement processes, including category strategies, sourcing board events and supplier development activities.

Anti-bribery, anti-corruption and respect for human rights

Since 2004, Johnson Controls has been committed to the UN Global Compact and its principles of human rights, labor, the environment and anti-corruption. These principles are based on The Universal Declaration of Human Rights; The International Labor Organization's Declaration on Fundamental Principles and Rights at Work; The Rio Declaration on Environment and Development; The United Nations Convention against Corruption; and the United Nations Framework on Business and Human Rights.

As an early signatory of the United Nations Global Compact, Johnson Controls is committed to the United Nations Global Compact's Ten Principles and operates accordingly. Our progress in meeting each of the UN Global Compact's Ten Principles, as well as the 21 criteria required to achieve “Advanced Level” status, is reported publicly on the Global Compact's website.

Our Human Rights and Sustainability Policy and our Code of Ethics define our overall management approach to human rights, anti-corruption, the environment, governance, social and other related matters.

Values First: The Johnson Controls Code of Ethics applies to everyone at Johnson Controls – including the board of directors, company officers, employees, agents, and contract workers. The Code of Ethics is translated into 32 languages and provides specific guidance on the behaviors that allow us to implement our culture globally. Compliance with our Code of Ethics and our anti-corruption policy is a condition of employment.

All online employees must complete online training modules and biennially review and attest to the Code of Ethics.

In addition to Code of Ethics training, our global compliance training program has two pillars - Vital Values and Values in Action. Vital Values are online courses on topics such as anti-corruption, conflicts of interest, fair competition, and privacy, which are assigned to employees who work in functions at elevated risk. Values in Action are scenario-based ethics discussions conducted twice a year by all managers in the company with their respective teams. In fiscal year 2023, we achieved 96 percent completion across these trainings.

Johnson Controls requires the management of each facility to ensure they implement equal opportunity and no-harassment policies in accordance with national, state or provincial law. Employees, temporary employees, visitors and other non-employees are encouraged to immediately report harassment or any ethics or compliance violations committed by anyone, including our visitors.

Our slavery and human trafficking policy complies with the UK Modern Slavery Act of 2015 and our slavery and human trafficking statement is reviewed annually. We are committed to taking steps to ensure that slavery and human trafficking do not take place in any part of our business or supply chain.

Our political contributions policy guides our contributions and activities to ensure compliance with applicable federal and state laws and go beyond compliance to implement leading practices in accountability and transparency.

We participate in the public policy process in various ways including corporate government affairs activities designed to educate policymakers on key issues related to our business, political giving through the Johnson Controls Political Action Committee ("PAC") and limited direct corporate political contributions. To promote transparency, we make this information publicly available on our website and through various government filings, as required by law.

Our PAC is governed by a steering committee, which is chaired by the Company's Executive Vice President & General Counsel and made up of business and functional leaders across the Company. The committee provides operational oversight and direction of PAC activities. The committee also reviews candidate recommendations and uses the PAC's selection criteria to determine who will receive financial support.

Our Executive Vice President & General Counsel, Chief Sustainability & External Relations Officer, and Chief Ethics & Compliance Officer meet regularly with the Chief Executive Officer and the senior leadership team to review legislative, regulatory and political developments.

The Governance and Sustainability Committee provides primary board-level oversight in reviewing our corporate political activity and public policy efforts. Our Chief Sustainability & External Relations Officer reports to the Governance and Sustainability Committee on our governmental outreach, PAC and other political activities on a quarterly basis and the full Board is briefed on government relations matters at least annually.

Our Code of Ethics is communicated to our employees, suppliers, partners and contract workers. It encourages individuals to report any wrongdoing that extends to human rights violations, such as slavery and human trafficking. All reports are fully investigated and appropriate remedial actions taken when warranted.

Our Integrity Helpline is available for individuals inside and outside of the company to raise concerns or report any alleged wrongdoing.

We have implemented a supplier sustainability program with EcoVadis, a globally recognized supplier across environment, labor, and human rights, ethics, and sustainable procurement. The EcoVadis rating is included on our supplier scorecards and is equal to cost, quality, and delivery in supplier performance evaluations.

We are proud to have received a Platinum Rating from EcoVadis, joining the top 1% of more than 100,000 companies they assess across environment, labor, human rights, ethics and sustainable procurement.

Outcome of the Policies Pursued

Johnson Controls is a recognized leader in environmental matters, social and employee matters and respect for human rights. Outcomes of our policies are reflected in the other sections of this Non-Financial Statement. Additional outcomes of our policies are tracked in detail in the Annual Sustainability Report. We are honored to be recognized for our ongoing innovation and leadership across environment, social and governance in 2023:

- Fortune's 2023 Change the World List
- TIME's World's Best Companies 2023 List
- EcoVadis Platinum, top 1% of more than 100,000 companies assessed
- World's Most Ethical Companies by Ethisphere for the 16th time
- Leadership rating in CDP Climate Change, A-
- Clean200 for the 8th consecutive year, the top 200 companies leading the transition to a sustainable global economy
- Forbes Best Employers for Women 2023
- Newsweek's America's Greatest Workplaces for Diversity 2023

Disclaimer: The information in the this Non-Financial Statement is shared based on the best available data at publication. In some cases, data is unaudited and/or estimated. In addition, the data on environmental, social and governance matters presented herein is not presented in accordance with GAAP, and is subject to varying degrees of assurance, limited assurance, or, in some cases, not subject to external third-party verification or has not yet received such verification at the time of publication. The Group cautions that our statements with respect to current and future potential implications of corporate social responsibility and sustainability topics are subject to numerous important risks, uncertainties, assumptions and other factors, some of which are beyond our control, which could cause our actual results and business implications to differ materially from those expressed or implied by the information in this report. The non-financial statements have been prepared in United States dollars (“USD”).

While we believe that our assumptions, expectations, commitments, and projections are reasonable in view of the currently available information, users of this information are cautioned not to place undue dependence on forward-looking statements. They are subject to future events, risks, and uncertainties—many of which are beyond our control—as well as potentially inaccurate assumptions that could cause actual results to differ materially from expectations, projections and commitments. Users of this information are advised to review the factors described under the caption “Principal Risks and Uncertainties” in this Annual Report and any further disclosures the Group makes on related subjects in materials it files with or furnishes to the Securities and Exchange Commission. The forward-looking statements included in this report are made only as of the date of this report, unless otherwise specified, and, except as required by law, we assume no obligation, and disclaims any obligation, to update such statements to reflect events or circumstances occurring after the date of this report.

BUSINESS REVIEW

Macroeconomic Trends

Much of the demand for the Group’s products and solutions is driven by construction, facility expansion, retrofit and maintenance projects within the commercial, institutional, industrial, data center, governmental and residential sectors. Construction projects are heavily dependent on general economic conditions, localized demand for real estate and the availability of credit, public funding or other financing sources. Positive or negative fluctuations in construction, industrial facility expansion, retrofit activity, maintenance projects and other capital investments in buildings within the sectors that the Group serves, as well as availability of credit, financing or funding for such projects, could have a corresponding impact on the Group’s financial condition, results of operations and cash flows. The economic conditions in China, specifically challenges in real estate, began negatively impacting the Building Solutions Asia Pacific segment in the fourth quarter of fiscal 2023. The Group expects continued softening in China in fiscal 2024.

As a result of the Group’s global presence, a significant portion of its revenues and expenses is denominated in currencies other than the U.S. dollar. The Group is therefore subject to non-U.S. currency risks and non-U.S. exchange exposure. While the Group employs financial instruments to hedge some of its transactional foreign exchange exposure, these activities do not insulate it completely from those exposures. In addition, the currency exposure from the translation of non-U.S. dollar functional currency subsidiaries are not able to be hedged. Exchange rates can be volatile and a substantial weakening or strengthening of foreign currencies against the U.S. dollar could increase or reduce the Group's profit margin, respectively, and impact the comparability of results from period to period. During fiscal 2023, revenue and profits were adversely impacted due to the strengthening of the U.S. dollar against foreign currencies.

The Group continues to observe trends demonstrating increased interest and demand for its products and services that enable smart, safe, efficient and sustainable buildings. This demand is driven in part by government tax incentives, building performance standards and other regulations designed to limit emissions and combat climate change. In particular, legislative and regulatory initiatives such as the U.S. Climate Smart Buildings Initiative, U.S. Inflation Reduction Act and EU Energy Performance of Buildings Directive include provisions designed to fund and encourage investment in decarbonization and digital technologies for buildings. This demand is supplemented by an increase in commitments in both the public and private sectors to reduce emissions and/or achieve net zero emissions. The Group seeks to capitalize on these trends to drive growth by developing and delivering technologies and solutions to create smart, sustainable and healthy buildings. The Group is investing in new digital and product capabilities, including its OpenBlue platform, to enable it to deliver sustainable, high-efficiency products and tailored services to enable customers to achieve their sustainability goals. The Group is leveraging its install base, together with data-driven products and services to offer outcome-based solutions to customers with a focus on generating accelerated growth in services and recurring revenue.

The Group has experienced, and could continue to experience, increased material cost inflation and component shortages, as well as disruptions and delays in its supply chain, as a result of global macroeconomic trends, including increased global demand, geopolitical and economic tensions, including the conflicts between Russia and Ukraine and Israel and Hamas, and labor shortages. Actions taken by the Group to mitigate supply chain disruptions and inflation, including expanding and redistributing its supplier network, supplier financing, price increases and productivity improvements, have generally been successful in offsetting some, but not all, of the impact of these trends. The collective impact of these trends has been favorable to revenue due to increased demand and price increases to offset inflation, while negatively impacting margins due to supply chain disruptions and cost pressures. However, during fiscal 2023, the Group observed improved margins as supply chain disruptions eased and higher priced backlog was converted to sales. Although the Group has experienced recent improvement, it could experience further disruptions, shortages and cost increases could occur in the future, the effect of which will depend on the Group's ability to successfully mitigate and offset the impact of these events.

The extent to which the Group's results of operations and financial condition are impacted by these and other factors in the future will depend on developments that are highly uncertain and cannot be predicted. See Principal Risks and Uncertainties for an additional discussion of risks.

Cybersecurity Incident

During the weekend of September 23, 2023, the Group experienced a cybersecurity incident impacting its internal information technology ("IT") infrastructure and applications. The incident was detected shortly after receiving reports of outages to certain of the Group's systems. Promptly after detecting the issue, the Group implemented its incident management and response plan and business continuity plans, including implementing remediation measures to mitigate the impact of the incident and restore affected systems and functions. The Group also engaged leading cybersecurity experts and other specialized consultants to assist in its investigation and remediation of the incident, as well as the restoration of impacted applications and systems. The Group's investigation and remediation efforts remain ongoing, including the analysis of data accessed, exfiltrated or otherwise impacted during the cybersecurity incident. Based on the information reviewed to date, the Group believes the unauthorized activity has been contained and has not observed evidence of any impact to its digital products, services and solutions, including OpenBlue and Metasys.

The cybersecurity incident consisted of unauthorized access, data exfiltration and deployment of ransomware by a third party to a portion of the Group's internal IT infrastructure. The incident caused disruptions and limitation of access to portions of the Group's business applications supporting aspects of the Group's operations and corporate functions, which disruptions and limitations continued into the early portion of the first quarter of fiscal 2024. To date, the Group has largely restored the impacted applications and systems.

Lost and deferred revenues and expenses related to the cybersecurity incident adversely impacted fiscal 2023 net income by approximately $30 million, or approximately $0.04 per diluted share. This was primarily attributable to order processing and logistics disruptions and delays, and expenses associated with the response to, and remediation of, the incident.

The Group has incurred and expects to incur additional expenses associated with the response to, and remediation of, the incident in fiscal 2024, most of which the Group expects to incur in the first half of the year. These expenses include third-party expenditures, including IT recovery and forensic experts and others performing professional services to investigate and remediate the incident, as well as incremental operating expenses incurred from the resulting disruption to the Group's business operations. Further, the cybersecurity incident caused disruptions to certain of the Group's billing systems, which is expected to negatively impact cash provided from continuing operations during the first quarter of fiscal 2024. The overall impact of the cybersecurity incident in fiscal 2024 is not expected to be material to net income, net of insurance recoveries, or cash flows from continuing operations; however, the timing of recognizing the insurance recoveries may differ from the timing of recognizing the associated expenses.

The Group maintains insurance covering certain losses associated with cybersecurity incidents. The Group did not recognize any insurance recoveries related to the cybersecurity incident in the three months ended September 30, 2023. The Group currently expects that a substantial portion of its direct costs incurred related to containing, investigating and remediating the incident, as well as business interruption losses, will be reimbursed through insurance recoveries.

Restructuring and Cost Optimization Initiatives

To better align its resources with its growth strategies and reduce the cost structure of its global operations in certain underlying markets, the Group commits to restructuring plans as necessary. In the third quarter of fiscal 2023, the Group began developing a restructuring plan with certain actions focused on continued scaling of Selling, general and administrative expenses ("SG&A") to its planned growth. The scope of the plan was substantially finalized in the fourth quarter of fiscal 2023 and certain actions related to this plan were committed and executed during the fourth quarter, primarily related to workforce reductions, and were recorded to restructuring and impairment costs in the consolidated statement of income. Additional restructuring charges are expected in subsequent quarters. The Group expects savings from the restructuring initiatives to be substantially offset by incremental ongoing operating costs and investments to grow the business. Restructuring charges incurred during the first and second quarters of fiscal 2023 were the result of other segment and Corporate-level restructuring plans.

Net Sales

	Year Ended September 30,		
(in millions)	2023	2022	Change
Net sales	$ 26,793	$ 25,299	6%

The increase in net sales was due to higher organic sales ($1,997 million) and the favorable net impact of acquisitions and divestitures ($113 million), partially offset by the unfavorable impact of foreign currency translation ($616 million). Excluding the impact of foreign currency translation and business acquisitions and divestitures, consolidated net sales increased 8% over the prior year, attributable to increased pricing in response to inflation pressures. Refer to the "Segment Analysis" below for a discussion of net sales by segment.

Cost of Sales / Gross Profit

	Year Ended September 30,		
(in millions)	2023	2022	Change
Cost of sales	$ 17,822	$ 16,956	5%
Gross profit	8,971	8,343	8%
% of sales	33.5%	33.0%	

Cost of sales and gross profit both increased and gross profit as a percentage of sales increased by 50 basis points. Gross profit increased due to organic sales growth and favorable price/cost, partially offset by the unfavorable impact of foreign currency translation ($192 million) and the unfavorable year-over-year impact of net pension mark-to-market adjustments ($42 million). Gross profit as a percentage of sales increased primarily due to favorable price/cost. Refer to the "Segment Analysis" below for a discussion of segment earnings before interest, taxes and amortization ("EBITA").

Selling, General and Administrative Expenses

	Year Ended September 30,		
(in millions)	2023	2022	Change
Selling, general and administrative expenses	$ 6,181	$ 5,945	4%
% of sales	23.1%	23.5%	

Selling, general and administrative expenses ("SG&A") increased by $236 million, and SG&A as a percentage of sales improved by 40 basis points. The increase in SG&A was primarily due to certain investments to support growth, one-time transaction and separation costs, the unfavorable year-over-year impact of net mark-to-market adjustments ($84 million) and a loss associated with a fire at a leased warehouse facility ($40 million), partially offset by non-recurring environmental remediation charges in the prior year ($255 million) and favorable foreign currency translation ($118 million). Refer to the "Segment Analysis" below for a discussion of segment EBITA.

Restructuring and Impairment Costs

	Year Ended September 30,		
(in millions)	2023	2022	Change
Restructuring and impairment costs	$ 1,064	$ 721	48%

Restructuring and impairment costs in fiscal 2023 includes $498 million of impairment charges related to businesses classified or previously classified as held for sale, $276 million in severance and other charges resulting from restructuring initiatives, $184 million of goodwill impairment charges related to the Silent-Aire reporting unit, and $106 million of impairment charges for various long-lived assets.

Restructuring and impairment costs in fiscal 2022 includes $359 million of impairment charges related to the North America and Global Retail business which was previously held for sale, $182 million in severance and other charges resulting from restructure initiatives, $105 million of impairments for a business and assets previously held for sale, and $75 million of goodwill impairment charges related to the Silent-Aire reporting unit.

Refer to "Note 3, "Assets and Liabilities Held for Sale & Discontinued Operations," Note 7, "Property, Plant and Equipment," Note 8, "Goodwill and Other Intangible Assets," and Note 17, "Restructuring and Related Costs," of the notes to consolidated financial statements for further disclosure related to the Group's restructuring plans and impairment costs.

Net Financing Charges

	Year Ended September 30,		
	2023	2022	Change
Interest expense, net of capitalized interest costs	$ 307	$ 225	36%
Other financing charges	52	27	93%
Gain on debt extinguishment	(25)	—	*
Interest income	(18)	(6)	*
Net foreign exchange results for financing activities	(35)	(33)	6%
Net financing charges	$ 281	$ 213	32%

* Measure not meaningful

Refer to Note 10, "Debt and Financing Arrangements," of the notes to consolidated financial statements for further disclosure related to the Group's debt.

Equity Income

(in millions)	Year Ended September 30, 2023	2022	Change
Equity income	$ 265	$ 246	8%

The increase in equity income was primarily due to higher income at certain partially-owned affiliates of the Johnson Controls - Hitachi joint venture. Refer to the "Segment Analysis" below for a discussion of segment EBITA.

Income Tax Provision

(in millions)	Year Ended September 30, 2023	2022	Change
Income tax (benefit)	$ (323)	$ (13)	*
Effective tax rate	(19)%	(1)%	

* Measure not meaningful

The statutory tax rate in Ireland of 12.5% is being used as a comparison since the Group is domiciled in Ireland.

For fiscal 2023, the effective tax rate for continuing operations was (19)% and was lower than the statutory tax rate primarily due to the favorable tax impacts of intellectual property tax adjustments, tax reserve adjustments as the result of tax audit resolutions and remeasurements, valuation allowance adjustments and the benefits of continuing global tax planning initiatives, partially offset by the unfavorable impact of impairment and restructuring charges.

For fiscal 2022, the effective tax rate for continuing operations was (1)% and was lower than the statutory tax rate primarily due to favorable impact of tax reserve adjustments as the result of expired statute of limitations for certain tax years and the benefits of continuing global tax planning initiatives, partially offset by the unfavorable impact of impairment and restructuring charges, valuation allowance adjustments, and the establishment of a deferred tax liability on the outside basis difference of the Group's investment in certain subsidiaries as a result of the planned divestitures and tax rate differentials.

The fiscal 2023 effective tax rate was lower than fiscal 2022 primarily due to tax reserve adjustments as the result of tax audit resolutions, valuation allowance adjustments and the benefits of continuing global tax planning initiatives, partially offset by the impact of impairment and restructuring charges. Refer to Note 18, "Income Taxes," of the notes to consolidated financial statements for further details.

The U.S. enacted the Inflation Reduction Act of 2022 (“IRA”) in August 2022, which, among other sections, creates a new book minimum tax of at least 15% of consolidated GAAP pre-tax income for corporations with average book income in excess of $1 billion. The book minimum tax will first apply to the Group in fiscal 2024. The Group does not expect the IRA to have a material impact on its effective tax rate, however, it is possible that the U.S. Congress could advance other tax legislation proposals in the future that could have a material impact on the Group's tax rate. In addition, in October 2021, the Organization for Economic Co-operation and Development ("OECD")/G20 inclusive framework on Base Erosion and Profit Shifting (the Inclusive Framework) published a statement updating and finalizing the key components of a two-pillar plan on global tax reform which has now been agreed upon by the majority of OECD members. Pillar One allows countries to reallocate a portion of residual profits earned by multinational enterprises ("MNE"), with an annual global revenue exceeding €20 billion and a profit margin over 10%, to other market jurisdictions. The adoption of Pillar One and its potential effective date remain uncertain. Pillar Two requires MNEs with an annual global revenue exceeding €750 million to pay a global minimum tax of 15%. On December 15, 2022, the Council of the EU formally adopted Directive (EU) 2022/2523 (the “Pillar Two Directive”) to achieve a coordinated implementation of Pillar Two in EU Member States consistent with EU law. On October 19, 2023, the Irish Minster of Finance published Irish Finance (No.2) Bill 2023, which includes implementation of the 15% Pillar Two global minimum tax. The bill, subject to amendment during the legislative process, is expected to be signed into law by late December. The Pillar Two legislation is anticipated to be effective for the Group with the fiscal year beginning October 1, 2024. The Group is continuing to evaluate the potential impact on future periods of the Pillar Two Framework, pending legislative adoption by individual countries, as such changes could result in an increase in its effective tax rate.

Income Attributable to Noncontrolling Interests

	Year Ended September 30,		
(in millions)	2023	2022	Change
Income attributable to noncontrolling interests	$ 184	$ 191	-4%

The decrease in income attributable to noncontrolling interests was primarily due to lower net income at certain partially-owned affiliates within the Global Products segment.

Net Income Attributable to Johnson Controls

	Year Ended September 30,		
(in millions)	2023	2022	Change
Net income attributable to Johnson Controls	$ 1,849	$ 1,532	21%

The increase in net income attributable to Johnson Controls was primarily due to higher gross profit and higher income tax benefits, partially offset by higher restructuring and impairment costs and higher SG&A. Diluted earnings per share attributable to Johnson Controls was $2.69 for the year ended September 30, 2023 compared to $2.19 for the year ended September 30, 2022.

Comprehensive Income Attributable to Johnson Controls

	Year Ended September 30,		
(in millions)	2023	2022	Change
Comprehensive income attributable to Johnson Controls	$ 1,805	$ 1,055	71%

The increase in comprehensive income attributable to Johnson Controls was due to an increase in other comprehensive income attributable to Johnson Controls ($433 million) resulting primarily from reductions in foreign currency translation expense and an increase in net income attributable to Johnson Controls ($317 million).

Segment Analysis

Management evaluates the performance of its business units based primarily on segment EBITA, which represents income from continuing operations before income taxes and noncontrolling interests, excluding general corporate expenses, intangible asset amortization, net financing charges, restructuring and impairment costs, and net mark-to-market adjustments related to pension and postretirement plans and restricted asbestos investments.

	Net Sales for the Year Ended September 30,			Segment EBITA for the Year Ended September 30,		
(in millions)	2023	2022	Change	2023	2022	Change
Building Solutions North America	$ 10,330	$ 9,367	10%	$ 1,394	$ 1,122	24%
Building Solutions EMEA/LA	4,096	3,845	7%	316	358	-12%
Building Solutions Asia Pacific	2,746	2,714	1%	343	332	3%
Global Products	9,621	9,373	3%	1,965	1,594	23%
	$ 26,793	$ 25,299	6%	$ 4,018	$ 3,406	18%

Net Sales

- The increase in Building Solutions North America was due to organic growth, including higher prices ($979 million) and incremental sales related to business acquisitions ($29 million), partially offset by the unfavorable impact of foreign currency translation ($45 million). Excluding the impacts of business acquisitions and foreign currency translation, sales growth was led by growth in HVAC & Controls and Fire & Security.

- The increase in Building Solutions EMEA/LA was due to organic growth, including higher prices ($324 million) and the net impact of business acquisitions and divestitures ($29 million), partially offset by the unfavorable impact of foreign currency translation ($102 million). Excluding the impacts of foreign currency translation and business acquisitions and divestitures, sales growth was led by growth in Fire & Security and HVAC & Controls.

- The increase in Building Solutions Asia Pacific was due to organic growth, including higher prices ($182 million) and the net impact of business acquisitions and divestitures ($19 million), partially offset by the unfavorable impact of foreign currency translation ($169 million). The economic conditions in China, specifically challenges in real estate, began negatively impacting the Building Solutions Asia Pacific segment in the fourth quarter of fiscal 2023, but had an insignificant impact on results for the full year. Excluding the impacts of foreign currency translation and business acquisitions and divestitures, sales growth was led by continued demand for HVAC & Controls.

- The increase in Global Products was due to the net impact of higher prices and lower volumes ($512 million) and incremental sales related to business acquisitions ($36 million), partially offset by the unfavorable impact of foreign currency translation ($300 million). Excluding the impacts of foreign currency translation and business acquisitions, sales growth was driven by strong price realization and growth in Commercial HVAC and Industrial Refrigeration products.

Segment EBITA

- The increase in Building Solutions North America was primarily due to favorable price/cost, volume leverage and productivity savings, partially offset by unfavorable project mix.

- The decrease in Building Solutions EMEA/LA reflects the unfavorable impact of foreign currency translation ($13 million) and higher expenses, partially offset by favorable price/cost.

- The increase in Building Solutions Asia Pacific was primarily due to favorable price/cost and productivity savings, partially offset by the unfavorable impact of foreign currency translation ($25 million).

- The increase in Global Products was primarily due to favorable price/cost and productivity savings, partially offset by unfavorable mix, lower gross margin due to lower manufacturing absorption, an uninsured loss associated with a fire at a leased warehouse facility and the unfavorable impact of foreign currency translation ($42 million).

Liquidity and Capital Resources

Working Capital

(in millions)	September 30, 2023	September 30, 2022	Change
Current assets	$ 10,737	$ 11,685	
Current liabilities	(11,084)	(11,239)	
	(347)	446	*
Less: Cash and cash equivalents	(835)	(2,031)	
Add: Short-term debt	385	669	
Add: Current portion of long-term debt	645	865	
Working capital (as defined)	$ (152)	$ (51)	*
Accounts receivable - net	$ 6,006	$ 5,727	5%
Inventories	2,776	2,665	4%
Accounts payable	4,268	4,368	-2%

* Measure not meaningful

- The Group defines working capital as current assets less current liabilities, excluding cash and cash equivalents, short-term debt, the current portion of long-term debt, and current assets and liabilities held for sale (when applicable).

Management believes that this measure of working capital, which excludes financing-related items and businesses to be divested, provides a more useful measurement of the Group’s operating performance.

- The decrease in working capital at September 30, 2023 as compared to September 30, 2022, was primarily due to an increase in deferred revenue and lower income tax assets, partially offset by an increase in accounts receivable due to increased sales and timing of collections.

- Days sales in accounts receivable were 50 at September 30, 2023, comparable to 51 at September 30, 2022. There has been no significant adverse change in the level of overdue receivables or significant changes in revenue recognition methods.

- The Group’s inventory turns for the year ended September 30, 2023 were slightly lower than the comparable period ended September 30, 2022.

- Days in accounts payable were 84 days at September 30, 2023, down slightly from 88 days at September 30, 2022. The decrease was primarily due to timing of payments.

Cash Flows From Continuing Operations

	Year Ended September 30,	
(in millions)	2023	2022
Cash provided by operating activities	$ 2,221	$ 1,990
Cash used by investing activities	(1,184)	(693)
Cash used by financing activities	(2,174)	(516)

- The increase in cash provided by operating activities reflects higher net income and the favorable impact of inventory, income tax and accounts receivable activity, which was partially offset by the timing of accounts payable and accrued liabilities payments.

- The increase in cash used by investing activities was primarily due to the FM:Systems acquisition. Refer to Note 2, "Acquisitions and Divestitures," of the notes to the consolidated financial statements for further disclosure related to the FM:Systems and other acquisitions.

- The decrease in cash provided by financing activities was primarily due to changes in short- and long-term borrowing activity. The net impact of debt proceeds and repayments used cash of $433 million in fiscal 2023 and generated cash of $2.0 billion in fiscal 2022. This increase in cash used was partially offset by lower stock repurchases.

Capitalization

	September 30,		
(in millions)	2023	2022	Change
Short-term debt	$ 385	$ 669	
Current portion of long-term debt	645	865	
Long-term debt	7,818	7,426	
Total debt	8,848	8,960	-1%
Less: Cash and cash equivalents	835	2,031	
Total net debt	8,013	6,929	16%
Shareholders’ equity attributable to Johnson Controls	16,545	16,268	2%
Total capitalization	$ 24,558	$ 23,197	6%
Total net debt as a % of total capitalization	32.6%	29.9%	

- Net debt and net debt as a percentage of total capitalization are non-GAAP financial measures. The Group believes the percentage of total net debt to total capitalization is useful to understanding the Group’s financial condition as it provides a view of the extent to which the Group relies on external debt financing for its funding and is a measure of risk to its shareholders.

- The Group's material cash requirements primarily consist of working capital requirements, repayments of long-term debt and related interest, operating leases, dividends, capital expenditures, potential acquisitions and share repurchases.

- Refer to Note 10, "Debt and Financing Arrangements," of the notes to consolidated financial statements for additional information on debt obligations and maturities. Interest payable on long-term debt is $283 million in the twelve months following September 30, 2023 and $3.6 billion thereafter.

- Refer to Note 9, "Leases," of the notes to consolidated financial statements for additional information on lease obligations and maturities.

- As of September 30, 2023, purchase obligations are $1.8 billion payable in the next twelve months and $240 million payable thereafter. These purchase obligations represent commitments under enforceable and legally binding agreements, and do not represent all future expected purchases.

- As of September 30, 2023, the Group expects to contribute $26 million and $203 million to the global pension and postretirement plans in the next twelve months and thereafter, respectively.
- As of September 30, 2023, approximately $3.0 billion remains available under the Group's share repurchase authorization, which does not have an expiration date and may be amended or terminated by the Board of Directors at any time without prior notice. The Group expects to repurchase outstanding shares from time to time depending on market conditions, alternate uses of capital, liquidity and economic environment.

- The Group declared dividends of $1.45 per share in fiscal 2023 and intends to continue paying quarterly dividends in fiscal 2024.

- The Group believes its capital resources and liquidity position, including cash and cash equivalents of $835 million at September 30, 2023, are adequate to fund operations and meet its obligations for the foreseeable future. The Group expects requirements for working capital, capital expenditures, dividends, minimum pension contributions, debt maturities and any potential acquisitions or stock repurchases in fiscal 2024 will be funded from operations, supplemented by short- and long-term borrowings, if required.

  – The Group manages its short-term debt position in the U.S. and euro commercial paper markets and bank loan markets. Commercial paper outstanding was $200 million as of September 30, 2023 and $172 million as of September 30, 2022.

  – The Group maintains a shelf registration statement with the SEC under which it may issue additional debt securities, ordinary shares, preferred shares, depository shares, warrants purchase contracts and units that may be offered in one or more offerings on terms to be determined at the time of the offering. The Group anticipates that the proceeds of any offering would be used for general corporate purposes, including repayment of indebtedness, acquisitions, additions to working capital, repurchases of ordinary shares, dividends, capital expenditures and investments in the Group's subsidiaries.

  – The Group has the ability to draw on its syndicated $2.5 billion committed revolving credit facility, which was scheduled to expire in December 2024, and a syndicated $500 million committed revolving credit facility, which expired in November 2023. Both credit facilities were renewed on December 11, 2023. The $2.5 billion facility is now scheduled to expire in December 2028 and the $500 million facility is now scheduled to expire in December 2024. There were no draws on the facilities as of September 30, 2023.

- The Group's ability to access the global capital markets and the related cost of financing is dependent upon, among other factors, the Group's credit ratings. As of September 30, 2023, the Group's credit ratings and outlook were as follows:

Rating Agency	Short-Term Rating	Long-Term Rating	Outlook
S&P	A-2	BBB+	Stable
Moody's	P-2	Baa2	Positive

The security ratings set forth above are issued by unaffiliated third party rating agencies and are not a recommendation to buy, sell or hold securities. The ratings may be subject to revision or withdrawal by the assigning rating organization at any time.

- The Group entered into the following debt transactions in fiscal 2023:

  – Repaid $1.6 billion of debt including the following:
    - €200 million term loan with an interest rate of EURIBOR plus 0.5%
    - $32 million Senior Notes due 2023 with an interest rate of 4.625%
    - €150 million term loan with an interest rate of 0.0%
    - €135 million term loan with an interest rate of EURIBOR plus 0.5%
    - €846 million Senior Notes due 2023 with an interest rate of 1.0%
    - Tendered $105 million of its Notes due 2045 with an interest rate of 5.125%

  – Issued $1.2 billion of debt including the following:
    - €150 million term loan with an interest rate of EURIBOR plus 0.7% which is due in April 2024
    - €150 million term loan with an interest rate of EURIBOR plus 0.4% which is due March 2024
    - Together with its wholly owned subsidiary, Tyco Fire & Security Finance S.C.A., co-issued €800 million in 4.25% Senior Notes due May 2035

- Financial covenants in the Group's revolving credit facilities require a minimum consolidated shareholders' equity attributable to Johnson Controls of at least $3.5 billion at all times. The revolving credit facility also limits the amount of debt secured by liens that may be incurred to a maximum aggregated amount of 10% of consolidated shareholders' equity attributable to Johnson Controls for liens and pledges. For purposes of calculating these covenants, consolidated shareholders' equity attributable to Johnson Controls is calculated without giving effect to (i) the application of ASC 715-60, "Defined Benefit Plans - Other Postretirement," or (ii) the cumulative foreign currency translation adjustment. As of September 30, 2023, the Group was in compliance with all financial covenants set forth in its credit agreements and the indentures governing its outstanding notes, and expects to remain in compliance for the foreseeable future. None of the Group's debt agreements limit access to stated borrowing levels or require accelerated repayment in the event of a decrease in the Group's credit rating.

- The Group earns a significant amount of its income outside of the parent company. Outside basis differences in these subsidiaries are deemed to be permanently reinvested except in limited circumstances. The Group currently does not intend nor foresee a need to repatriate undistributed earnings included in the outside basis differences other than in tax efficient manners. The Group's intent is to reduce basis differences only when it would be tax efficient. The Group expects existing U.S. cash and liquidity to continue to be sufficient to fund the Group's U.S. operating activities and cash commitments for investing and financing activities for at least the next twelve months and thereafter for the foreseeable future. In the U.S., should the Group require more capital than is generated by its operations, the Group could elect to raise capital in the U.S. through debt or equity issuances. The Group has borrowed funds in the U.S. and continues to have the ability to borrow funds in the U.S. at reasonable interest rates. In addition, the Group expects existing non-U.S. cash, cash equivalents, short-term investments and cash flows from operations to continue to be sufficient to fund the Group's non-U.S. operating activities and cash commitments for investing activities, such as material capital expenditures, for at least the next twelve months and thereafter for the foreseeable future. Should the Group require more capital at the Luxembourg and Ireland holding and financing entities, other than amounts that can be provided in tax efficient methods, the Group could also elect to raise capital through debt or equity issuances. These alternatives could result in increased interest expense or other dilution of the Group's earnings.

- The Group may from time to time purchase its outstanding debt through open market purchases, privately negotiated transactions or otherwise. Purchases or retirement of debt, if any, will depend on prevailing market conditions, liquidity requirements, contractual restrictions and other factors. The amounts involved may be material.

FINANCIAL RISK MANAGEMENT

The Group selectively uses derivative instruments to reduce market risk associated with changes in foreign currency, commodities, and interest rates. All hedging transactions are authorized and executed pursuant to clearly defined policies and procedures, which strictly prohibit the use of financial instruments for speculative purposes. At the inception of the hedge, the Group assesses the effectiveness of the hedge instrument and designates the hedge instrument as a hedge of one of the following:

- Forecasted transaction or of the variability of cash flows to be received or paid related to an unrecognized asset or liability (a cash flow hedge)
- Net investment in a non-U.S. operation (a net investment hedge)

The Group performs hedge effectiveness testing on an ongoing basis depending on the type of hedging instrument used. All derivatives not designated as hedging instruments under ASC 815, "Derivatives and Hedging," are revalued in the consolidated statement of income.

For all foreign currency derivative instruments designated as cash flow hedges, retrospective effectiveness is tested on a monthly basis using a cumulative dollar offset test. The fair value of the hedged exposures and the fair value of the hedge instruments are revalued, and the ratio of the cumulative sum of the periodic changes in the value of the hedge instruments to the cumulative sum of the periodic changes in the value of the hedge is calculated. The hedge is deemed as highly effective if the ratio is between 80% and 125%. For commodity derivative contracts designated as cash flow hedges, effectiveness is tested using a regression calculation. Ineffectiveness is minimal as the Group aligns most of the critical terms of its derivatives with the supply contracts.
For net investment hedges, the Group assesses its net investment positions in the non-U.S. operations and compares it with the outstanding net investment hedges on a quarterly basis. The hedge is deemed effective if the aggregate outstanding principal of the hedge instruments designated as the net investment hedge in a non-U.S. operation does not exceed the Group's net investment positions in the respective non-U.S. operation.

Derivative instruments not designated as hedging instruments under ASC 815 require no assessment of effectiveness.

A discussion of the Group's accounting policies for derivative financial instruments is included in Note 1, "Basis of Presentation and Summary of Significant Accounting Policies," of the notes to consolidated financial statements, and further disclosure relating to derivatives and hedging activities is included in Note 11, "Derivative Instruments and Hedging Activities," and Note 12, "Fair Value Measurements," of the notes to consolidated financial statements.

Foreign Exchange

The Group has manufacturing, sales and distribution facilities around the world and thus makes investments and enters into transactions denominated in various foreign currencies. In order to maintain strict control and achieve the benefits of the Group's global diversification, foreign exchange exposures for each currency are netted internally so that only its net foreign exchange exposures are, as appropriate, hedged with financial instruments.

The Group hedges 70% to 90% of the nominal amount of each of its known foreign exchange transactional exposures. The Group primarily enters into foreign currency exchange contracts to reduce the earnings and cash flow impact of the variation of non-functional currency denominated receivables and payables. Gains and losses resulting from hedging instruments offset the foreign exchange gains or losses on the underlying assets and liabilities being hedged. The maturities of the forward exchange contracts generally coincide with the settlement dates of the related transactions. Realized and unrealized gains and losses on these contracts are recognized in the same period as gains and losses on the hedged items. The Group also selectively hedges anticipated transactions that are subject to foreign exchange exposure, primarily with foreign currency exchange contracts, which are designated as cash flow hedges in accordance with ASC 815.

The Group has entered into foreign currency denominated debt obligations to selectively hedge portions of its net investment in non-U.S. subsidiaries. The currency effects of debt obligations are reflected in the accumulated other comprehensive income ("AOCI") account within shareholders' equity attributable to Johnson Controls ordinary shareholders where they offset gains and losses recorded on the Group's net investments globally.

At September 30, 2023 and 2022, the Group estimates that an unfavorable 10% change in the exchange rates would have decreased net unrealized gains by approximately $63 million and $133 million, respectively.

Interest Rates

Substantially all of the Group's outstanding debt has fixed interest rates, and, therefore, any fluctuation in market interest rates is not expected to have a material effect on the Group's results of operations. A 100 basis point increase/decrease in the average interest rate on the Group's variable rate debt would have an immaterial impact on interest expense.

Commodities

The Group uses commodity hedge contracts in the financial derivatives market in cases where commodity price risk cannot be naturally offset or hedged through supply base fixed price contracts. Commodity risks are systematically managed pursuant to policy guidelines. As a cash flow hedge, gains and losses resulting from the hedging instruments offset the gains or losses on purchases of the underlying commodities that will be used in the business. The maturities of the commodity hedge contracts coincide with the expected purchase of the commodities.

ACQUISITION AND CANCELLATION OF OWN SHARES

The Group held 29.6 million and 29.0 million of the Company's own shares as of September 30, 2023 and 2022, respectively, which amounted to 4.2% and 4.0% of total shares issued as of September 30, 2023 and 2022, respectively. The Group acquires the Company's own shares based on capital allocation strategies. The par value of each ordinary share is $0.01.

The Group's own shares activity for the fiscal years ended September 30, 2023 and September 30, 2022 was as follows (in millions):

	Year Ended September 30,			
	2023		2022	
	Shares	Amount	Shares	Amount
Balance at beginning of period	29.0	$ 1,203	28.4	$ 1,152
Payments to acquire own shares	10.5	625	21.7	1,440
Cancellation of own shares	(10.5)	(625)	(21.7)	(1,440)
Other	0.6	37	0.6	51
Balance at end of period	29.6	$ 1,240	29.0	$ 1,203

DIVIDENDS

The authority to declare and pay dividends is vested in the Board of Directors. The timing, declaration and payment of future dividends to holders of the Company's ordinary shares will be determined by the Company's Board of Directors and will depend upon many factors, including the Company's financial condition and results of operations, the capital requirements of the Group's businesses, industry practice and any other relevant factors.

Under Irish Company Law, dividends may only be paid (and share repurchases and redemptions must generally be funded) out of “distributable reserves.” The creation of distributable reserves was accomplished by way of a capital reduction, which the Irish High Court approved on December 18, 2014. Additionally, on April 27, 2018, the Irish High Court approved the Company's conversion of approximately $26.0 billion of share premium to distributable reserves. As of September 30, 2023, the Company's profit and loss account balance was approximately $18.1 billion.

During fiscal 2023 and 2022, the Company declared four quarterly dividends totaling $1.45 and $1.39 per ordinary share, respectively. Dividends of $980 million and $916 million were paid by the Company to shareholders during fiscal years 2023 and 2022, respectively. As of September 30, 2023, there were $252 million of outstanding dividends declared. As of September 30, 2022, there were $241 million of outstanding dividends declared.

FUTURE DEVELOPMENTS

The directors do not anticipate any significant changes in the Group's activities following the date of this report, except as disclosed in the "Significant Events Since Year End" section.

SIGNIFICANT EVENTS SINCE YEAR END

Subsequent events have been evaluated through February 9, 2024, the date this report was approved by the Audit Committee of the Board of Directors and the Board of Directors. Refer to Note 22, "Subsequent Events" for details of subsequent events.

DIRECTORS

For the year ended September 30, 2023, the directors of Johnson Controls Ireland were George R. Oliver, Jean Blackwell, Pierre Cohade, Michael E. Daniels, W. Roy Dunbar, Gretchen R. Haggerty, Ayesha Khanna, Simone Menne, Jürgen Tinggren, Mark P. Vergnano, and John D. Young.

On December 6, 2023, Michael E. Daniels notified the Board of Directors that he will not seek re-election at the end of his term and will retire at the 2024 Annual General Meeting scheduled to be held on March 13, 2024.

DIRECTORS' AND CORPORATE SECRETARIES' INTERESTS IN SHARES

The interests in the ordinary shares of the Company of the directors and corporate secretaries of Johnson Controls Ireland holding office at the end of the fiscal year 2023 and at either the beginning of the fiscal year or date of appointment if later, were as follows:

	September 30,			
	2023		2022	
Directors	Ordinary Shares	Share Units/ Options (1)	Ordinary Shares	Share Units/ Options (1)
George R. Oliver (2)	1,285,900	3,254,512	1,207,669	3,246,877
Jean Blackwell	9,491	2,876	8,006	2,842
Pierre Cohade	8,337	2,876	6,852	2,842
Michael E. Daniels	73,815	2,876	72,135	2,842
W. Roy Dunbar	11,751	2,876	10,250	2,842
Gretchen R. Haggerty	16,757	2,876	15,114	2,842
Ayesha Khanna	—	2,876	—	—
Simone Menne	10,236	2,876	8,672	2,842
Jürgen Tinggren	29,659	2,876	28,134	2,842
Mark P. Vergnano	24,316	2,876	22,831	2,842
John D. Young	11,153	2,876	9,500	2,842
Corporate Secretaries				
John Donofrio (3)	19,852	428,947	16,003	411,686
Richard Dancy	1,623	8,307	603	6,338

(1) Share units/options include unvested restricted stock share units, unvested performance-based share units, and vested and unvested stock options.
(2) Number of share units/options held includes 2,904,279 and 2,856,596 options as of September 30, 2023 and 2022, respectively.
(3) Number of share units/options held includes 354,842 and 324,639 options as of September 30, 2023 and 2022, respectively.

No director, corporate secretary of any of their immediate families had any interest in any shares or debentures of any subsidiary.

POLITICAL DONATIONS

No political donations that require disclosure under Irish Company Law were made during fiscal 2023.

SUBSIDIARY COMPANIES AND UNDERTAKINGS

Refer to Note 29, "Subsidiary Undertakings," of the notes to consolidated financial statements for information regarding subsidiary undertakings, unconsolidated subsidiaries and branches.

GOING CONCERN

The Board has formed a judgment at the time of approving the financial statements that there is a reasonable expectation that the Group and the Company have adequate resources to continue in operational existence for at least the next twelve month period extending from the time of approving the financial statements. The Board considered both current and anticipated uncertainties in its going concern assessment.

The Group has experienced, and could continue to experience, increased material cost inflation as a result of global macroeconomic trends, including increased global demand. The collective impact of these trends has been favorable to revenue due to increased demand and price increases to offset inflation, while negatively impacting margins due to cost pressures. Although the Group has experienced recent improvement, further cost increases could occur in the future, the effect of which will depend on the Group's ability to successfully mitigate and offset the impact of these events

In assessing the potential impact of these macroeconomic trends on its liquidity, the Group prepared cash flow forecasts covering a period of at least twelve months from the date of approval of these financial statements. This assessment included consideration of the forecasted business performance and the cash and financial facilities available to the Group. The Group continues to expect that existing cash and cash equivalents of $1.8 billion as of December 31, 2023, cash generated by its operations, amounts available on its $3.0 billion revolving credit facilities and its ability to access the capital and debt markets will be sufficient to fund the Group's operating and capital needs for at least the next twelve months and thereafter for the foreseeable future. To its knowledge, the Board reasonably believes these uncertainties would not have a material impact on the Group's ability to continue as a going concern as of the financial statements' approval date.

Given the Group's assessment of its ability to fund its expected operating and capital needs, the directors have a reasonable expectation that the Group and Company have adequate resources to continue in operational existence for the foreseeable future. Accordingly, they continue to adopt the going concern basis in preparing the financial statements.

AUDIT COMMITTEE

An Audit Committee as required by the Companies Act 2014, Section 167, has been in place for the fiscal years ended September 30, 2023 and 2022.

STATUTORY AUDITORS

The statutory auditors, PricewaterhouseCoopers, have indicated their willingness to continue in office, and a resolution that they be re-appointed will be proposed at the Annual General Meeting.

STATEMENT ON RELEVANT AUDIT INFORMATION

The directors in office at the date of this report have each confirmed that:

- As far as he/she is aware, there is no relevant audit information of which the Group's statutory auditors are unaware; and
- He/she has taken all the steps that he/she ought to have taken as a director in order to make himself/herself aware of any relevant audit information and to establish that the Group's statutory auditors are aware of that information.

On behalf of the directors

/s/ George R. Oliver	/s/ Gretchen R. Haggerty
George R. Oliver	Gretchen R. Haggerty
Chairman and Chief Executive Officer	Director

February 9, 2024

Independent auditors' report to the members of Johnson Controls International plc

Report on the audit of the financial statements

Opinion

In our opinion:

- Johnson Controls International plc's consolidated financial statements and company financial statements (the "financial statements") give a true and fair view of the group's and the company's assets, liabilities and financial position as at 30 September 2023 and of the group's net income and cash flows for the year then ended;
- the consolidated financial statements have been properly prepared in accordance with accounting principles generally accepted in the United States of America ("US GAAP"), as defined in Section 279 of the Companies Act 2014, to the extent that the use of those principles in the preparation of group financial statements does not contravene any provision of Part 6 of the Companies Act 2014;
- the company financial statements have been properly prepared in accordance with Generally Accepted Accounting Practice in Ireland (accounting standards issued by the Financial Reporting Council of the UK, including Financial Reporting Standard 102 "The Financial Reporting Standard applicable in the UK and Republic of Ireland" and Irish law); and
- the financial statements have been properly prepared in accordance with the requirements of the Companies Act 2014.

We have audited the financial statements, included within the Annual Report, which comprise:

- the Consolidated Statement of Financial Position as at 30 September 2023;
- the Company Balance Sheet as at 30 September 2023;
- the Consolidated Statement of Income for the year then ended;
- the Consolidated Statement of Comprehensive Income for the year then ended;
- the Consolidated Statement of Cash Flows for the year then ended;
- the Consolidated Statement of Shareholders' Equity for the year then ended;
- the Company Statement of Changes in Equity for the year then ended; and
- the notes to the financial statements, which include a description of the significant accounting policies.

Basis for opinion

- We conducted our audit in accordance with International Standards on Auditing (Ireland) ("ISAs (Ireland)") and applicable law. Our responsibilities under ISAs (Ireland) are further described in the Auditors' responsibilities for the audit of the financial statements section of our report. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Independence

We remained independent of the group in accordance with the ethical requirements that are relevant to our audit of the financial statements in Ireland, which includes IAASA's Ethical Standard as applicable to listed entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

Our audit approach

Overview

Materiality	Overall materiality • $131 million (2022: $125 million) - Consolidated financial statements - based on circa 5% of income before income taxes, adjusted for net mark-to-market adjustments of $92 million and impairment costs of $827 million. In respect of the prior financial year materiality equated to circa 5% of income before income taxes, adjusted for net mark-to-market adjustments of $34 million, restructuring and impairment costs of $721 million and other non recurring items of $45 million. • $300 million (2022: $339 million) - Company financial statements - based on circa 1% of total assets. Performance materiality • $98 million (2022: $94 million) - Consolidated financial statements. • $225 million (2022: $254 million) - Company financial statements.
Audit scope	Audit scope • We conducted work on sixteen reporting components. We paid particular attention to these components due to their size or characteristics and to ensure appropriate audit coverage. A full scope audit was performed on one component. Audit procedures were performed on specific account balances or classes of transactions on a further fifteen components. • Overall, the components at which audit work was performed accounted for circa 61% of group net sales and circa 84% of group total assets.
Key audit matters	Key audit matters • Revenue recognition - over time.

The scope of our audit

As part of designing our audit, we determined materiality and assessed the risks of material misstatement in the financial statements. In particular, we looked at where the directors made subjective judgements, for example in respect of significant accounting estimates that involved making assumptions and considering future events that are inherently uncertain. As in all of our audits we also addressed the risk of management override of internal controls, including evaluating whether there was evidence of bias by the directors that represented a risk of material misstatement due to fraud.

Key audit matters

Key audit matters are those matters that, in the auditors' professional judgement, were of most significance in the audit of the financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) identified by the auditors, including those which had the greatest effect on: the overall audit strategy; the allocation of resources in the audit; and directing the efforts of the engagement team. These matters, and any comments we make on the results of our procedures thereon, were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. This is not a complete list of all risks identified by our audit.

Key audit matter	***How our audit addressed the key audit matter***
Revenue recognition - over-time	
Refer to note 1 ("Basis of Presentation and Summary of Significant Accounting Policies" - "Revenue Recognition") and note 4 ("Revenue Recognition").	We evaluated and tested the effectiveness of controls relating to the revenue recognition process for over time contracts with customers.
The group has recognised net sales of $26,793 million, for the year ended 30 September 2023, which relates to over-time and point-in-time contracts with customers.	We evaluated the appropriateness of the timing and amount of revenue recognised for a sample of over time contracts with customers by:
Revenue from certain long-term contracts to design, manufacture and install building products and systems is recognised on an over time basis, with progress towards completion measured using a cost-to-cost input method based on the relationship between actual costs incurred and total estimated costs at completion.	(i) obtaining and inspecting source documents, such as contracts or service tickets, change orders, and evidence of progress towards completion or services delivered;

Total estimated costs at completion are based primarily on estimated purchase contract terms and historical performance trends. Changes to the original estimates may be required during the life of the contract. Estimated losses are recorded when identified. The cost-to-cost method is used by management as it best depicts the transfer of control to the customer that occurs as the group incurs costs. We determined that revenue recognition over time was a key audit matter due to the level of auditor effort in performing procedures and evaluating audit evidence, including management judgements and estimates involved in the timing of recognition of revenue on certain of the group's over time contracts with customers.	(ii) evaluating the appropriateness of the over time revenue recognition methods; (iii) testing, on a sample basis, the costs incurred to date; and (iv) evaluating responses to our inquiries of the group's project managers regarding the estimated costs to complete, for certain contracts; We also performed a comparison of gross margin in the prior year to gross margin at completion of the arrangement in the current year for certain over time contracts with customers to assess the accuracy of historic estimates to complete. We evaluated the appropriateness of the related disclosures in the notes to the financial statements.

How we tailored the audit scope

We tailored the scope of our audit to ensure that we performed enough work to be able to give an opinion on the financial statements as a whole, taking into account the structure of the group, the accounting processes and controls, and the industry in which the group operates.

The Consolidated financial statements are a consolidation of four reportable segments and approximately 670 legal entities. Reporting components are structured by individual plants, grouping of plants or on a country basis depending on their management team and structure. The majority of the group's components are supported by shared service centres across two different territories; China and India.

In determining our audit scope, we first focused on individual reporting components and determined the type of work that needed to be performed at the reporting components by us, as the Irish group engagement team, PwC US as the global engagement team, or other component auditors within other PwC network firms. Further work was performed on a centralised basis at the shared service centres by other PwC network firms. Where the work was performed by PwC US and other PwC network firms, we determined the level of involvement we needed to have in the audit work to be able to conclude whether sufficient appropriate audit evidence had been obtained as a basis for our opinion on the financial statements as a whole.

Overall, through the full scope audit and performance of audit procedures on specific account balances or classes of transactions we obtained coverage of circa 61% of group net sales and circa 84% of group total assets. We allocated materiality levels and issued instructions to each component auditor. In addition to the audit report from each of the component auditors, we received detailed memoranda of examinations on work performed and relevant findings which supplemented our understanding of the component, its results and the audit findings and we participated in a number of audit clearance meetings with the component teams. The above coverage includes other reporting components where audit procedures on specific account balances or classes of transactions were performed.

This, together with additional procedures performed at the group level, gave us the evidence we needed for our opinion on the financial statements as a whole.

Materiality

The scope of our audit was influenced by our application of materiality. We set certain quantitative thresholds for materiality. These, together with qualitative considerations, helped us to determine the scope of our audit and the nature, timing and extent of our audit procedures on the individual financial statement line items and disclosures and in evaluating the effect of misstatements, both individually and in aggregate on the financial statements as a whole.

Based on our professional judgement, we determined materiality for the financial statements as a whole as follows:

	Consolidated financial statements	*Company financial statements*
Overall materiality	$131 million (2022: $125 million).	$300 million (2022: $339 million).
How we determined it	Based on circa 5% of income before income taxes, adjusted for net mark-to-market adjustments of $92 million and impairment costs of $827 million. In respect of the prior financial year this equated to circa 5% of income before income taxes, adjusted for net mark-to-market adjustments of $34 million, restructuring and impairment costs of $721 million and other non recurring items of $45 million.	Based on circa 1% of total assets.
Rationale for benchmark applied	We have applied this benchmark because in our view this is a metric against which recurring performance of the Group is commonly measured by its stakeholders.	As the Company is a holding company, whose main activity is the management of investments in subsidiaries, it is deemed that total assets are the most appropriate benchmark to calculate ma-teriality. For financial statement line items that do not eliminate on consolidation, they have been audited to the overall consolidated materiality levels.

We use performance materiality to reduce to an appropriately low level the probability that the aggregate of uncorrected and undetected misstatements exceeds overall materiality. Specifically, we use performance materiality in determining the scope of our audit and the nature and extent of our testing of account balances, classes of transactions and disclosures, for example in determining sample sizes. Our performance materiality was 75% of overall materiality, amounting to $98 million (consolidated financial statements) and $225 million (company financial statements).

In determining the performance materiality, we considered a number of factors - the history of misstatements, risk assessment and aggregation risk and the effectiveness of controls - and concluded that an amount at the upper end of our normal range was appropriate.

We agreed with the Audit Committee that we would report to them misstatements identified during our audit above $13 million (consolidated and company financial statements) (2022: $13 million) and $13 million (company audit) (2022: $13 million) as well as misstatements below that amount that, in our view, warranted reporting for qualitative reasons.

Conclusions relating to going concern

Our evaluation of the directors' assessment of the group and company's ability to continue to adopt the going concern basis of accounting included:

- obtaining management's going concern assessment for a period of at least twelve months from the date on which the financial statements are authorised for issue;
- agreeing that the cash flow projections underlying management's going concern assessment are materially consistent with the board approved forecasts, assessing how these forecasts are compiled, and evaluating the key assumptions;
- evaluation of management's assessment of the impact of macroeconomic events, including input material cost inflation may continue to have through the going concern assessment period;
- considering available facilities and the maturity profile of the group's debt to assess liquidity and considering expected compliance with debt covenants for the going concern assessment period; and
- assessing the going concern disclosures within note 1 of the consolidated and company financial statements.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the group's or the company's ability to continue as a going concern for a period of at least twelve months from the date on which the financial statements are authorised for issue.

In auditing the financial statements, we have concluded that the directors' use of the going concern basis of accounting in the preparation of the financial statements is appropriate.

However, because not all future events or conditions can be predicted, this conclusion is not a guarantee as to the group's or the company's ability to continue as a going concern. Our responsibilities and the responsibilities of the directors with respect to going concern are described in the relevant sections of this report.

Reporting on other information

The other information comprises all of the information in the Annual Report other than the financial statements and our auditors' report thereon. The directors are responsible for the other information. Our opinion on the financial statements does not cover the other information and, accordingly, we do not express an audit opinion or, except to the extent otherwise explicitly stated in this report, any form of assurance thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If we identify an apparent material inconsistency or material misstatement, we are required to perform procedures to conclude whether there is a material misstatement of the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report based on these responsibilities.

With respect to the Directors' Report, we also considered whether the disclosures required by the Companies Act 2014 (excluding the information included in the "Non Financial Statement" as defined by that Act on which we are not required to report) have been included.

Based on the responsibilities described above and our work undertaken in the course of the audit, ISAs (Ireland) and the Companies Act 2014 require us to also report certain opinions and matters as described below:

- In our opinion, based on the work undertaken in the course of the audit, the information given in the Directors' Report (excluding the information included in the "Non Financial Statement" on which we are not required to report) for the year ended 30 September 2023 is consistent with the financial statements and has been prepared in accordance with the applicable legal requirements.
- Based on our knowledge and understanding of the group and company and their environment obtained in the course of the audit, we have not identified any material misstatements in the Directors' Report (excluding the information included in the "Non Financial Statement" on which we are not required to report).

Responsibilities for the financial statements and the audit

Responsibilities of the directors for the financial statements

As explained more fully in the Statement of Directors' Responsibilities set out on page 3, the directors are responsible for the preparation of the financial statements in accordance with the applicable framework and for being satisfied that they give a true and fair view. The directors are also responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error. In preparing the financial statements, the directors are responsible for assessing the group's and the company's ability to continue as a going concern, disclosing as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the group or the company or to cease operations, or have no realistic alternative but to do so.

Auditors' responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with ISAs (Ireland) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements. Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect material misstatements in respect of irregularities, including fraud. The extent to which our procedures are capable of detecting irregularities, including fraud, is detailed below. Based on our understanding of the group and industry, we identified that the principal risks of non-compliance with laws and regulations related to the US Foreign Corrupt Practices Act, the UK Bribery Act and breaches of environmental and health & safety regulations, and we considered the extent to which non-compliance might have a material effect on the financial statements. We also considered those laws and regulations that have a direct impact on the preparation of the financial statements such as the Companies Act 2014 and tax legislation.

We evaluated management's incentives and opportunities for fraudulent manipulation of the financial statements (including the risk of override of controls), and determined that the principal risks were related to the (1) posting inappropriate journal entries to manipulate financial results and (2) management bias in accounting estimates.

Audit procedures performed by the engagement team included:

- Discussions throughout the year with management, internal audit, the group's internal and external legal counsel, and the head of ethics and compliance, including consideration of known or suspected instances of non-compliance with laws and regulations and fraud, matters reported on the group's whistleblowing helpline and findings from internal audit reports;
- Reading the minutes of Board meetings to identify any inconsistencies with other information provided by management;
- Challenging assumptions and judgements made by management in its significant accounting estimates (because of the risk of management bias);
- Identifying and testing journal entries, in particular journal entries posted with unusual account combinations and all material consolidation journals.

There are inherent limitations in the audit procedures described above. We are less likely to become aware of instances of non-compliance with laws and regulations that are not closely related to events and transactions reflected in the financial statements. Also, the risk of not detecting a material misstatement due to fraud is higher than the risk of not detecting one resulting from error, as fraud may involve deliberate concealment by, for example, forgery or intentional misrepresentations, or through collusion.

Our audit testing might include testing complete populations of certain transactions and balances, possibly using data auditing techniques. However, it typically involves selecting a limited number of items for testing, rather than testing complete populations. We will often seek to target particular items for testing based on their size or risk characteristics. In other cases, we will use audit sampling to enable us to draw a conclusion about the population from which the sample is selected.

A further description of our responsibilities for the audit of the financial statements is located on the IAASA website at:

https://www.iaasa.ie/getmedia/b2389013-1cf6-458b-9b8f-a98202dc9c3a/Description_of_auditors_responsibilities_for_audit.pdf

This description forms part of our auditors' report.

Use of this report

This report, including the opinions, has been prepared for and only for the company's members as a body in accordance with section 391 of the Companies Act 2014 and for no other purpose. We do not, in giving these opinions, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

Other required reporting

Companies Act 2014 opinions on other matters

- We have obtained all the information and explanations which we consider necessary for the purposes of our audit.
- In our opinion the accounting records of the company were sufficient to permit the company financial statements to be readily and properly audited.
- The Company Balance Sheet is in agreement with the accounting records.

Other exception reporting

Directors' remuneration and transactions

Under the Companies Act 2014 we are required to report to you if, in our opinion, the disclosures of directors' remuneration and transactions specified by sections 305 to 312 of that Act have not been made. We have no exceptions to report arising from this responsibility.

Prior financial year Non Financial Statement

We are required to report if the company has not provided the information required by Regulation 5(2) to 5(7) of the European Union (Disclosure of Non-Financial and Diversity Information by certain large undertakings and groups) Regulations 2017 in respect of the prior financial year. We have nothing to report arising from this responsibility.

Gareth Hynes
for and on behalf of PricewaterhouseCoopers
Chartered Accountants and Statutory Audit Firm
Dublin
9 February 2024

Johnson Controls International plc
Consolidated Statement of Income

(in millions, except per share data)	Note	Year Ended September 30, 2023	2022
Net sales			
Products and systems	4	$ 20,251	$ 19,274
Services	4	6,542	6,025
	4	26,793	25,299
Cost of sales			
Products and systems		14,031	13,533
Services		3,791	3,423
		17,822	16,956
Gross profit		8,971	8,343
Selling, general and administrative expenses		(6,181)	(5,945)
Restructuring and impairment costs	17	(1,064)	(721)
Net financing charges		(281)	(213)
Equity income		265	246
Income before income taxes		1,710	1,710
Income tax benefit	18	(323)	(13)
Net income		2,033	1,723
Income attributable to noncontrolling interests		184	191
Net income attributable to Johnson Controls		$ 1,849	$ 1,532
Earnings per share attributable to Johnson Controls			
Basic		$ 2.70	$ 2.20
Diluted		2.69	2.19

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

Johnson Controls International plc
Consolidated Statement of Comprehensive Income

(in millions)	**Year Ended September 30,**	
	2023	**2022**
Net income	$ 2,033	$ 1,723
Other comprehensive income (loss), net of tax:		
Foreign currency translation adjustments	(84)	(603)
Realized and unrealized gains on derivatives	25	7
Pension and postretirement plans	(1)	(3)
Other comprehensive loss	(60)	(599)
Total comprehensive income	1,973	1,124
Comprehensive income attributable to noncontrolling interests:		
Net income	184	191
Other comprehensive income (loss), net of tax:		
Foreign currency translation adjustments	(15)	(123)
Realized and unrealized gains (losses) on derivatives	(1)	1
Other comprehensive loss	(16)	(122)
Comprehensive income attributable to noncontrolling interests	168	69
Comprehensive income attributable to Johnson Controls	$ 1,805	$ 1,055

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

+Johnson Controls International plc
Consolidated Statement of Financial Position

(in millions, except par value and share data)	Note	September 30, 2023	September 30, 2022
Assets			
Cash and cash equivalents		$ 835	$ 2,031
Accounts receivable, less allowance for		6,006	5,727
Inventories	6	2,776	2,665
Other current assets	23	1,120	1,262
Current assets		10,737	11,685
Property, plant and equipment - net	7	3,136	3,131
Goodwill	8	17,936	17,350
Other intangible assets - net	8	4,888	5,155
Investments in partially-owned affiliates		1,056	963
Other noncurrent assets	23	4,489	3,874
Total assets		$ 42,242	$ 42,158
Liabilities and Equity			
Short-term debt	10	$ 385	$ 669
Current portion of long-term debt	10	645	865
Accounts payable		4,268	4,368
Accrued compensation and benefits		937	981
Deferred revenue	4	1,996	1,804
Current provisions	25	525	508
Other current liabilities	23	2,328	2,044
Current liabilities		11,084	11,239
Long-term debt	10	7,818	7,426
Noncurrent provisions	25	4,067	4,509
Other noncurrent liabilities	23	1,579	1,582
Noncurrent liabilities		13,464	13,517
Ordinary shares (par value $0.01; 2.0 billion shares authorized; shares issued: 2023 - 709,968,796; 2022 - 717,726,243)	15	7	7
Ordinary A shares (par value €1.00; 40,000 shares authorized, none outstanding as of September 30, 2023 and 2022)	15	—	—
Preferred shares (par value $0.01; 200,000,000 shares authorized, none outstanding as of September 30, 2023 and 2022)	15	—	—
Ordinary shares held in treasury, at cost (shares held: 2023 - 29,596,724; 2022 - 29,029,475)	15	(1,240)	(1,203)
Share premium	15	17,349	17,224
Retained earnings	15	1,384	1,151
Accumulated other comprehensive loss	15	(955)	(911)
Shareholders' equity attributable to Johnson Controls		16,545	16,268
Noncontrolling interests		1,149	1,134
Total equity		17,694	17,402
Total liabilities and equity		$ 42,242	$ 42,158

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

Approved by the Board of Directors on February 9, 2024 and signed on its behalf by:

/s/ George R. Oliver
George R. Oliver
Chairman and Chief Executive Officer

/s/ Gretchen R. Haggerty
Gretchen R. Haggerty
Director

Johnson Controls International plc
Consolidated Statement of Cash Flows

(in millions)	Year Ended September 30, 2023	2022
Operating Activities of Continuing Operations		
Net income attributable to Johnson Controls	$ 1,849	$ 1,532
Income attributable to noncontrolling interests	184	191
Net income	2,033	1,723
Adjustments to reconcile net income to cash provided by operating activities:		
Depreciation and amortization	848	830
Pension and postretirement benefit expense (income)	61	(216)
Pension and postretirement contributions	(57)	(96)
Equity in earnings of partially-owned affiliates, net of dividends received	(98)	30
Deferred income taxes	(676)	(141)
Non-cash restructuring and impairment charges	827	555
Equity-based compensation expense	111	102
Other - net	(123)	(58)
Changes in assets and liabilities, excluding acquisitions and divestitures:		
Accounts receivable	(168)	(427)
Inventories	(81)	(773)
Other assets	(216)	(362)
Restructuring reserves	59	(7)
Accounts payable and accrued liabilities	(222)	1,270
Accrued income taxes	(77)	(440)
Cash provided by operating activities from continuing operations	2,221	1,990
Investing Activities of Continuing Operations		
Capital expenditures	(539)	(592)
Sale of property, plant and equipment	32	127
Acquisition of businesses, net of cash acquired	(726)	(269)
Other - net	49	41
Cash used by investing activities from continuing operations	(1,184)	(693)
Financing Activities of Continuing Operations		
Net proceeds (payments) from borrowings with maturities less than three months	(51)	379
Proceeds from debt	1,173	1,771
Repayments of debt	(1,555)	(184)
Stock repurchases and retirements	(625)	(1,441)
Payment of cash dividends	(980)	(916)
Proceeds from the exercise of stock options	42	17
Dividends paid to noncontrolling interests	(149)	(121)
Employee equity-based compensation withholding taxes	(37)	(51)
Other - net	8	30
Cash used by financing activities from continuing operations	(2,174)	(516)
Discontinued Operations - Cash used by operating activities	—	(4)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(5)	(53)
Increase (decrease) in cash, cash equivalents and restricted cash	(1,142)	724
Cash, cash equivalents and restricted cash at beginning of period	2,066	1,342
Cash, cash equivalents and restricted cash at end of period	924	2,066
Less: Restricted cash	89	35
Cash and cash equivalents at end of period	$ 835	$ 2,031

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

Johnson Controls International plc
Consolidated Statement of Shareholders' Equity

(in millions)	Note	Year Ended September 30, 2023	2022
Shareholders' Equity Attributable to Johnson Controls			
Beginning Balance		$ 16,268	$ 17,562
Ordinary Shares			
Beginning balance		7	7
Repurchases and retirements of ordinary shares		—	—
Ending balance	15	7	7
Ordinary Shares Held in Treasury, at Cost			
Beginning balance		(1,203)	(1,152)
Employee equity-based compensation withholding taxes		(37)	(51)
Ending balance		(1,240)	(1,203)
Share Premium			
Beginning balance		17,224	17,116
Share-based compensation expense		85	88
Other, including options exercised		40	20
Ending balance		17,349	17,224
Retained Earnings			
Beginning balance		1,151	2,025
Net income attributable to Johnson Controls		1,849	1,532
Cash dividends declared		(991)	(965)
Repurchases and retirements of ordinary shares	15	(625)	(1,441)
Other		—	—
Ending balance		1,384	1,151
Accumulated Other Comprehensive Income (Loss)			
Beginning balance	15	(911)	(434)
Other comprehensive loss	15	(44)	(477)
Ending balance	15	(955)	(911)
Ending Balance		16,545	16,268
Shareholders' Equity Attributable to Noncontrolling Interests			
Beginning Balance		1,134	1,191
Comprehensive income attributable to noncontrolling interests		168	69
Dividends attributable to noncontrolling interests		(152)	(131)
Change in noncontrolling interest share		(1)	5
Ending Balance		1,149	1,134
Total Shareholders' Equity		$ 17,694	$ 17,402
Cash Dividends Declared per Ordinary Share		$ 1.45	$ 1.39

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

1. BASIS OF PRESENTATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

The consolidated financial statements include the consolidated accounts of Johnson Controls International plc, a corporation registered at One Albert Quay, Cork, Ireland and organized under the laws of Ireland under registered number 543654, and its subsidiaries (Johnson Controls International plc and all its subsidiaries, hereinafter collectively referred to as the "Group," "Johnson Controls" or "JCI plc").

The Group's fiscal year ends on September 30. Unless otherwise stated, references to years in this report relate to fiscal years rather than calendar years.

The Directors have elected to prepare the consolidated financial statements in accordance with Section 279 (1) of the Companies Act 2014, which provides that a true and fair view of the state of affairs and profit or loss may be given by preparing the financial statements in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"), as defined in Section 279 of the Companies Act 2014, to the extent that the use of those principles in the preparation of the consolidated financial statements does not contravene any provision of the Companies Act 2014 or of any regulations made thereunder.

Consolidated financial statements and notes prepared in accordance with U.S. GAAP were included in the Group's Annual Report on Form 10-K for the year ended September 30, 2023, filed with the U.S. Securities and Exchange Commission ("SEC"). These consolidated financial statements were prepared in accordance with Irish Company Law, to present to shareholders and file with the Companies Registration Office in Ireland. Accordingly, these consolidated financial statements include presentation and disclosures required by Ireland's Companies Act 2014 in addition to those disclosures required under U.S. GAAP.

Nature of Operations

Johnson Controls International plc, headquartered in Cork, Ireland, is a global leader in smart, healthy and sustainable buildings, serving a wide range of customers in more than 150 countries. The Group's products, services, systems and solutions advance the safety, comfort and intelligence of spaces to serve people, places and the planet. The Group is committed to helping its customers win and creating greater value for all of its stakeholders through its strategic focus on buildings.

The Group is a global leader in engineering, manufacturing, commissioning and retrofitting building products and systems, including residential and commercial heating, ventilating, air-conditioning ("HVAC") equipment, industrial refrigeration systems, controls, security systems, fire-detection systems and fire-suppression solutions. The Group further serves customers by providing technical services, including maintenance, management and repair of equipment (in the HVAC, industrial refrigeration, controls, security and fire-protection space), energy-management consulting and data-driven "smart building" services and solutions powered by its OpenBlue software platform and capabilities. The Group partners with customers by leveraging its broad product portfolio and digital capabilities powered by OpenBlue, together with its direct channel service and solutions capabilities, to deliver outcome-based solutions across the lifecycle of a building that address customers' needs to improve energy efficiency, enhance security, create healthy environments and reduce greenhouse gas emissions.

Principles of Consolidation

The consolidated financial statements include the consolidated accounts of Johnson Controls International plc, a corporation organized under the laws of Ireland, and its subsidiaries. The financial statements have been prepared in United States dollars ("USD") and in accordance with U.S. GAAP as defined in Section 279 (1) of the Companies Act 2014. All significant intercompany transactions have been eliminated. The results of companies acquired or disposed of during the year are included in the consolidated financial statements from the effective date of acquisition or up to the date of disposal. Investments in partially-owned affiliates are accounted for by the equity method when the Group exercises significant influence, which typically occurs when its ownership interest exceeds 20%, and the Group does not have a controlling interest.

The Group consolidates variable interest entities ("VIE") when it has the power to direct the significant activities of the entity and the obligation to absorb losses or receive benefits from the entity that may be significant. The Group did not have any material consolidated or nonconsolidated VIEs in its continuing operations for the presented reporting periods.

Going Concern

The Board has formed a judgment at the time of approving the financial statements that there is a reasonable expectation that the Group and the Company have adequate resources to continue in operational existence for at least the next twelve month period extending from the time of approving the financial statements. The Board considered both current and anticipated uncertainties in its going concern assessment.

The Group has experienced, and could continue to experience, increased material cost inflation as a result of global macroeconomic trends, including increased global demand. The collective impact of these trends has been favorable to revenue due to increased demand and price increases to offset inflation, while negatively impacting margins due to cost pressures. Although the Group has experienced recent improvement, further cost increases could occur in the future, the effect of which will depend on the Group’s ability to successfully mitigate and offset the impact of these events

In assessing the potential impact of these macroeconomic trends on its liquidity, the Group prepared cash flow forecasts covering a period of at least twelve months from the date of approval of these financial statements. This assessment included consideration of the forecasted business performance and the cash and financial facilities available to the Group. The Group continues to expect that existing cash and cash equivalents of $1.8 billion as of December 31, 2023, cash generated by its operations, amounts available on its $3.0 billion revolving credit facilities and its ability to access the capital and debt markets will be sufficient to fund the Group’s operating and capital needs for at least the next twelve months and thereafter for the foreseeable future. To its knowledge, the Board reasonably believes these uncertainties would not have a material impact on the Group’s ability to continue as a going concern as of the financial statements’ approval date.

Given the Group’s assessment of its ability to fund its expected operating and capital needs, the directors have a reasonable expectation that the Group and Company have adequate resources to continue in operational existence for the foreseeable future. Accordingly, they continue to adopt the going concern basis in preparing the financial statements.

Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Fair Value of Financial Instruments

ASC 820, "Fair Value Measurement," defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. ASC 820 also establishes a three-level fair value hierarchy that prioritizes information used in developing assumptions when pricing an asset or liability as follows:

> *Level 1:* Observable inputs such as quoted prices in active markets for identical assets or liabilities;
>
> *Level 2:* Quoted prices in active markets for similar assets or liabilities, quoted prices for identical or similar assets or liabilities in markets that are not active, or inputs, other than quoted prices in active markets, that are observable either directly or indirectly; and
>
> *Level 3:* Unobservable inputs where there is little or no market data, which requires the reporting entity to develop its own assumptions.

ASC 820 requires the use of observable market data, when available, in making fair value measurements. When inputs used to measure fair value fall within different levels of the hierarchy, the level within which the fair value measurement is categorized is based on the lowest level input that is significant to the fair value measurement.

Acquisitions

The purchase price of acquired businesses is allocated to the related identifiable assets and liabilities based on estimated fair values. The excess of the purchase price over the amount allocated to the assets and liabilities, if any, is recorded as goodwill. In addition, any contingent consideration is recorded at the estimated fair value as of the date of the acquisition and is recorded as part of the purchase price. This estimate is updated in future periods and any changes in the estimate, which are not considered an adjustment to the purchase price, are recorded in our consolidated statement of operations. Payments for contingent earn-out liabilities that are less than or equal to estimates on the acquisition date are reflected as financing cash outflows. Amounts paid in excess of the estimated contingent earn-out liabilities on the acquisition date are reflected as operating cash outflows.

All available information is used to estimate fair values. External valuation specialists are typically engaged to assist in the fair value determination of identifiable intangible assets and any other significant assets or liabilities. The preliminary purchase price allocation is adjusted, as necessary, up to one year after the acquisition closing date as more information is obtained regarding assets acquired and liabilities assumed based on facts and circumstances that existed as of the acquisition date.

The purchase price allocation methodology contains uncertainties because it requires the Group to make assumptions and to apply judgment to estimate the fair value of acquired assets and assumed liabilities. The fair value of assets and liabilities is estimated based upon the carrying value of the acquired assets and assumed liabilities and widely accepted valuation techniques, including discounted cash flows. Unanticipated events or circumstances may occur which could affect the accuracy of fair value estimates, including assumptions regarding industry economic factors and business strategies.

Other estimates used in determining fair value include, but are not limited to, future cash flows or income related to intangibles, market rate assumptions and discount rates. Fair value estimates are based upon assumptions believed to be reasonable, but that are inherently uncertain, and therefore, may not be realized. Accordingly, there can be no assurance that the estimates, assumptions, and values reflected in the valuations will be realized, and actual results could differ materially.

Assets and Liabilities Held for Sale

Assets and liabilities (disposal groups) to be sold are classified as held for sale in the period in which all of the following criteria are met:

- Management, having the authority to approve the action, commits to a plan to sell the disposal group;
- The disposal group is available for immediate sale in its present condition subject only to terms that are usual and customary for sales of such disposal groups;
- An active program to locate a buyer and other actions required to complete the plan to sell the disposal group have been initiated;
- Sale of the disposal group is probable and transfer of the disposal group is expected to qualify for recognition as a completed sale within one year, except if events or circumstances beyond the Group's control extend the period of time required to sell the disposal group beyond one year;
- The disposal group is being actively marketed for sale at a price that is reasonable in relation to its current fair value; and
- Actions required to complete the plan indicate that it is unlikely that significant changes to the plan will be made or that the plan will be withdrawn.

The Group initially measures a disposal group that is classified as held for sale at the lower of its carrying value or fair value less any costs to sell in accordance with ASC 360-10-15, "Impairment or Disposal of Long-Lived Assets." The carrying amount of any assets, including goodwill, that are part of the disposal group, but not in the scope of ASC 360-10, are tested for impairment under the relevant guidance prior to measuring the disposal group at fair value, less cost to sell.

Any loss resulting from this measurement is recognized in the period in which the held for sale criteria are met. Conversely, gains are not recognized on the sale of a disposal group until the date of sale. The Group assesses the fair value of a disposal group, less any costs to sell, each reporting period it remains classified as held for sale and reports any subsequent changes as an adjustment to the carrying value of the disposal group, as long as the new carrying value does not exceed the carrying value of the disposal group at the time it was initially classified as held for sale.

Upon determining that a disposal group meets the criteria to be classified as held for sale, the Group reports the assets and liabilities of the disposal group, if material, in the line items assets held for sale and liabilities held for sale in the consolidated statement of financial position.

Cash and Cash Equivalents

Cash equivalents include all highly liquid investments with an original maturity of three months or less when purchased.

Restricted Cash

Restricted cash relates to amounts restricted for payment of asbestos liabilities and certain litigation and environmental matters and is recorded within other current assets in the consolidated statement of financial position.

Receivables

Receivables consist of billed receivables which are currently due from customers and unbilled receivables where the Group has satisfied its performance obligations, but has not yet issued the invoice to the customer. Incentives are periodically offered to customers, including early payment discounts and extended payment terms of certain receivables. The Group extends credit to customers in the normal course of business and maintains an allowance for expected credit losses resulting from the inability or unwillingness of customers to make required payments. The allowance for expected credit losses is based on historical experience, existing economic conditions, reasonable and supportable forecasts, and any specific customer collection issues the Group has identified. The Group evaluates the reasonableness of the allowance for expected credit losses on a quarterly basis.

The Group enters into various factoring agreements to sell certain accounts receivable to third-party financial institutions. The Group collects the majority of the factored receivables on behalf of the financial institutions, but maintains no other continuing involvement with the factored receivables. Sales of accounts receivable are reflected as a reduction of accounts receivable in the consolidated statement of financial position and the proceeds are included in cash flows from operating activities in the consolidated statement of cash flows.

Inventories

Inventories are stated at the lower of cost or net realizable value using the first-in, first-out ("FIFO") method. Finished goods and work-in-process inventories include material, labor and manufacturing overhead costs.

Property, Plant and Equipment

Property, plant and equipment are recorded at cost. Depreciation is provided over the estimated useful lives of the respective assets using the straight-line method for financial reporting purposes and accelerated methods for income tax purposes. Estimated useful lives generally range from 3 to 40 years for buildings and improvements, up to 15 years for subscriber systems, and from 3 to 15 years for machinery and equipment. Interest on borrowings is capitalized during the active construction period of major capital projects, added to the cost of the underlying assets and amortized over the useful lives of the assets.

Goodwill and Indefinite-Lived Intangible Assets

Irish Company Law requires indefinite-lived intangible assets and goodwill to be amortized. However, amortization of indefinite-lived assets and goodwill may not give a true and fair view because not all goodwill and intangible assets decline in value. In addition, since goodwill that does decline in value rarely does so on a straight-line basis, straight-line amortization of goodwill over an arbitrary period may not reflect the economic reality. Therefore, in accordance with U.S. GAAP, goodwill and indefinite-lived intangible assets are not amortized. Rather, the Group assesses the impairment of goodwill and indefinite-lived intangible assets on an annual basis or more frequently if triggering events occur.

Goodwill reflects the cost of an acquisition in excess of the fair values assigned to identifiable net assets acquired. Goodwill is reviewed for impairment during the fourth fiscal quarter (as of July 31) or more frequently if events or changes in circumstances indicate the asset might be impaired. The Group performs impairment reviews for its reporting units, which have been determined to be the Group’s reportable segments or one level below the reportable segments in certain instances, using a fair value method based on management's judgments and assumptions or third party valuations. The fair value of a reporting unit refers to the price that would be received to sell the unit as a whole in an orderly transaction between market participants at the measurement date. In estimating the fair value, the Group uses the multiples of earnings approach based on the average of published multiples of earnings of comparable entities with similar operations and economic characteristics and applies the multiples to the Group's average of historical and future financial results for each reporting unit. In certain instances, the Group uses discounted cash flow analyses or estimated sales price to further support the fair value estimates. The inputs utilized in the analyses are classified as Level 3 inputs within the fair value hierarchy as defined in ASC 820, "Fair Value Measurement." The estimated fair value is then compared to the carrying amount of the reporting unit, including recorded goodwill. The Group is subject to financial statement risk to the extent that the carrying amount exceeds the estimated fair value.

Indefinite-lived intangible assets are also subject to at least annual impairment testing in the fourth fiscal quarter or as events occur or circumstances change that indicate the assets may be impaired. Indefinite-lived intangible assets primarily consist of trademarks and trade names and are tested for impairment using a relief-from-royalty method. The Group considers the implications of both external (e.g., market growth, competition and local economic conditions) and internal (e.g., product sales and expected product growth) factors and their potential impact on cash flows related to the intangible asset in both the near- and long-term. The Group also considers the profitability of the business, among other factors, to determine the royalty rate for use in the impairment assessment.

While the Group believes that the estimates and assumptions underlying the valuation methodologies are reasonable, different estimates and assumptions could result in different outcomes.

Leases

Lessee arrangements

The Group leases certain administrative, production and other facilities, fleet vehicles, information technology equipment and other equipment under arrangements that are accounted for as operating leases. The Group determines whether an arrangement contains a lease at contract inception based on whether the arrangement involves the use of a physically distinct identified asset and whether the Group has the right to obtain substantially all of the economic benefits from the use of the asset throughout the period as well as the right to direct the use of the asset.

Right-of-use assets represent the Group's right to use an underlying asset for the lease term and lease liabilities represent its obligation to make lease payments arising from the lease. Right-of-use assets and the corresponding lease liabilities are recognized at commencement date based on the present value of lease payments for all leases with terms longer than twelve months. The majority of the Group's leases do not provide an implicit interest rate. To determine the present value of lease payments, the Group uses its incremental borrowing rate based on information available on the lease commencement date or the implicit rate if it is readily determinable. The Group determines its incremental borrowing rate based on a comparable market yield curve consistent with its credit rating, term of the lease and relative economic environment. The Group has elected to combine lease and nonlease components for its leases.

Most leases contain options to renew or terminate the lease. Right-of-use assets and lease liabilities reflect only the options which the Group is reasonably certain to exercise.

The Group has certain real estate leases that contain variable lease payments which are based on changes in the Consumer Price Index (CPI). Additionally, the Group's leases generally require it to pay for fuel, maintenance, repair, insurance and taxes. These payments are not included in the right-of-use asset or lease liability and are expensed as incurred.

Lease expense is recognized on a straight-line basis over the lease term.

Lessor arrangements

The Group has monitoring services and maintenance agreements within its security business that include subscriber system assets for which the Group retains ownership. These agreements contain both lease and nonlease components. The Group has elected to combine lease and nonlease components for these arrangements where the timing and pattern of transfer of the lease and nonlease components are the same and the lease component would be classified as an operating lease if accounted for separately. The Group has concluded that in these arrangements the nonlease components are the predominant characteristic, and as a result, the combined component is accounted for under the revenue guidance.

Impairment of Long-Lived Assets

Long-lived assets, including right-of-use assets under operating leases, other tangible assets and intangible assets with definite lives, are reviewed for impairment whenever events or changes in circumstances indicate that the asset's carrying amount may not be recoverable. The Group conducts its long-lived asset impairment analyses in accordance with ASC 360-10-15, "Impairment or Disposal of Long-Lived Assets," ASC 350-30, "General Intangibles Other than Goodwill" and ASC 985-20, "Costs of Software to be Sold, Leased, or Marketed."

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 and evaluates the asset group against the sum of the undiscounted future cash flows. If the undiscounted cash flows do not indicate the carrying amount of the asset group is recoverable, an impairment charge is measured as the amount by which the carrying amount of the asset group exceeds its fair value based on discounted cash flow analysis or appraisals.

Intangible assets acquired in a business combination that are used in research and development activities are considered indefinite-lived until the completion or abandonment of the associated research and development efforts. During the period that those assets are considered indefinite lived, they are not amortized but are tested for impairment annually and more frequently if events or changes in circumstances indicate that it is more likely than not that the asset is impaired. If the carrying amount of an intangible asset exceeds its fair value, the Group recognizes an impairment loss in an amount equal to that excess.

Unamortized capitalized costs of a computer software product are compared to the net realizable value of the product. The amount by which the unamortized capitalized costs of a computer software product exceed the net realizable value of that asset is written off.

Revenue Recognition

Revenue from certain long-term contracts to design, manufacture and install building products and systems as well as unscheduled repair or replacement services is recognized on an over time basis, with progress towards completion measured using a cost-to-cost input method based on the relationship between actual costs incurred and total estimated costs at completion. The cost-to-cost input method is used as it best depicts the transfer of control to the customer that occurs as the Group incurs costs. Changes to the original estimates may be required during the life of the contract and such estimates are reviewed monthly. If contract modifications result in additional goods or services that are distinct from those transferred before the modification, they are accounted for prospectively as if the Group entered into a new contract. If the goods or services in the modification are not distinct from those in the original contract, sales and gross profit are adjusted using the cumulative catch-up method for revisions in estimated total contract costs and contract values. Estimated losses are recorded when identified. The Group does not adjust the promised amount of consideration for the effects of a significant financing component because at contract inception it expects to receive the payment within twelve months of transfer of goods or services.

The Group enters into extended warranties and long-term service and maintenance agreements with certain customers. For these arrangements, revenue is recognized over time on a straight-line basis over the respective contract term.

The Group also sells certain HVAC and refrigeration products and services in bundled arrangements with multiple performance obligations, such as equipment, commissioning, service labor and extended warranties. Approximately four to twelve months separate the timing of the first deliverable until the last piece of equipment is delivered. There may also be extended warranty arrangements with durations of one to five years commencing upon the end of the standard warranty period. In addition, the Group sells security monitoring systems that may have multiple performance obligations, including equipment, installation, monitoring services and maintenance agreements. Revenue associated with the sale of equipment and related installations are recognized over time on a cost-to-cost input method, while the revenue for monitoring and maintenance services are recognized over time as services are rendered. The transaction price is allocated to each performance obligation based on the relative standalone selling price method. In order to estimate relative standalone selling price, market data and transfer price studies are utilized. If the standalone selling price is not directly observable, the Group estimates the standalone selling price using an adjusted market assessment approach or expected cost plus margin approach. If the Group retains ownership of the subscriber system asset, fees for monitoring and maintenance services are recognized over the contract term on a straight-line basis. Non-refundable fees received in connection with the initiation of a monitoring contract, along with associated direct and incremental selling costs, are deferred and amortized over the estimated life of the contract.

In all other cases, the Group recognizes revenue at the point in time when control over the goods or services transfers to the customer.

The Group assesses variable consideration that may affect the total transaction price, including discounts, rebates, refunds, credits or other similar sources of variable consideration, when determining the transaction price of each contract. The Group includes variable consideration in the estimated transaction price when it is probable that significant reversal of revenue recognized would not occur when the uncertainty associated with variable consideration is subsequently resolved. These estimates are based on the amount of consideration that the Group expects to be entitled to.

Shipping and handling costs billed to customers are included in sales and the related costs are included in cost of sales when control transfers to the customer. The Group presents amounts collected from customers for sales and other taxes net of the related amounts remitted.

Subscriber System Assets, Dealer Intangibles and Related Deferred Revenue Accounts

The Group considers assets related to the acquisition of new customers in its electronic security business in three asset categories:

- Internally generated residential subscriber systems outside of North America;
- Internally generated commercial subscriber systems; and
- Customer accounts acquired through the ADT dealer program, primarily outside of North America (referred to as dealer intangibles).

Subscriber system assets include installed property, plant and equipment for which the Group retains ownership and deferred costs directly related to the customer acquisition and system installation. Subscriber system assets represent capitalized equipment (e.g. security control panels, touch pad, motion detectors, window sensors, and other equipment) and installation costs associated with electronic security monitoring arrangements under which the Group retains ownership of the security system assets in a customer's place of business or residence. Installation costs represent costs incurred to prepare the asset for its intended use. The Group pays property taxes on the subscriber system assets and may retrieve such assets when the agreement is terminated. These assets embody a probable future economic benefit as they generate future monitoring revenue for the Group.

Costs related to the subscriber system equipment and installation are categorized as property, plant and equipment rather than deferred costs. Deferred costs associated with subscriber system assets represent direct and incremental selling expenses (such as commissions) related to acquiring the customer. Commissions related to up-front consideration paid by customers in connection with the establishment of the monitoring arrangement are determined based on a percentage of the up-front fees and do not exceed deferred revenue. Such deferred costs are recorded as other current and noncurrent assets within the consolidated statement of financial position.

Subscriber system assets and any deferred revenue resulting from the customer acquisition are accounted for over the expected life of the subscriber. In certain geographical areas which have a large number of customers that behave in a similar manner over time, the Group accounts for subscriber system assets and related deferred revenue using pools, with separate pools for the components of subscriber system assets and any related deferred revenue based on the same month and year of acquisition. Pooled subscriber system assets and related deferred revenue are depreciated using a straight-line method with lives up to 12 years and considering customer attrition. Non-pooled subscriber systems (primarily in Europe, Latin America and Asia) and related deferred revenue are depreciated using a straight-line method with a 15-year life, with remaining balances written off upon customer termination.

Certain contracts and related customer relationships result from purchasing residential security monitoring contracts from an external network of independent dealers who operate under the ADT dealer program, primarily outside of North America. Acquired contracts and related customer relationships are recorded at their contractually determined purchase price.

During the first 6 months (12 months in certain circumstances) after the purchase of the customer contract, any cancellation of monitoring service, including those that result from customer payment delinquencies, results in a chargeback by the Group to the dealer for the full amount of the contract purchase price. The Group records the amount charged back to the dealer as a reduction of the previously recorded intangible asset.

Intangible assets arising from the ADT dealer program described above are amortized in pools determined by the same month and year of contract acquisition on a straight-line basis over the period of the customer relationship. The estimated useful life of dealer intangibles ranges from 12 to 15 years.

Research and Development Costs

Expenditures for research activities relating to product development and improvement are charged against income as incurred and included within selling, general and administrative expenses in the consolidated statement of income. Such expenditures for the years ended September 30, 2023 and 2022 were $320 million and $295 million, respectively.

Stock-Based Compensation

Restricted (Non-vested) Stock /Units

Restricted stock and restricted stock units are typically settled in shares for employees in the U.S. and in cash for employees not in the U.S. Restricted awards typically vest over a period of three years from the grant date. The Group's Compensation and Talent Development Committee may approve different vesting terms on specific grants. The fair value of each share-settled restricted award is based on the closing market value of the Group’s ordinary shares on the date of grant. The fair value of each cash-settled restricted award is recalculated at the end of each reporting period based on the closing market value of the Group's ordinary shares at the end of the reporting period, and the liability and expense are adjusted based on the new fair value.

Performance Share Awards

Performance-based share unit ("PSU") awards are generally contingent on the achievement of predetermined performance goals over a performance period of one to three years and on the award holder's continuous employment until the vesting date. The majority of PSUs are also indexed to the achievement of specified levels of total shareholder return versus a peer group over the performance period.

Upon completion of the performance period, earned PSUs are typically settled with shares of the Group's ordinary shares for employees in the U.S. and in cash for employees not in the U.S.

The fair value of the portion of the PSU which is linked to the achievement of performance goals is based on the closing market value of the Group's ordinary shares on the date of grant. Share-based compensation expense for these PSUs is recognized over the performance period based on the probability of achieving the performance targets.

The fair value of the portion of the PSU that is indexed to total shareholder return is estimated on the date of grant using a Monte Carlo simulation that uses the following assumptions:

- The risk-free interest rate for periods during the contractual life of the PSU is based on the U.S. Treasury yield curve in effect at the time of grant.
- The expected volatility is based on the historical volatility of the Group's stock over the most recent three-year period as of the grant date.

Share-based compensation expense for PSUs which are indexed to total shareholder return is not adjusted for changes in performance subsequent to the grant date because the likelihood of achieving the market condition is incorporated in the grant date fair value of the award.

Stock Options

Stock options are granted with an exercise price equal to the market price of the Group’s stock at the date of grant. Stock option awards typically vest between two and three years after the grant date and expire ten years from the grant date.

The fair value of each option is estimated on the date of grant using a Black-Scholes option valuation model that uses the following assumptions:

- The expected life of options represents the period of time that options granted are expected to be outstanding.
- The risk-free interest rate for periods during the contractual life of the option is based on the U.S. Treasury yield curve in effect at the time of grant.
- For grants in fiscal 2023, expected volatility is based on the historical volatility of the Group's stock corresponding to the expected life as of the grant date. For grants in fiscal 2022 and fiscal 2021, expected volatility is based on the

historical volatility of the Group's stock since October 2016 and certain peer companies' stock prior to October 2016 over the most recent period corresponding to the expected life as of the grant date.

- The expected dividend yield is based on the expected annual dividend as a percentage of the market value of the Group’s ordinary shares as of the grant date.

The Group uses historical data to estimate option exercises and employee terminations within the valuation model.

Earnings Per Share

The Group presents both basic and diluted earnings per share ("EPS") amounts. Basic EPS is calculated by dividing net income attributable to Johnson Controls by the weighted average number of ordinary shares outstanding during the reporting period. Diluted EPS is calculated by dividing net income attributable to Johnson Controls by the weighted average number of ordinary shares and ordinary equivalent shares outstanding during the reporting period that are calculated using the treasury stock method for stock options, unvested restricted stock and unvested performance share awards. The treasury stock method assumes that the Group uses the proceeds from the exercise of stock option awards to repurchase ordinary shares at the average market price during the period. The assumed proceeds under the treasury stock method include the purchase price that the grantee will pay in the future and compensation cost for future service that the Group has not yet recognized. For unvested restricted stock and unvested performance share awards, assumed proceeds under the treasury stock method include unamortized compensation cost.

Foreign Currency Translation

Substantially all of the Group’s international operations use the respective local currency as the functional currency. Assets and liabilities of international entities have been translated at period-end exchange rates, and income and expenses have been translated using average exchange rates for the period. Monetary assets and liabilities denominated in non-functional currencies are adjusted to reflect period-end exchange rates. Aggregate transaction gains, net of the impact of foreign currency hedges, for the years ended September 30, 2023 and 2022 were $28 million and $49 million, respectively.

Derivative Financial Instruments

The Group has written policies and procedures that place all derivative financial instruments under the direction of Corporate treasury and restrict all derivative transactions to those intended for hedging purposes. The use of derivatives for speculative purposes is strictly prohibited. The Group selectively uses derivatives to manage the market risk from changes in foreign exchange rates, commodity prices, stock-based compensation liabilities and interest rates.

The fair values of all derivatives are recorded in the consolidated statement of financial position. The change in a derivative’s fair value is recorded each period in current earnings or accumulated other comprehensive income ("AOCI"), depending on whether the derivative is designated as part of a hedge transaction and if so, the type of hedge transaction.

Investments

Investments in debt and equity securities and deferred compensation plan assets are marked to market at the end of each accounting period. Unrealized gains and losses are recognized in the consolidated statement of income.

Pension and Postretirement Benefits

The Group utilizes a mark-to-market approach for recognizing pension and postretirement benefit expenses, including measuring plan assets at fair value and recognizing actuarial gains and losses in the fourth quarter of each fiscal year or at the date of a remeasurement event.

Guarantees

The Group records an estimate for future warranty-related costs based on actual historical return rates and other known factors. Based on analysis of return rates and other factors, the Group’s warranty provisions are adjusted as necessary. The Group monitors its warranty activity and adjusts its reserve estimates when it is probable that future warranty costs will be different than those estimates.

The Group's product warranty liability is recorded in the consolidated statement of financial position in other current provisions if the warranty is less than one year and in other noncurrent provisions if the warranty extends longer than one year.

Loss Contingencies

Accruals are recorded for various contingencies including legal proceedings, environmental matters, self-insurance and other claims that arise in the normal course of business when it is probable a liability has been incurred and the amount of the liability is reasonably estimable. The accruals are based on judgment, the probability of losses and, where applicable, the consideration of opinions of internal and/or external legal counsel and actuarial determined estimates. Additionally, the Group records receivables from third party insurers when recovery has been determined to be probable.

The Group is subject to laws and regulations relating to protecting the environment. Expenses associated with environmental remediation obligations are recognized when such amounts are probable and can be reasonably estimated.

Liabilities and expenses for workers' compensation, product, general and auto liabilities is dependent on claims experience. For most of these liabilities, claims incurred but not yet reported are estimated by utilizing actuarial valuations based upon historical claims experience. Receivables from third party insurers are recorded when recovery has been determined to be probable. The Group maintains captive insurance companies to manage its insurable liabilities.

Asbestos-Related Contingencies and Insurance Receivables

The Group and certain of its subsidiaries, along with numerous other companies, are named as defendants in personal injury lawsuits based on alleged exposure to asbestos-containing materials. The estimated liability and corresponding insurance recovery for pending and future claims and defense costs is based on the Group's historical claim experience, and estimates of the number and resolution cost of potential future claims that may be filed and is discounted to present value from 2068 (which is the Group's reasonable best estimate of the actuarial determined time period through which asbestos-related claims will be filed against its affiliates). Estimated asbestos-related defense costs are included in the asbestos liability. The Group's legal strategy for resolving claims also impacts these estimates. The Group considers various trends and developments in evaluating the period of time (the look-back period) over which historical claim and settlement experience is used to estimate and value claims reasonably projected to be made through 2068. At least annually, the Group assesses the sufficiency of its estimated liability for pending and future claims and defense costs by evaluating actual experience regarding claims filed, settled and dismissed, and amounts paid in settlements. In addition to claims and settlement experience, the Group considers additional quantitative and qualitative factors such as changes in legislation, the legal environment, and the Group's defense strategy. The Group also evaluates the recoverability of its insurance receivable on an annual basis. The Group evaluates all of these factors and determines whether a change in the estimate of its liability for pending and future claims and defense costs or insurance receivable is warranted.

In connection with the recognition of provisions for asbestos-related matters, the Group records asbestos-related insurance recoveries that are probable. Estimated asbestos-related insurance recoveries represent estimated amounts due to the Group for previously paid and settled claims and the probable reimbursements relating to its estimated liability for pending and future claims discounted to present value. In determining the amount of insurance recoverable, the Group considers available insurance, allocation methodologies, solvency and creditworthiness of the insurers.

Income Taxes

Deferred tax liabilities and assets are recognized for the expected future tax consequences of events that have been reflected in the consolidated financial statements. Deferred tax asset and liabilities are determined based on the differences between the book and tax basis of particular assets and liabilities and operating loss carryforwards, using tax rates in effect for the years in which the differences are expected to reverse. A valuation allowance is provided to reduce the carrying or book value of deferred tax assets if, based upon the available evidence, including consideration of tax planning strategies, it is more-likely-than-not that some or all of the deferred tax assets will not be realized.

Prior Period Revision – Statement of Cash Flows

The Group revised the amounts previously reported as net proceeds from borrowings with maturities less than three months and proceeds from debt for certain short-term debt transactions that were incorrectly presented on a net basis within the financing activities section of the consolidated statement of cash flows for the years ended September 30, 2022 and 2021. Cash provided by financing activities and the total increase (decrease) in cash, cash equivalents and restricted cash were unchanged for all affected periods. The Group does not believe the impact of the incorrect presentation was material to any period.

New Accounting Pronouncements

Recently Issued Accounting Pronouncements

In September 2022, the FASB issued ASU 2022-04, "Disclosure of Supplier Finance Program Obligations", which is intended to enhance the transparency surrounding the use of supplier finance programs. Supplier finance programs may also be referred to as reverse factoring, payables finance, or structured payables arrangements. The amendments require a buyer that uses supplier finance programs to make annual disclosures about the program's key terms, the balance sheet presentation of related amounts, the confirmed amount outstanding at the end of the period, and associated rollforward information. Only the amount outstanding at the end of the period must be disclosed in interim periods. The Group expects to adopt the new disclosures, other than the rollforward disclosure, as required at the beginning of fiscal 2024. The rollforward disclosures will be adopted as required at the beginning of fiscal 2025.

In December 2023, the FASB issued ASU 2023-09, "Income Taxes (Topic 740): Improvements to Income Tax Disclosures," which is intended to enhance the transparency about income tax information through improvements to income tax disclosures primarily related to the rate reconciliation and income taxes paid information. The amendments require that on an annual basis, entities disclose specific categories in the rate reconciliation and provide additional information for reconciling items that meet a quantitative threshold. In addition, the amendments require that entities disclose additional information about income taxes paid as well as additional disclosures of pretax income and income tax expense, and remove the requirement to disclose certain items that are no longer considered cost beneficial or relevant. The Group expects to adopt the new annual disclosures as required for fiscal 2026.

In November 2023, the FASB issued ASU 2023-07, "Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures," which is intended to improve reportable segment disclosures, primarily through enhanced disclosures about significant segment expenses. In addition, the amendments enhance interim disclosure requirements, clarify circumstances in which an entity can disclose multiple segment measures of profit or loss, provide new segment disclosure requirements for entities with a single reportable segment and contain other disclosure requirements. The Group expects to adopt the new annual disclosures as required for fiscal 2025 and the interim disclosures as required beginning with the first quarter of fiscal 2026.

Other recently issued accounting pronouncements are not expected to have a material impact on the Group's consolidated financial statements.

2. ACQUISITIONS AND DIVESTITURES

FM:Systems Acquisition

In July 2023, the Group completed its acquisition of FM:Systems, a leading digital workplace management and Internet of Things ("IoT") solutions provider for facilities and real estate professionals, for $540 million, net of cash acquired, which was comprised of an upfront cash payment of $465 million, net of cash acquired, and the estimated fair value at the acquisition date of contingent earn-out liabilities of $75 million. The contingent earn-out liabilities are primarily based upon the achievement of certain defined operating results in the two years following the acquisition, with a maximum payout of $155 million.

In connection with the acquisition, the Group recorded goodwill of $399 million in the Building Solutions North America segment. Goodwill is attributable primarily to expected synergies, expanded market opportunities and other benefits that the Group believes will result from integrating the products and capabilities of FM:Systems into its operations. The goodwill created in the acquisition is not deductible for tax purposes.

The preliminary fair values of the assets acquired and liabilities assumed related to FM:Systems are as follows (in millions):

Cash and cash equivalents	$	8
Accounts receivable		15
All other current assets		9
Goodwill		399
Intangible assets		194
All other noncurrent assets		7
Total assets acquired		632
Deferred revenue		24
All other current liabilities		49
Other noncurrent liabilities		11
Total liabilities acquired		84
Net assets acquired	$	548

The purchase price allocation to identifiable intangible assets acquired is as follows:

	Fair Value (in millions)		Weighted Average Life (in years)
Customer relationships	$	117	10
Technology		74	10
Trademarks and other definite-lived intangibles		3	4
Total identifiable intangible assets	$	194	

Silent-Aire Acquisition

In May 2021, the Group completed its acquisition of Silent-Aire, a global leader in hyperscale data center cooling and modular critical infrastructure solutions, for approximately $755 million, net of cash acquired, which was comprised of an upfront net cash payment of approximately $661 million, the estimated fair value of contingent earn-out liabilities at the acquisition date of approximately $86 million and a working capital adjustment of $8 million. The contingent earn-out liabilities are based upon the achievement of certain defined operating results in each of the three years following the acquisition, with a maximum payout of approximately $250 million. The Group recorded reductions in the fair value of the contingent earn-out liability of $30 million and $43 million during the years ended September 30, 2023 and 2022, respectively. No earn-out payments were made for the twelve-month earn-out periods ended April 30, 2023 and 2022, as the performance measures for the periods were not achieved.

Other Acquisitions

During fiscal 2023, the Group acquired several other businesses for a combined purchase price, net of cash acquired, of $306 million, of which $260 million was paid as of September 30, 2023. Intangible assets associated with these acquisitions totaled $116 million and primarily relate to customer relationships and technology. The Group recorded goodwill associated with these acquisitions of $119 million in the Global Products segment, $55 million in the Building Solutions Asia Pacific segment and $13 million in the Building Solutions EMEA/LA segment.

During fiscal 2022, the Group acquired several businesses for a combined purchase price, net of cash acquired, of $323 million, of which $269 million was paid as of September 30, 2022. Intangible assets associated with these acquisitions totaled $123 million and primarily relate to customer relationships and technology. The Group recorded goodwill associated with these acquisitions of $194 million, of which $68 million was assigned to the Building Solutions EMEA/LA segment, $45 million was assigned to the Global Products segment, $44 million was assigned to the Building Solutions Asia Pacific segment and $36 million was assigned to the Building Solutions North America segment.

Other acquisitions were not material individually or in the aggregate in fiscal 2023 and 2022.

Divestitures

Refer to Note 3, "Assets and Liabilities Held for Sale & Discontinued Operations," of the notes to the consolidated financial statements for disclosure of a business in the Building Solutions Asia Pacific segment that was sold on August 1, 2023. No divestitures were material individually or in the aggregate in fiscal 2023 and 2022.

3. ASSETS AND LIABILITIES HELD FOR SALE AND DISCONTINUED OPERATIONS

Assets and Liabilities Held for Sale

During fiscal 2023, the Group concluded that its Global Retail business, which is included in the Building Solutions North America, Building Solutions Asia Pacific and Building Solutions EMEA/LA segments and was previously presented as held for sale in the consolidated statement of financial position as of September 30, 2022, no longer met the criteria to be classified as held for sale. The Group discontinued sales efforts based on market factors and other considerations and determined that it was no longer probable that the business would be sold within one year. As a result, the assets and liabilities are now reported as held and used on the consolidated statement of financial position as of both September 30, 2023 and September 30, 2022. The net assets were reclassified to held and used at the lower of fair value or adjusted carrying value in the current period. Due to impairment charges recorded in prior periods, there was no impact to the consolidated statement of income as a result of the reclassification.

A business in the Building Solutions Asia Pacific segment, which was previously classified as held for sale, was sold on August 1, 2023. The net assets were not significant to the consolidated statement of financial position.

During fiscal 2022, the Group determined that certain assets of the Building Solutions Asia Pacific segment no longer met the criteria to be classified as held for sale because the Group could no longer assert that the sale of the assets was probable within one year due to declines in the Chinese real estate market after the COVID-19 lockdowns. As a result, the Group reclassified the held for sale assets to held and used as of September 30, 2022. As a result, the Group reclassified the held for sale assets to held and used as of September 30, 2022. Upon reclassification, an impairment of $45 million was recorded within restructuring and impairment costs in the consolidated statement of income to adjust the asset to the lower of its carrying value adjusted for depreciation and the fair value of the asset as of September 30, 2022.

The following table summarizes impairment charges for the various assets held for sale (in millions):

	Year Ended September 30,	
	2023	2022
Global Retail business	$ 438	$ 359
Business in the Building Solutions Asia Pacific segment	60	60
Certain assets in the Building Solution Asia Pacific segment	—	45

The impairment charges were recorded within restructuring and impairment costs in the consolidated statement of income and include costs to write down the disposal groups to their estimated fair values, less costs to sell; impairment of goodwill; and the write-off of internal-use software projects that were no longer probable of being completed. Refer to Note 8, "Goodwill and Other Intangible Assets," of the notes to the consolidated financial statements for further information regarding the goodwill impairment charges.

The businesses did not meet the criteria to be classified as discontinued operations as neither planned divestiture represented a strategic shift that would have a major effect on the Group's operations and financial results.

4. REVENUE RECOGNITION

Disaggregated Revenue

The following table presents the Group's revenues disaggregated by segment and by products and systems versus services revenue (in millions):

	Year Ended September 30,					
	2023			2022		
	Products & Systems	Services	Total	Products & Systems	Services	Total
Building Solutions North America	$ 6,368	$ 3,962	$ 10,330	$ 5,708	$ 3,659	$ 9,367
Building Solutions EMEA/LA	2,275	1,821	4,096	2,188	1,657	3,845
Building Solutions Asia Pacific	1,987	759	2,746	2,005	709	2,714
Global Products	9,621	—	9,621	9,373	—	9,373
Total	$ 20,251	$ 6,542	$ 26,793	$ 19,274	$ 6,025	$ 25,299

The following table presents further disaggregation of Global Products revenues by product type (in millions):

	Year Ended September 30,	
	2023	2022
HVAC	$ 6,820	$ 6,756
Fire & Security	2,446	2,367
Industrial Refrigeration	355	250
Total	$ 9,621	$ 9,373

Contract Balances

Contract assets represent the Group’s right to consideration for performance obligations that have been satisfied but not billed and consist of unbilled receivables and costs in excess of billings. Contract liabilities are customer payments received before performance obligations are satisfied. Contract balances are classified as assets or liabilities on a contract-by-contract basis at the end of each reporting period.

The following table presents the location and amount of contract balances in the Group's consolidated statement of financial position (in millions):

		September 30,	
	Location of contract balances	2023	2022
Contract assets - current	Accounts receivable - net	$ 2,370	$ 2,067
Contract assets - noncurrent	Other noncurrent assets	12	79
Contract liabilities - current	Deferred revenue	1,996	1,804
Contract liabilities - noncurrent	Other noncurrent liabilities	297	282

The Group recognized revenue that was included in the beginning of period contract liability balance of approximately $1.6 billion and $1.5 billion for the years ended September 30, 2023 and 2022, respectively.

Performance Obligations

A performance obligation is a distinct good, service, or bundle of goods and services promised in a contract. A contract’s transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, the performance obligation is satisfied. When contracts with customers require significant and complex integration, contain goods or services which are highly interdependent or interrelated, or are goods or services which significantly modify or customize other promises in the contracts and, therefore, are not distinct, then the entire contract is accounted for as a single performance obligation. For any contracts with multiple performance obligations, the contract’s transaction price is allocated to each performance obligation based on the estimated relative standalone selling price of each distinct good or service in the contract. For product sales, each product sold to a customer typically represents a distinct performance obligation.

Performance obligations are satisfied as of a point in time or over time. The timing of satisfying the performance obligation is typically indicated by the terms of the contract. As of September 30, 2023, the aggregate amount of the transaction price allocated to remaining performance obligations was approximately $19.6 billion, of which approximately 65% is expected to be recognized as revenue over the next two years. The remaining performance obligations expected to be recognized in revenue beyond two years primarily relate to large, multi-purpose contracts to construct hospitals, schools and other governmental buildings, which include services to be performed over the building's lifetime, with average initial contract terms of 25 to 35 years. Future contract modifications could affect both the timing and the amount of the remaining performance obligations. The Group excludes the value of remaining performance obligations for contracts with an original expected duration of one year or less.

Costs to Obtain or Fulfill a Contract

The Group recognizes the incremental costs incurred to obtain or fulfill a contract with a customer as an asset when the costs are recoverable. These costs consist primarily of sales commissions and bid/proposal costs. Costs to obtain or fulfill a contract are capitalized when incurred and amortized to expense over the period of contract performance.

The following table presents the location and amount of costs to obtain or fulfill a contract recorded in the Group's consolidated statement of financial position (in millions):

	September 30,	
	2023	2022
Other current assets	$ 156	$ 139
Other noncurrent assets	224	174
Total	$ 380	$ 313

Amortization of costs to obtain or fulfill a contract were $251 million and $191 million during the years ended September 30, 2023 and 2022, respectively. There were no impairment losses recognized in the year ended September 30, 2023 or 2022.

5. ACCOUNTS RECEIVABLE

The Group sold $1,962 million and $1,115 million of accounts receivable under factoring agreements during the years ended September 30, 2023, and 2022, respectively. The cost of factoring such receivables was not material. Previously sold receivables still outstanding were $681 million and $476 million as of September 30, 2023 and September 30, 2022, respectively.

6. INVENTORIES

Inventories consisted of the following (in millions):

	September 30,	
	2023	2022
Raw materials and supplies	$ 1,203	$ 1,040
Work-in-process	226	203
Finished goods	1,347	1,422
Inventories	$ 2,776	$ 2,665

7. PROPERTY, PLANT AND EQUIPMENT

The changes in property, plant and equipment by type for fiscal 2023 are as follows (in millions):

	Land	Buildings and Improvements	Subscriber Systems	Machinery and Equipment	Construction in Progress	Total
Cost:						
At September 30, 2022	$ 197	$ 1,320	$ 762	$ 3,745	$ 514	$ 6,538
Capital expenditures and acquisitions	—	54	127	450	22	653
Disposals and divestitures	—	(35)	(47)	(58)	—	(140)
Impairments	—	(1)	(86)	(83)	—	(170)
Currency translation and other	(3)	(1)	67	173	4	240
At September 30, 2023	$ 194	$ 1,337	$ 823	$ 4,227	$ 540	$ 7,121
Accumulated depreciation:						
At September 30, 2022	$ —	$ (468)	$ (212)	$ (2,727)	$ —	$ (3,407)
Depreciation expense	—	(67)	(89)	(280)	—	(436)
Disposals and divestitures	—	25	13	51	—	89
Impairments	—	—	11	1	—	12
Currency translation and other	—	(10)	(56)	(177)	—	(243)
At September 30, 2023	$ —	$ (520)	$ (333)	$ (3,132)	$ —	$ (3,985)
Net book value:						
At September 30, 2022	$ 197	$ 852	$ 550	$ 1,018	$ 514	$ 3,131
At September 30, 2023	$ 194	$ 817	$ 490	$ 1,095	$ 540	$ 3,136

During the fourth quarter of fiscal 2023, the Group determined that a triggering event had occurred in the asset group comprising the security subscriber business of Argentina, primarily as a result of the significant devaluation of the Argentine peso that occurred during the quarter and the resulting impact on operating results and cash flows. The Group conducted the two-step impairment test required in accordance with ASC 360, "Property, Plant & Equipment" and determined that the carrying amount of the asset group exceeded its fair value. A non-cash impairment charge to the subscriber system assets of $78 million was recorded and is included in restructuring and impairment costs in the consolidated statement of income. The Group used a discounted cash flow model to estimate the fair value of the asset group. The primary assumptions and inputs used in the model included management's internal projections of future cash flows, the weighted-average cost of capital and the long-term growth rate. The fair value measurement is classified as Level 3 within the fair value hierarchy as defined in ASC 820, "Fair Value Measurement" due to the unobservable inputs used.

8. GOODWILL AND OTHER INTANGIBLE ASSETS

Goodwill

The changes in the carrying amount of goodwill in each of the Group's reportable segments were as follows (in millions):

	Year Ended September 30, 2023				
	Building Solutions North America	Building Solutions EMEA/LA	Building Solutions Asia Pacific	Global Products	Total
Goodwill	$ 9,630	$ 1,794	$ 1,116	$ 5,591	18,131
Accumulated impairment loss	(659)	(47)	—	(75)	(781)
Balance at beginning of period	8,971	1,747	1,116	5,516	17,350
Acquisitions [1]	399	13	55	119	586
Impairments	—	—	—	(184)	(184)
Foreign currency translation and other	11	125	8	40	184
Balance at end of period	$ 9,381	$ 1,885	$ 1,179	$ 5,491	$ 17,936

[1] Includes measurement period adjustments

In the second quarter of fiscal 2023, management completed an updated comprehensive review of the Silent-Aire reporting unit, which is included in the Global Products segment. Because actual results were lower than planned and the nearer term forecast was revised to reflect lower margins and earnings, the Group determined a triggering event had occurred and a quantitative test of goodwill for possible impairment was necessary. As a result of the goodwill impairment test, the Group recorded a non-cash impairment charge of $184 million within restructuring and impairment costs in the consolidated statement of income in fiscal 2023, which was determined by comparing the carrying amount of the reporting unit to its fair value. The Silent-Aire reporting unit has no remaining goodwill balance as of September 30, 2023.

Management completed its fiscal 2023 annual impairment test as of July 31. The fair value of all reporting units substantially exceeded their carrying values, with the exception of one reporting unit with $455 million of goodwill whose fair value in excess of its carrying value was approximately 10%. For this reporting unit, a 1% increase in the discount rate, or a 1.5% decrease in the revenue growth rates, would cause the fair value to be less than the carrying value. While no impairment was recorded, it is possible that future changes in circumstances could result in a non-cash impairment charge.

During its fiscal 2022 annual impairment test, the Group determined that goodwill in the Silent-Are reporting unit was impaired and recorded a non-cash impairment charge of $75 million within restructuring and impairment costs in the consolidated statement of income. The impairment charge was determined by comparing the carrying amount of the reporting unit to its fair value.

The Group used a discounted cash flow model to estimate the fair value of the Silent-Aire reporting unit in both fiscal 2023 and 2022. The primary assumptions and inputs used in the model included management's internal projections of future cash flows, the weighted-average cost of capital and the long-term growth rate. The fair value measurement is classified as Level 3 within the fair value hierarchy as defined in ASC 820, "Fair Value Measurement" due to the unobservable inputs used.

In fiscal 2022, the Group concluded it had a triggering event requiring assessment of goodwill impairment for its North America Retail reporting unit in conjunction with classifying its Global Retail business as held for sale. As a result, the Group recorded a non-cash impairment charge of $235 million within restructuring and impairment costs in the consolidated statement of income in fiscal 2022. The North America Retail reporting unit had no remaining goodwill balance as of September 30, 2023 or 2022. The Group used the market approach to estimate the fair value of the reporting unit based on the relative estimated sales proceeds for the planned disposal of the Global Retail business attributable to the North America Retail reporting unit. The inputs utilized in the analysis are classified as Level 3 inputs within the fair value hierarchy as defined in ASC 820, "Fair Value Measurement."

Refer to Note 3, "Assets and Liabilities Held for Sale & Discontinued Operations," of the notes to the consolidated financial statements for further disclosure.

There were no other triggering events requiring that an impairment assessment be conducted in fiscal 2023, 2022 or 2021. However, it is possible that future changes in circumstances would require the Group to record additional non-cash impairment charges.

Other Intangible Assets

The Group's other intangible assets, primarily from business acquisitions, consisted of (in millions):

	Definite-Lived			Indefinite-Lived	
	Technology	Customer relationships	Miscellaneous	Trademarks and tradenames	Total
Cost:					
At September 30, 2022	$ 1,481	$ 3,011	$ 949	$ 2,207	$ 7,648
Acquisitions and additions	159	147	161	1	468
Divestitures and disposals	—	—	(16)	—	(16)
Impairments	(97)	(168)	(177)	(133)	(575)
Currency translation and other	32	57	(28)	39	100
At September 30, 2023	$ 1,575	$ 3,047	$ 889	$ 2,114	$ 7,625
Accumulated amortization:					
At September 30, 2022	$ (728)	$ (1,340)	$ (425)	$ —	$ (2,493)
Amortization expense	(146)	(215)	(78)	—	(439)
Divestitures and disposals	—	—	12	—	12
Impairments	70	89	47	—	206
Currency translation and other	(2)	(30)	9	—	(23)
At September 30, 2023	$ (806)	$ (1,496)	$ (435)	$ —	$ (2,737)
Net book value:					
At September 30, 2022	$ 753	$ 1,671	$ 524	$ 2,207	$ 5,155
At September 30, 2023	$ 769	$ 1,551	$ 454	$ 2,114	$ 4,888

During the fourth quarter of fiscal 2023, the Group impaired $18 million of Miscellaneous intangible assets in the Global Products segment and $10 million of a trademark in the Building Solutions Asia Pacific segment. These non-cash charges were recorded within restructuring and impairment costs in the consolidated statement of income.

There was no impairment of other indefinite-lived intangible assets in any of these years, other than as disclosed above. For all other remaining indefinite lived intangible assets, the Group estimated fair values were greater than the carrying values, with the exception of three other registered trademarks in which the estimated fair values were consistent with their carrying values which totaled $412 million.

Amortization of other intangible assets included within continuing operations for the years ended September 30, 2023 and 2022 was $439 million and $427 million, respectively.

The following table summarizes the expected amortization of definite-lived intangible assets, excluding the impact of future acquisitions, by year (in millions):

2024	$ 508
2025	479
2026	410
2027	365
2028	252

9. LEASES

The following table presents the Group's lease costs (in millions):

	Year Ended September 30,	
	2023	2022
Operating lease cost	$ 384	$ 352
Variable lease cost	165	165
Total lease costs	$ 549	$ 517

The following table presents supplemental consolidated statement of financial position information (in millions):

		September 30,	
	Location of lease balances	2023	2022
Operating lease right-of-use assets	Other noncurrent assets	$ 1,389	$ 1,271
Operating lease liabilities - current	Other current liabilities	318	280
Operating lease liabilities - noncurrent	Other noncurrent liabilities	1,086	987
Weighted-average remaining lease term		7 years	7 years
Weighted-average discount rate		3.5 %	2.1 %

The following table presents supplemental cash flow information related to operating leases (in millions):

	Year Ended September 30,	
	2023	2022
Cash paid for amounts included in the measurement of lease liability:		
Operating cash outflows from operating leases	$ 373	$ 367
Noncash operating lease activity:		
Right-of-use assets obtained in exchange for operating lease liabilities	427	369

The following table presents future minimum rental payments for operating lease liabilities as of September 30, 2023 (in millions):

2024	$ 358
2025	300
2026	227
2027	171
2028	123
After 2028	404
Total operating lease payments	1,583
Less: Interest	(179)
Present value of lease payments	$ 1,404

10. DEBT AND FINANCING ARRANGEMENTS

Short-Term Debt

Short-term debt consisted of the following (in millions):

	September 30, 2023	September 30, 2022
Bank borrowings	$ 26	$ 10
Commercial paper	200	172
Term loans	159	487
	$ 385	$ 669
Weighted average interest rate on short-term debt outstanding	5.1 %	0.5 %

Long-Term Debt

Long-term debt consisted of the following (in millions; due dates by fiscal year):

Issuer	Interest Rate	Due Date	Par Value	Carrying Value September 30, 2023	Carrying Value September 30, 2022
JCI plc	4.625%	2023	$ 25	$ —	$ 25
TIFSA[1]	4.625%	2023	$ 7	—	7
JCI plc	1.00%	2023	€ 846	—	830
JCI plc	3.625%	2024	$ 453	453	453
JCI Inc.	3.625%	2024	$ 31	31	31
JCI plc	EURIBOR plus 0.70%	2024	€ 150	159	—
JCI plc	1.375%	2025	€ 423	450	419
TIFSA[1]	1.375%	2025	€ 54	57	53
JCI plc	3.90%	2026	$ 487	499	505
TIFSA[1]	3.90%	2026	$ 51	50	51
JCI plc	TORF plus 0.40%	2027	¥ 30,000	202	208
JCI plc and TFSCA[2]	0.375%	2027	€ 500	528	488
JCI plc and TFSCA[2]	3.00%	2028	€ 600	634	586
JCI plc and TFSCA[2]	1.75%	2030	$ 625	624	623
JCI plc and TFSCA[2]	2.00%	2031	$ 500	497	496
JCI plc and TFSCA[2]	1.00%	2032	€ 500	529	489
JCI plc and TFSCA[2]	4.90%	2032	$ 400	394	394
JCI plc and TFSCA[2]	4.25%	2035	€ 800	839	—
JCI plc	6.00%	2036	$ 342	339	339
JCI Inc.	6.00%	2036	$ 8	8	8
JCI plc	5.70%	2041	$ 190	189	189
JCI Inc.	5.70%	2041	$ 30	30	30
JCI plc	5.25%	2042	$ 155	155	155
JCI Inc.	5.25%	2042	$ 6	6	6
JCI plc	4.625%	2044	$ 444	442	441
JCI Inc.	4.625%	2044	$ 6	6	6
JCI plc	5.125%	2045	$ 477	431	557
TIFSA[1]	5.125%	2045	$ 23	23	23
JCI plc	6.95%	2046	$ 32	32	32
JCI Inc.	6.95%	2046	$ 4	4	4
JCI plc	4.50%	2047	$ 500	496	496
JCI plc	4.95%	2064	$ 341	340	340
JCI Inc.	4.95%	2064	$ 15	15	15
Other				36	25
Gross long-term debt				8,498	8,324
Less: current portion				645	865
Less: debt issuance costs				35	33
Long-term debt				$ 7,818	$ 7,426

[1] TIFSA = Tyco International Finance S.A.
[2] TFSCA = Tyco Fire & Security Finance S.C.A.

The following table presents maturities of long-term debt as of September 30, 2023 (in millions):

2024	$ 646
2025	508
2026	550
2027	731
2028	634
After 2028	5,429
Total	$ 8,498

Other

As of September 30, 2023, the Group had a syndicated $2.5 billion committed revolving credit facility, which was scheduled to expire in December 2024, and a syndicated $500 million committed revolving credit facility, which expired in November 2023. Both credit facilities were renewed on December 11, 2023. The $2.5 billion facility is now scheduled to expire in December 2028 and the $500 million facility is now scheduled to expire in December 2024. There were no draws on the facilities as of September 30, 2023.

As of September 30, 2023, the Group was in compliance with all financial covenants set forth in its credit agreements and the indentures governing its outstanding notes, and expects to remain in compliance for the foreseeable future.

Total interest paid on both short and long-term debt for the years ended September 30, 2023 and 2022 was $298 million and $226 million, respectively.

Interest expense is comprised of (in millions):

	Year Ended September 30,	
	2023	2022
Interest on debt payable within five years	$ 99	$ 68
Interest on debt payable beyond five years	208	157
	$ 307	$ 225

11. DERIVATIVE INSTRUMENTS AND HEDGING ACTIVITIES

Cash Flow Hedges

The Group has global operations and participates in foreign exchange markets to minimize its risk of loss from fluctuations in foreign currency exchange rates. The Group selectively hedges anticipated transactions that are subject to foreign exchange rate risk primarily using foreign currency exchange forward contracts. The Group hedges 70% to 90% of the notional amount of each of its known foreign exchange transactional exposures.

The Group selectively hedges anticipated transactions that are subject to commodity price risk, primarily using commodity hedge contracts, to minimize overall price risk associated with its purchases of copper and aluminum in cases where commodity price risk cannot be naturally offset or hedged through supply base fixed price contracts. Commodity risks are systematically managed pursuant to policy guidelines. The maturities of the commodity hedge contracts coincide with the expected purchase of the commodities.

As cash flow hedges under ASC 815, "Derivatives and Hedging," the hedge gains or losses due to changes in fair value are initially recorded as a component of AOCI and are subsequently reclassified into earnings when the hedged transactions occur and affect earnings. These contracts were highly effective in hedging the variability in future cash flows attributable to changes in currency exchange rates during the years ended September 30, 2023 and 2022.

The Group had the following outstanding contracts to hedge forecasted commodity purchases (in metric tons):

Commodity	Volume Outstanding as of September 30, 2023	2022
Copper	2,812	3,629
Aluminum	5,976	6,758

The Group enters into forward-starting interest rate swaps in conjunction with anticipated note issuances. The following table summarizes forward-starting interest rate swaps and the related anticipated note issuances (in millions):

	Year Ended September 30,	
	2023	2022
US dollar denominated		
Forward-starting interest swaps	$ 600	$ 300
Anticipated note issuance	800	400
Euro denominated		
Forward-starting interest swap	€ 400	€ 200
Anticipated note issuance	800	600

Forward-starting interest swaps are terminated when the anticipated notes are issued. As of September 30, 2023, $600 million of forward-starting interest swaps were outstanding. Accumulated amounts recorded in AOCI as of the date of the note issuance are amortized to interest expense over the life of the related note to reflect the difference between the swap's reference rate and the fixed rate of the note.

Net Investment Hedges

The Group enters into cross-currency interest rate swaps and foreign currency denominated debt obligations to selectively hedge portions of its net investment in non-U.S. subsidiaries. The currency effects of the cross-currency interest rate swaps and debt obligations are reflected in the AOCI account within shareholders'equity attributable to Johnson Controls ordinary shareholders where they offset gains and losses recorded on the Group's net investments globally.

The following table summarizes net investment hedges (in billions):

	September 30,	
	2023	2022
Euro-denominated bonds designated as net investment hedges in Europe	€ 2.9	€ 2.9
Yen-denominated debt designated as a net investment hedge in Japan	¥ 30	¥ 30
US dollar vs. Yen cross-currency interest rate swap designated as a net investment hedge in Japan	¥ 14	¥ —

Derivatives Not Designated as Hedging Instruments

The Group holds certain foreign currency forward contracts not designated as hedging instruments under ASC 815 to hedge foreign currency exposure resulting from monetary assets and liabilities denominated in nonfunctional currencies. The changes in fair value of these foreign currency exchange derivatives are recorded in the consolidated statement of income where they offset foreign currency transactional gains and losses on the nonfunctional currency denominated assets and liabilities being hedged.

Fair Value of Derivative Instruments

The following table presents the location and fair values of derivative instruments and hedging activities included in the Group's consolidated statement of financial position (in millions):

	Designated as Hedging Instruments		Not Designated as Hedging Instruments	
	September 30, 2023	September 30, 2022	September 30, 2023	September 30, 2022
Other current assets				
Foreign currency exchange derivatives	$ 16	$ 30	$ 13	$ 24
Interest rate swaps	22	—	—	—
Other noncurrent assets				
Cross-currency interest rate swap	5	—	—	—
Total assets	$ 43	$ 30	$ 13	$ 24
Other current liabilities				
Foreign currency exchange derivatives	$ 20	$ 24	$ 5	$ 27
Commodity derivatives	2	10	—	—
Long-term debt				
Foreign currency denominated debt	3,253	3,077	—	—
Total liabilities	$ 3,275	$ 3,111	$ 5	$ 27

Counterparty Credit Risk

The use of derivative financial instruments exposes the Group to counterparty credit risk. The Group has established policies and procedures to limit the potential for counterparty credit risk, including establishing limits for credit exposure and continually assessing the creditworthiness of counterparties. As a matter of practice, the Group deals with major banks worldwide having strong investment grade long-term credit ratings. To further reduce the risk of loss, the Group generally enters into International Swaps and Derivatives Association ("ISDA") master netting agreements with substantially all of its counterparties. The Group enters into ISDA master netting agreements with counterparties that permit the net settlement of amounts owed under the derivative contracts. The master netting agreements generally provide for net settlement of all outstanding contracts with a counterparty in the case of an event of default or a termination event. The Group has not elected to offset the fair value positions of the derivative contracts recorded in the consolidated statement of financial position.

The Group's derivative contracts do not contain any credit risk related contingent features and do not require collateral or other security to be furnished by the Group or the counterparties. The Group's exposure to credit risk associated with its derivative instruments is measured on an individual counterparty basis, as well as by groups of counterparties that share similar attributes. The Group does not anticipate any non-performance by any of its counterparties, and the concentration of risk with financial institutions does not present significant credit risk to the Group.

The gross and net amounts of derivative assets and liabilities were as follows (in millions):

	Fair Value of Assets		Fair Value of Liabilities	
	September 30, 2023	September 30, 2022	September 30, 2023	September 30, 2022
Gross amount recognized	$ 56	$ 54	$ 3,280	$ 3,138
Gross amount eligible for offsetting	(19)	(42)	(19)	(42)
Net amount	$ 37	$ 12	$ 3,261	$ 3,096

Derivatives Impact on the Statements of Income and Statements of Comprehensive Income

The following table presents the pre-tax gains (losses) recorded in other comprehensive income (loss) related to cash flow hedges (in millions):

Derivatives in Cash Flow Hedging Relationships	Year Ended September 30, 2023	Year Ended September 30, 2022
Foreign currency exchange derivatives	$ (13)	$ 26
Commodity derivatives	1	(21)
Interest rate swaps	27	16
Total	$ 15	$ 21

The following table presents the location and amount of the pre-tax gains (losses) on cash flow hedges reclassified from AOCI into the Group's consolidated statement of income (in millions):

Derivatives in Cash Flow Hedging Relationships	Location of Gain (Loss) Reclassified from AOCI into Income	Year Ended September 30, 2023	Year Ended September 30, 2022
Foreign currency exchange derivatives	Cost of sales	$ (4)	$ 25
Commodity derivatives	Cost of sales	(8)	(7)
Interest rate swaps	Net financing charges	—	(2)
Total		$ (12)	$ 16

The following table presents the location and amount of pre-tax gains (losses) on derivatives not designated as hedging instruments recognized in the Group's consolidated statement of income (in millions):

Derivatives Not Designated as Hedging Instruments	Location of Gain (Loss) Recognized in Income on Derivative	Year Ended September 30, 2023	Year Ended September 30, 2022
Foreign currency exchange derivatives	Cost of sales	$ (16)	$ 10
Foreign currency exchange derivatives	Net financing charges	(103)	85
Foreign currency exchange derivatives	Selling, general and administrative	—	—
Foreign currency exchange derivatives	Income tax provision	—	—
Interest rate swaps	Net financing charges	1	—
Equity swap	Selling, general and administrative	—	(5)
Total		$ (118)	$ 90

Pre-tax gains (losses) on net investment hedges recorded as foreign currency translation adjustment ("CTA") within other comprehensive income (loss) were $(223) million and $470 million for the years ended September 30, 2023 and 2022, respectively. No gains or losses were reclassified from CTA into income for the years ended September 30, 2023 and 2022.

12. FAIR VALUE MEASUREMENTS

The following tables present the Group's fair value hierarchy for those assets and liabilities measured at fair value (in millions):

	Total as of September 30, 2023	Fair Value Measurements Using: Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Other current assets				
Foreign currency exchange derivatives	$ 29	$ —	$ 29	$ —
Interest rate swaps	22	—	22	—
Other noncurrent assets				
Cross-currency interest rate swap	5	—	5	—
Deferred compensation plan assets	45	45	—	—
Exchange traded funds (fixed income)[1]	76	76	—	—
Exchange traded funds (equity)[1]	155	155	—	—
Total assets	$ 332	$ 276	$ 56	$ —
Other current liabilities				
Foreign currency exchange derivatives	$ 25	$ —	$ 25	$ —
Commodity derivatives	2	—	2	—
Contingent earn-out liabilities	48	—	—	48
Other noncurrent liabilities				
Contingent earn-out liabilities	76	—	—	76
Total liabilities	$ 151	$ —	$ 27	$ 124

	Total as of September 30, 2022	Fair Value Measurements Using: Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Other current assets				
Foreign currency exchange derivatives	$ 54	$ —	$ 54	$ —
Exchange traded funds (fixed income)[1]	22	22	—	—
Other noncurrent assets				
Deferred compensation plan assets	46	46	—	—
Exchange traded funds (fixed income)[1]	86	86	—	—
Exchange traded funds (equity)[1]	131	131	—	—
Total assets	$ 339	$ 285	$ 54	$ —
Other current liabilities				
Foreign currency exchange derivatives	$ 51	$ —	$ 51	$ —
Commodity derivatives	10	—	10	—
Contingent earn-out liabilities	30	—	—	30
Other noncurrent liabilities				
Contingent earn-out liabilities	30	—	—	30
Total liabilities	$ 121	$ —	$ 61	$ 60

[1]Classified as restricted investments for payment of asbestos liabilities. Refer to Note 21, "Commitments and Contingencies" of the notes to consolidated financial statements for further details.

The following table summarizes the changes in contingent earn-out liabilities, which are valued using significant unobservable inputs (Level 3) (in millions):

Balance at September 30, 2022	$	60
Acquisitions		112
Payments		(10)
Reduction for change in estimates		(39)
Currency translation		1
Balance at September 30, 2023	$	124

Valuation Methods

Commodity derivatives: The commodity derivatives are valued under a market approach using publicized prices, where available, or dealer quotes.

Contingent earn-out liabilities: The contingent earn-out liabilities are generally established using a Monte Carlo simulation based on the forecasted operating results and the earn-out formulas specified in the purchase agreements.

Cross-currency interest rate swaps: The fair value of cross-currency interest rate swaps represents the difference between the swap's reference rate and exchange rate and the interest and exchange rates for a similar instrument as of the reporting period. Cross-currency interest rate swaps are valued under a market approach using publicized prices.

Deferred compensation plan assets: Assets held in the deferred compensation plans will be used to pay benefits under certain of the Group's non-qualified deferred compensation plans. The investments primarily consist of mutual funds which are publicly traded on stock exchanges and are valued using a market approach based on the quoted market prices. Unrealized gains (losses) on the deferred compensation plan assets are recognized in the consolidated statement of income where they offset unrealized gains and losses on the related deferred compensation plan liability.

Foreign currency exchange derivatives: The foreign currency exchange derivatives are valued under a market approach using publicized spot and forward prices.

Interest rate swaps: The fair value of interest rate swaps represents the difference between the swap's reference rate and the interest rate for a similar instrument as of the reporting period. Interest rate swaps are valued under a market approach using publicized prices.

Investments in exchange traded funds: Investments in exchange traded funds are valued using a market approach based on quoted market prices, where available, or broker/dealer quotes of identical or comparable instruments. Refer to Note 21, "Commitments and Contingencies," of the notes to consolidated financial statements for further information.

The following table presents the portion of unrealized gains (losses) recognized in the consolidated statement of income that relate to equity securities still held at September 30, 2023 and 2022 (in millions):

	Year Ended September 30,	
	2023	2022
Deferred compensation plan assets	$ 5	$ (10)
Investments in exchange traded funds	24	(55)

All of the gains and losses on investments in exchange traded funds related to restricted investments.

The fair values of cash and cash equivalents, accounts receivable, short-term debt and accounts payable approximate their carrying values.

The fair value of long-term debt at September 30, 2023 and 2022 was as follows (in billions):

	Year Ended September 30, 2023	Year Ended September 30, 2022
Public debt	$ 7.1	$ 7.1
Other long-term debt	0.4	0.2
Total fair value of long-term debt	$ 7.5	$ 7.3

The fair value of public debt was determined primarily using market quotes which are classified as Level 1 inputs within the ASC 820 fair value hierarchy. The fair value of other long-term debt was determined using quoted market prices for similar instruments and are classified as Level 2 inputs within the ASC 820 fair value hierarchy.

13. STOCK-BASED COMPENSATION

The Johnson Controls International plc 2021 Equity and Incentive Plan authorizes stock options, stock appreciation rights, restricted (non-vested) stock/units, performance shares, performance units and other stock-based awards. The Compensation and Talent Development Committee of the Group's Board of Directors determines the types of awards to be granted to individual participants and the terms and conditions of the awards. Annual awards are typically granted in the first quarter of the fiscal year. As of September 30, 2023, there were 55 million shares of the Group's common stock reserved and 41 million shares available for issuance under the 2021 Equity and Incentive Plan.

The following table summarizes stock-based compensation related charges and benefits (in millions):

	Year Ended September 30, 2023	Year Ended September 30, 2022
Compensation expense	$ 101	$ 104
Income tax benefit resulting from share-based compensation arrangements	25	26
Tax impact from exercise and vesting of equity settled awards	7	12

Compensation expense is recorded in selling, general and administrative expenses. The Group does not settle stock options granted under share-based payment arrangements in cash.

Restricted (Non-vested) Stock / Units

A summary of non-vested restricted stock awards at September 30, 2023, and changes for the year then ended, is presented below:

	Weighted Average Price	Shares/Units Subject to Restriction
Non-vested, September 30, 2022	$ 58.78	2,949,194
Granted	65.72	2,010,495
Vested	53.55	(1,487,685)
Forfeited	64.14	(664,891)
Non-vested, September 30, 2023	$ 64.90	2,807,113

At September 30, 2023, the Group had approximately $113 million of total unrecognized compensation cost related to non-vested restricted stock arrangements granted which is expected to be recognized over a weighted-average period of 1.9 years.

Performance Share Awards (PSU's)

The following table summarizes the assumptions used in determining the fair value of stock options granted:

	Year Ended September 30, 2023	Year Ended September 30, 2022
Risk-free interest rate	4.04%	0.99%
Expected volatility of the Group's stock	33.50%	30.00%

A summary of the status of the Group's non-vested PSU's at September 30, 2023, and changes for the year then ended, is presented below:

	Weighted Average Price	Shares/Units Subject to PSU
Non-vested, September 30, 2022	$ 60.30	1,143,071
Granted	79.45	344,029
Vested	43.19	(361,117)
Forfeited	71.18	(258,459)
Non-vested, September 30, 2023	$ 71.77	867,524

At September 30, 2023, the Group had approximately $32 million of total unrecognized compensation cost related to non-vested performance-based share unit awards which is expected to be recognized over a weighted-average period of 1.9 years.

Stock Options

The following table summarizes the assumptions used in determining the fair value of stock options granted:

	Year Ended September 30, 2023	Year Ended September 30, 2022
Expected life of option (years)	5.8	6.0
Risk-free interest rate	3.59%	1.35%
Expected volatility of the Group's stock	29.40%	27.80%
Expected dividend yield on the Group's stock	2.10%	1.71%

A summary of stock option activity at September 30, 2023, and changes for the year then ended, is presented below:

	Weighted Average Option Price	Shares Subject to Option	Weighted Average Remaining Contractual Life (years)	Aggregate Intrinsic Value (in millions)
Outstanding, September 30, 2022	$ 42.46	5,683,847		
Granted	66.77	570,140		
Exercised	38.17	(1,068,612)		
Forfeited or expired	59.31	(265,459)		
Outstanding, September 30, 2023	$ 45.44	4,919,916	5.75	$ 56
Exercisable, September 30, 2023	$ 39.11	3,762,092	3.83	$ 53

The following table summarizes additional stock option information:

	Year Ended September 30,	
	2023	2022
Weighted-average grant-date fair value of options granted	$ 18.21	$ 18.59
Intrinsic value of options exercised (in millions)	27	19

At September 30, 2023, the Group had approximately $10 million of total unrecognized compensation cost related to non-vested stock options which is expected to be recognized over a weighted-average period of 1.6 years.

14. EARNINGS PER SHARE

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

	Year Ended September 30,	
	2023	2022
Income Available to Ordinary Shareholders		
Income from continuing operations	$ 1,849	$ 1,532
Income from discontinued operations	—	—
Basic and diluted income available to shareholders	$ 1,849	$ 1,532
Weighted Average Shares Outstanding		
Basic weighted average shares outstanding	684.3	696.1
Effect of dilutive securities:		
Stock options, unvested restricted stock and unvested performance share awards	3.1	3.5
Diluted weighted average shares outstanding	687.4	699.6
Antidilutive Securities		
Stock options and unvested restricted stock	0.2	0.4

15. EQUITY

Authorized Share Capital

As of September 30, 2023, the Group's authorized share capital amounted to $22 million and 40,000 euro, divided into 2 billion ordinary shares with a par value of $0.01 per share, 200 million preferred shares with a par value of $0.01 per share and 40,000 ordinary A shares with a par value of 1.00 euro per share. The authorized share capital includes 40,000 ordinary A shares with a par value of 1.00 euro per share in order to satisfy statutory requirements for the incorporation of all Irish public limited companies. Johnson Controls International plc Parent Company may issue shares subject to the maximum prescribed by its authorized share capital contained in its memorandum of association. In connection with the re-domicile, the Group canceled all the outstanding treasury shares of JCI Inc., including shares held by subsidiaries, with an offsetting reduction in the share premium account.

Called-Up Share Capital

All ordinary shares issued at the effective time of the re-domicile were issued as fully paid-up and non-assessable. As of September 30, 2023, the Group's called-up share capital amounted to $7 million, which is recorded in ordinary shares within the consolidated statement of financial position, comprised of 709,968,796 ordinary shares with a par value of $0.01 per share. As of September 30, 2022, the Group's called-up share capital amounted to $7 million, comprised of 717,726,243 ordinary shares with a par value of $0.01 per share. There were no preferred shares or ordinary A shares issued as of September 30, 2023 and 2022.

Share Premium

Share premium reflects the fair value of consideration received in excess of the par value of shares issued for stock option exercises, vesting of restricted stock units and other issuances of shares and is recorded in share premium within the consolidated statement of financial position. It also includes Company share premium as defined by Irish law of $738 million and $695 million as of September 30, 2023 and 2022, respectively.

Dividends

The authority to declare and pay dividends is vested in the Board of Directors. The timing, declaration and payment of future dividends to holders of the Group's ordinary shares is determined by the Group's Board of Directors and depends upon many factors, including the Group's financial condition and results of operations, the capital requirements of the Group's businesses, industry practice and any other relevant factors.

Under Irish law, dividends may only be paid (and share repurchases and redemptions must generally be funded) out of "distributable reserves." The creation of distributable reserves was accomplished by way of a capital reduction, which the Irish High Court approved on December 18, 2014 and as acquired in conjunction with the Merger.

Share Repurchase Program

As of September 30, 2023, approximately $3.0 billion remained available under the share repurchase program which was approved by the Group's Board of Directors in March 2021. The share repurchase program does not have an expiration date and may be amended or terminated by the Board of Directors at any time without prior notice.

Accumulated Other Comprehensive Income

The following table includes changes in AOCI attributable to Johnson Controls (in millions, net of tax):

	Year Ended September 30,	
	2023	2022
Foreign currency translation adjustments		
Balance at beginning of period	$ (901)	$ (421)
Aggregate adjustment for the period	(69)	(480)
Balance at end of period	(970)	(901)
Realized and unrealized gains (losses) on derivatives		
Balance at beginning of period	(11)	(17)
Current period changes in fair value	19	20
Reclassification to income [(1)]	11	(16)
Net tax impact	(4)	2
Balance at end of period	15	(11)
Pension and postretirement plans		
Balance at beginning of period	1	4
Reclassification to income	(1)	(3)
Other changes	—	—
Net tax impact	—	—
Balance at end of period	—	1
Accumulated other comprehensive loss, end of period	$ (955)	$ (911)

[(1)] Refer to Note 11, "Derivative Instruments and Hedging Activities," of the notes to consolidated financial statements for disclosure of the line items in the consolidated statement of income affected by reclassifications from AOCI into income related to derivatives.

16. RETIREMENT PLANS

Pension Benefits

The Group has non-contributory defined benefit pension plans covering certain U.S. and non-U.S. employees. The benefits provided are primarily based on years of service and average compensation or a monthly retirement benefit amount. Certain of the Group's U.S. pension plans no longer allow new participants to enter the plans and no longer accrue benefits. Funding for U.S. pension plans equals or exceeds the minimum requirements of the Employee Retirement Income Security Act of 1974. Funding for non-U.S. plans observes the local legal and regulatory limits. Also, the Group makes contributions to union-trusteed pension funds for construction and service personnel.

The following table includes information for pension plans with accumulated benefit obligations ("ABO") in excess of plan assets (in millions):

	September 30,	
	2023	2022
Accumulated benefit obligation	$ 1,834	$ 2,004
Fair value of plan assets	1,618	1,720

The following table includes information for pension plans with projected benefit obligations ("PBO") in excess of plan assets (in millions):

	September 30,	
	2023	2022
Projected benefit obligation	$ 1,846	$ 2,013
Fair value of plan assets	1,633	1,729

The Group contributed $55 million to the defined benefit plans in fiscal 2023 and expects to contribute approximately $24 million in cash in fiscal 2024. None of contributions made by the Group were voluntary.

Projected benefit payments from the plans as of September 30, 2023 are estimated as follows (in millions):

2024	$ 277
2025	235
2026	235
2027	233
2028	172
2029 - 2033	1,160

Postretirement Benefits

The Group provides certain health care and life insurance benefits for eligible retirees and their dependents primarily in the U.S. and Canada. Most non-U.S. employees are covered by government sponsored programs. The cost to the Group is not significant.

Eligibility for coverage is based on meeting certain years of service and retirement age qualifications. These benefits may be subject to deductibles, co-payment provisions and other limitations. The Group has reserved the right to modify these benefits.

The health care cost trend assumption does not have a significant effect on the amounts reported.

The following table includes information for postretirement plans with accumulated postretirement benefit obligations ("APBO") in excess of plan assets (in millions):

	September 30,	
	2023	2022
Accumulated postretirement benefit obligation	$ 58	$ 68
Fair value of plan assets	24	28

The Group contributed $2 million to the postretirement benefit plans in fiscal 2023 and expects to contribute approximately $2 million in cash in fiscal 2024.

Projected benefit payments from the plans as of September 30, 2023 are estimated as follows (in millions):

2024	$ 10
2025	10
2026	9
2027	9
2028	7
2029 - 2033	27

Defined Contribution Plans

The Group sponsors various defined contribution savings plans that allow employees to contribute a portion of their pre-tax and/or after-tax income in accordance with plan specified guidelines. Under specified conditions, the Group will contribute to certain savings plans based on predetermined percentages of compensation earned by the employee and/or will match a percentage of the employee contributions up to certain limits. Defined contribution plan contributions charged to expense amounted to $209 million and $196 million during the years ended September 30, 2023 and 2022, respectively.

Multiemployer Benefit Plans

The Group contributes to multiemployer benefit plans based on obligations arising from collective bargaining agreements related to certain of its hourly employees in the U.S. These plans provide retirement benefits to participants based on their service to contributing employers. The benefits are paid from assets held in trust for that purpose. The trustees typically are responsible for determining the level of benefits to be provided to participants as well as for such matters as the investment of the assets and the administration of the plans.

The risks of participating in these multiemployer benefit plans are different from single-employer benefit plans in the following aspects:

- Assets contributed to the multiemployer benefit plan by one employer may be used to provide benefits to employees of other participating employers.

- If a participating employer stops contributing to the multiemployer benefit plan, the unfunded obligations of the plan may be borne by the remaining participating employers.

- If the Group stops participating in some of its multiemployer benefit plans, it may be required to pay those plans an amount based on its allocable share of the underfunded status of the plan, referred to as a withdrawal liability.

The Group participates in approximately 260 multiemployer benefit plans, none of which are individually significant to the Group. The number of employees covered by the Group's multiemployer benefit plans has remained consistent over the past three years, and there have been no significant changes that affect the comparability of fiscal 2023 and 2022 contributions. The Group recognizes expense for the contractually-required contribution for each period. The Group contributed $67 million and $71 million to multiemployer benefit plans during the years ended September 30, 2023 and 2022, respectively.

Based on the most recent information available, the Group believes that the present value of actuarial accrued liabilities in certain of these multiemployer benefit plans may exceed the value of the assets held in trust to pay benefits. Currently, the

Group is not aware of any significant multiemployer benefit plans for which it is probable or reasonably possible that the Group will be obligated to make up any shortfall in funds. Moreover, if the Group were to exit certain markets or otherwise cease making contributions to these funds, the Group could trigger a withdrawal liability. Currently, the Group is not aware of any multiemployer benefit plans for which it is probable or reasonably possible that the Group will have a significant withdrawal liability. Any accrual for a shortfall or withdrawal liability will be recorded when it is probable that a liability exists and it can be reasonably estimated.

Plan Assets

The Group's investment policies employ an approach whereby a mix of equities, fixed income and alternative investments are used to maximize the long-term return of plan assets for a prudent level of risk. The investment portfolio primarily contains a diversified blend of equity and fixed income investments. Equity investments are diversified across U.S. and non-U.S. stocks, as well as growth, value and small to large capitalization. Fixed income investments include corporate and government issues, with short-, mid- and long-term maturities, with a focus on investment grade when purchased and a target duration close to that of the plan liability. Investment and market risks are measured and monitored on an ongoing basis through regular investment portfolio reviews, annual liability measurements and periodic asset/liability studies. The majority of the real estate component of the portfolio is invested in a diversified portfolio of high-quality, operating properties with cash yields greater than the targeted appreciation. Investments in other alternative asset classes, including hedge funds, diversify the expected investment returns relative to the equity and fixed income investments. As a result of the Group's diversification strategies, there are no significant concentrations of risk within the portfolio of investments.

The Group's actual asset allocations are in line with target allocations. The Group rebalances asset allocations as appropriate, in order to stay within a range of allocation for each asset category.

The expected return on plan assets is based on the Group's expectation of the long-term average rate of return of the capital markets in which the plans invest. The average market returns are adjusted, where appropriate, for active asset management returns. The expected return reflects the investment policy target asset mix and considers the historical returns earned for each asset category.

The Group's plan assets at September 30, 2023 and 2022, by asset category, are as follows (in millions):

Asset Category	Total as of September 30, 2023	Fair Value Measurements Using: Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
U.S. Pension				
Cash and Cash Equivalents	$ 61	$ —	$ 61	$ —
Equity Securities				
Large-Cap	60	60	—	—
Small-Cap	65	65	—	—
International - Developed	108	108	—	—
International - Emerging	20	20	—	—
Fixed Income Securities				
Government	225	225	—	—
Corporate/Other	583	583	—	—
Alternative	211	—	211	—
Total Investments in the Fair Value Hierarchy	1,333	$ 1,061	$ 272	$ —
Real Estate Investments Measured at Net Asset Value[(1)]	295			
Due to Broker	(129)			
Total Plan Assets	$ 1,499			
Non-U.S. Pension				
Cash and Cash Equivalents	$ 52	$ 52	$ —	$ —
Equity Securities				
Large-Cap	52	9	43	—
International - Developed	52	12	40	—
International - Emerging	2	—	2	—
Fixed Income Securities				
Government	701	40	661	—
Corporate/Other	415	271	144	—
Hedge Fund	15	—	15	—
Real Estate	9	9	—	—
Total Investments in the Fair Value Hierarchy	1,298	$ 393	$ 905	$ —
Real Estate Investments Measured at Net Asset Value[(1)]	90			
Total Plan Assets	$ 1,388			
Postretirement				
Cash and Cash Equivalents	$ 8	$ 8	$ —	$ —
Equity Securities - Global	71	—	71	—
Total Investments in the Fair Value Hierarchy	79	$ 8	$ 71	$ —
Multi-Credit Strategy Investments Measured at Net Asset Value[(1)]	65			
Total Plan Assets	$ 144			

	Fair Value Measurements Using:			
Asset Category	Total as of September 30, 2022	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
U.S. Pension				
Cash and Cash Equivalents	$ 40	$ —	$ 40	$ —
Equity Securities				
Large-Cap	160	160	—	—
Small-Cap	175	175	—	—
International - Developed	139	139	—	—
International - Emerging	39	39	—	—
Fixed Income Securities				
Government	217	216	1	—
Corporate/Other	804	804	—	—
Total Investments in the Fair Value Hierarchy	1,574	$ 1,533	$ 41	$ —
Real Estate Investments Measured at Net Asset Value[(1)]	322			
Due to Broker	(166)			
Total Plan Assets	$ 1,730			
Non-U.S. Pension				
Cash and Cash Equivalents	$ 150	$ 150	$ —	$ —
Large-Cap	45	8	37	—
International - Developed	43	12	31	—
International - Emerging	3	—	3	—
Fixed Income Securities				
Government	650	50	600	—
Corporate/Other	418	277	141	—
Hedge Fund	18	—	18	—
Real Estate	9	9	—	—
Total Investments in the Fair Value Hierarchy	1,336	$ 506	$ 830	$ —
Real Estate Investments Measured at Net Asset Value[(1)]	97			
Total Plan Assets	$ 1,433			
Postretirement				
Cash and Cash Equivalents	$ 13	$ 13	$ —	$ —
Equity Securities				
Global	66	—	66	—
Total Investments in the Fair Value Hierarchy	79	13	66	—
Multi-Credit Strategy Investments Measured at Net Asset Value[(1)]	65			
Total Plan Assets	$ 144			

[(1)]The fair value of certain real estate and multi-credit strategy investments do not have a readily determinable fair value and require the fund managers to independently arrive at fair value by calculating net asset value ("NAV") per share. In order to calculate NAV per share, the fund managers value the investments using any one, or a combination of, the following methods: independent third party appraisals, discounted cash flow analysis of net cash flows projected to be generated by the investment and recent sales of comparable investments. Assumptions used to revalue the investments are updated every quarter. Due to the fact that the fund managers calculate NAV per share, the Group utilizes a practical expedient for measuring the fair value of its real estate and multi-credit strategy investments, as provided for under ASC 820, "Fair Value Measurement." In applying the practical expedient, the Group is not required to further adjust the NAV provided by the fund manager in order to determine the fair value of its investments as the NAV per share is calculated in a manner consistent with the measurement principles of ASC 946, "Financial Services - Investment Companies," and as of the Group's measurement date. The Group believes this is an appropriate methodology to obtain the fair value of these assets. For the component of the real estate portfolio under development, the investments are carried at cost until they are completed and valued by a third party appraiser. In accordance with ASU No. 2015-07, "Disclosures for Investments in Certain Entities That Calculate Net Asset Value per Share (or Its Equivalent)," investments for which fair value is measured using the net asset value per share practical expedient are disclosed separate from the fair value hierarchy. The fair value amounts presented in these tables are intended to permit reconciliation of total plan assets to the amounts presented in the notes to consolidated financial statements.

The following is a description of the valuation methodologies used for assets measured at fair value. Certain assets are held within commingled funds which are valued at the unitized NAV or percentage of the net asset value as determined by the manager of the fund. These values are based on the fair value of the underlying net assets owned by the fund.

Cash and Cash Equivalents: The fair value of cash and cash equivalents is valued at cost.

Equity Securities: The fair value of equity securities is determined by direct quoted market prices. The underlying holdings are direct quoted market prices on regulated financial exchanges.

Fixed Income Securities: The fair value of fixed income securities is determined by direct or indirect quoted market prices. If indirect quoted market prices are utilized, the value of assets held in separate accounts is not published, but the investment managers report daily the underlying holdings. The underlying holdings are direct quoted market prices on regulated financial exchanges.

Hedge Funds: The fair value of hedge funds is accounted for by the custodian. The custodian obtains valuations from underlying managers based on market quotes for the most liquid assets and alternative methods for assets that do not have sufficient trading activity to derive prices. The Group and custodian review the methods used by the underlying managers to value the assets. The Group believes this is an appropriate methodology to obtain the fair value of these assets.

Real Estate: The fair value of real estate is determined by quoted market prices of the underlying Real Estate Investment Trusts ("REITs"), which are securities traded on an open exchange.

The methods described above may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, while the Group believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

Funded Status

The following table contains the ABO and reconciliations of the changes in the PBO, the changes in plan assets and the funded status (in millions):

	Pension Benefits				Postretirement Benefits	
	U.S. Plans		Non-U.S. Plans			
September 30,	2023	2022	2023	2022	2023	2022
Accumulated Benefit Obligation	$ 1,564	$ 1,822	$ 1,424	$ 1,417	$ 76	$ 89
Change in Projected Benefit Obligation						
Projected benefit obligation at beginning of year	$ 1,822	$ 2,629	$ 1,471	$ 2,625	$ 89	$ 123
Service cost	—	—	16	20	—	1
Interest cost	78	56	68	39	4	2
Plan participant contributions	—	—	3	2	3	3
Actuarial gain	(37)	(587)	(62)	(651)	(7)	(25)
Benefits and settlements paid	(299)	(276)	(126)	(166)	(12)	(14)
Other	—	—	(3)	(3)	—	—
Currency translation adjustment	—	—	106	(395)	—	(1)
Projected benefit obligation at end of year	$ 1,564	$ 1,822	$ 1,473	$ 1,471	$ 77	$ 89
Change in Plan Assets						
Fair value of plan assets at beginning of year	$ 1,730	$ 2,459	$ 1,433	$ 2,344	$ 144	$ 172
Actual return on plan assets	66	(454)	(77)	(459)	7	(20)
Employer and employee contributions	3	1	55	94	5	6
Benefits paid	(85)	(85)	(61)	(74)	(12)	(14)
Settlement payments	(215)	(191)	(65)	(92)	—	—
Other	—	—	(2)	(2)	—	—
Currency translation adjustment	—	—	105	(378)	—	—
Fair value of plan assets at end of year	$ 1,499	$ 1,730	$ 1,388	$ 1,433	$ 144	$ 144
Funded status	$ (65)	$ (92)	$ (85)	$ (38)	$ 67	$ 55
Amounts recognized in the statement of financial position consist of:						
Prepaid benefit cost	$ 1	$ 37	$ 97	$ 151	$ 101	$ 95
Accrued benefit liability	(66)	(129)	(182)	(189)	(34)	(40)
Net amount recognized	$ (65)	$ (92)	$ (85)	$ (38)	$ 67	$ 55
Weighted Average Assumptions [(1)]						
Discount rate [(2)]	5.48 %	5.08 %	4.72 %	4.36 %	5.42 %	4.92 %
Rate of compensation increase	N/A	N/A	2.90 %	3.00 %	N/A	N/A
Interest crediting rate	N/A	N/A	1.63 %	1.69 %	N/A	N/A

[(1)] Plan assets and obligations are determined based on a September 30 measurement date at September 30, 2023 and 2022.

[(2)] The Group considers the expected benefit payments on a plan-by-plan basis when setting assumed discount rates. As a result, the Group uses different discount rates for each plan depending on the plan jurisdiction, the demographics of participants and the expected timing of benefit payments. For the U.S. pension and postretirement plans, the Group uses a discount rate provided by an independent third party calculated based on an appropriate mix of high quality bonds. For the non-U.S. pension and postretirement plans, the Group consistently uses the relevant country specific benchmark indices for determining the various discount rates. The Group has elected to utilize a full yield curve approach in the estimation of service and interest components of net periodic benefit cost (credit) for pension and other postretirement for plans that utilize a yield curve approach. The full yield curve approach applies the specific spot rates along the yield curve used in the determination of the benefit obligation to the relevant projected cash flows.

The fiscal 2023 and fiscal 2022 net actuarial gains related to changes in the projected benefit obligation were primarily the result of the increase in discount rates globally.

Net Periodic Benefit Cost

The following table contains the components of net periodic benefit costs, which are recorded in selling, general and administrative expenses or cost of sales consistent with the related employees' salaries in the consolidated statement of income (in millions):

	Pension Benefits				Postretirement Benefits	
	U.S. Plans		Non-U.S. Plans			
Year ended September 30,	2023	2022	2023	2022	2023	2022
Components of Net Periodic Benefit Cost (Credit):						
Service cost	$ —	$ —	$ 16	$ 20	$ —	$ 1
Interest cost	78	56	68	39	4	2
Expected return on plan assets	(131)	(150)	(77)	(81)	(9)	(9)
Net actuarial (gain) loss	28	16	86	(116)	(5)	4
Settlement loss	1	1	6	5	—	—
Amortization of prior service cost (credit)	—	—	—	—	(4)	(4)
Net periodic benefit cost (credit) included in continuing operations	$ (24)	$ (77)	$ 99	$(133)	$ (14)	$ (6)
Expense Assumptions:						
Discount rate	5.08 %	2.52 %	4.36 %	1.79 %	4.92 %	2.30 %
Expected return on plan assets	8.25 %	7.00 %	5.02 %	3.70 %	6.64 %	5.29 %
Rate of compensation increase	N/A	N/A	3.00 %	2.85 %	N/A	N/A
Interest crediting rate	N/A	N/A	1.69 %	1.44 %	N/A	N/A

17. RESTRUCTURING AND RELATED COSTS

To better align its resources with its growth strategies and reduce the cost structure of its global operations in certain underlying markets, the Group commits to restructuring plans as necessary. Restructuring activities generally result in charges for workforce reductions, plant closures, asset impairments and other related costs which are reported as restructuring and impairment costs in the Group’s consolidated statement of income. The Group expects the restructuring actions to reduce cost of sales and SG&A due to reduced employee-related costs, depreciation and amortization expense.

In the third quarter of fiscal 2023, the Group began developing a restructuring plan with certain actions focused on continued scaling of SG&A expenses to its planned growth. The scope of the plan was substantially finalized in the fourth quarter of fiscal 2023 and certain actions related to this plan were committed and executed during the fourth quarter, primarily related to workforce reductions, and were recorded to restructuring and impairment costs in the consolidated statement of income. Additional restructuring charges are expected in subsequent quarters. Restructuring charges incurred during the first and second quarters of fiscal 2023 were the result of other segment and Corporate-level restructuring plans.

Refer to Note 3, "Assets and Liabilities Held for Sale & Discontinued Operations," Note 7, "Property, Plant and Equipment," and Note 8, "Goodwill and Other Intangible Assets," of the notes to the consolidated financial statements for disclosure of other impairment costs.

The following table summarizes restructuring and related costs (in millions):

	Year Ended September 30, 2023
Building Solutions North America	$ 43
Building Solutions EMEA/LA	97
Building Solutions Asia Pacific	18
Global Products	69
Corporate	49
Total	$ 276

The following table summarizes changes in the restructuring reserve, which is included within current provisions in the consolidated statement of financial position, for new restructuring actions taken in the year ended September 30, 2023 (in millions):

	Employee Severance and Termination Benefits	Long-Lived Asset Impairments	Other	Total
Restructuring and related costs	204	38	34	276
Utilized—cash	(111)	—	(19)	(130)
Utilized—noncash	—	(38)	(3)	(41)
Balance at September 30, 2023	$ 93	$ —	$ 12	$ 105

18. INCOME TAXES

The more significant components of the Group's income tax provision from continuing operations are as follows (in millions):

	2023	2022
Tax expense at Ireland statutory rate of 12.5%	$ 214	$ 214
U.S. state income tax, net of federal benefit	39	(23)
Income subject to the U.S. federal tax rate	56	(95)
Income subject to rates different than the statutory rate	92	125
Reserve and valuation allowance adjustments	(559)	(274)
Intellectual property transactions and adjustments	(176)	—
Restructuring and impairment costs	11	40
Income tax provision (benefit)	$ (323)	$ (13)
Effective tax rate	(19)%	(1)%

For fiscal 2023, the effective tax rate for continuing operations was (19)% and was lower than the statutory tax rate primarily due to the favorable tax impacts of intellectual property tax adjustments, tax reserve adjustments as the result of tax audit resolutions and remeasurements, valuation allowance adjustments and the benefits of continuing global tax planning initiatives, partially offset by the unfavorable impact of impairment and restructuring charges.

For fiscal 2022, the effective tax rate for continuing operations was (1)% and was lower than the statutory tax rate primarily due to favorable impact of tax reserve adjustments as the result of expired statute of limitations for certain tax years and the benefits of continuing global tax planning initiatives, partially offset by the unfavorable impact of impairment and restructuring charges, valuation allowance adjustments, and the establishment of a deferred tax liability on the outside basis difference of the Group's investment in certain subsidiaries as a result of the planned divestitures and tax rate differentials.

Valuation Allowances

The Group reviews the realizability of its deferred tax assets and related valuation allowances on a quarterly basis, or whenever events or changes in circumstances indicate that a review is required. In determining the requirement for a valuation allowance, the historical and projected financial results of the legal entity or consolidated group recording the net deferred tax asset are considered, along with any other positive or negative evidence. Since future financial results may differ from previous estimates, periodic adjustments to the Group's valuation allowances may be necessary.

In fiscal 2023, due to changes in forecasted taxable income, the Group determined that it was more likely than not that certain deferred tax assets of Canada, Mexico, and Spain would be realized. The valuation allowance adjustment resulted in a tax benefit of $121 million.

In fiscal 2022, due to changes in forecasted taxable income, the Group determined that it was more likely than not that certain deferred tax assets of Japan would not be realized. The valuation allowance adjustment resulted in a tax charge of $27 million.

The following table summarizes changes in the valuation allowance (in millions):

	Year Ended September 30,	
	2023	2022
Balance at beginning of period	$ 5,973	$ 5,853
Allowance provision for new operating and other loss carryforwards	573	325
Allowance benefits	(168)	(205)
Balance at end of period	$ 6,378	$ 5,973

Uncertain Tax Positions

The Group is subject to income taxes in the U.S. and numerous non-U.S. jurisdictions. Judgment is required in determining its worldwide provision for income taxes and recording the related assets and liabilities. In the ordinary course of the Group's business, there are many transactions and calculations where the ultimate tax determination is uncertain. The Group is regularly under audit by tax authorities.

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows (in millions):

	2023	2022
Beginning balance, October 1	$ 2,537	$ 2,726
Additions for tax positions related to the current year	72	169
Additions for tax positions of prior years	96	31
Reductions for tax positions of prior years	(27)	(48)
Settlements with taxing authorities	(6)	(7)
Statute closings and audit resolutions	(446)	(334)
Ending balance, September 30	$ 2,226	$ 2,537

The following table summarizes tax effected unrecognized tax benefits that, if recognized, would impact the effective tax rate and the related accrued interest, net of tax benefit (in millions):

	September 30,	
	2023	2022
Tax effected unrecognized tax benefits that, if recognized, would affect the effective tax rate	$ 1,581	$ 1,973
Net accrued interest	335	284

In fiscal 2023, as the result of tax audit resolutions, statute expirations, and remeasurements of ongoing controversy matters in various jurisdictions, the Group adjusted its reserve for uncertain tax positions which resulted in a $438 million net benefit to income tax expense.

In fiscal 2022, the statute of limitations for certain tax years expired, which resulted in a $301 million benefit to income tax expense.

In the U.S., fiscal years 2017 through 2018 are currently under appeal by the Internal Revenue Service (“IRS”) for certain legal entities. Additionally, the Group is currently under exam in the following major non-U.S. jurisdictions for continuing operations:

Tax Jurisdiction	Tax Years Covered
Belgium	2015 - 2022
Germany	2007 - 2021
Luxembourg	2017 - 2018
Mexico	2015 - 2018
United Kingdom	2014 - 2015; 2018; 2020 - 2021

It is reasonably possible that certain tax examinations and/or tax litigation will conclude within the next twelve months, which could have a material impact on tax expense. Based upon the circumstances surrounding these examinations, the impact is not currently quantifiable.

Other Tax Matters

During fiscal 2023 and 2022, the Group incurred charges for restructuring and impairment costs of $1,064 million and $721 million, which generated tax benefits of $122 million and $50 million, respectively.

Impacts of Tax Legislation and Change in Statutory Tax Rates

On September 11, 2023, the Schaffhausen parliament approved a partial revision of the cantonal act on direct taxation: Immediate Minimum Taxation Measure (“IMTM”). The IMTM increases Switzerland’s combined statutory income tax rate to approximately 15%. On November 19, 2023, IMTM was approved in a public referendum in the canton of Schaffhausen, was published in the cantonal official gazette on December 8,2023, and is effective starting January 1, 2024. As a result, in the three months ended December 31, 2023, the Group recorded a noncash discrete net tax benefit of $80 million due to the remeasurement of deferred tax assets and liabilities related to Switzerland and the canton of Schaffhausen.

On August 16, 2022, the U.S. enacted the Inflation Reduction Act (“IRA”) which, among other things, creates a new book minimum tax of at least 15% of consolidated GAAP pre-tax income for corporations with average book income in excess of $1 billion. The book minimum tax is first applicable in fiscal year 2024. The Group does not expect this provision to have a material impact on its effective tax rate.

During the fiscal years ended 2023 and 2022, other tax legislation was adopted in various jurisdictions. These law changes did not have a material impact on the Group's consolidated financial statements.

Selected Income Tax Data

Selected income tax data related to continuing operations were as follows (in millions):

	2023	2022
Components of income (loss) from continuing operations before income taxes:		
U.S.	$ (130)	$ 67
Non-U.S.	1,840	1,643
Income from continuing operations before income taxes	$ 1,710	$ 1,710
Components of the provision (benefit) for income taxes:		
Current		
U.S. federal	$ (165)	$ (219)
U.S. state	105	53
Non-U.S.	413	294
	353	128
Deferred		
U.S. federal	(267)	(175)
U.S. state	(25)	(69)
Non-U.S.	(384)	103
	(676)	(141)
Income tax provision (benefit)	$ (323)	$ (13)
Income taxes paid	$ 430	$ 568

At September 30, 2023 and 2022, the Group recorded within the consolidated statement of financial position in other current assets approximately $65 million and $253 million, respectively, of income tax assets. At September 30, 2023 and 2022, the Group recorded within the consolidated statement of financial position in other current liabilities approximately $249 million and $143 million, respectively, of accrued income tax liabilities.

The Group has not provided U.S. or non-U.S. income taxes on approximately $24.4 billion of outside basis differences of consolidated subsidiaries of Johnson Controls International plc. The Group is indefinitely reinvested in these basis differences. The reduction of the outside basis differences via the sale or liquidation of these subsidiaries and/or distributions could create taxable income. The Group's intent is to reduce the outside basis differences only when it would be tax efficient. Given the numerous ways in which the basis differences may be reduced, it is not practicable to estimate the amount of unrecognized withholding taxes and deferred tax liability on the outside basis differences.

Deferred taxes were classified in the consolidated statement of financial position as follows (in millions):

	September 30,	
	2023	2022
Other noncurrent assets	$ 1,499	$ 954
Noncurrent provisions	(411)	(503)
Net deferred tax asset	$ 1,088	$ 451

Temporary differences and carryforwards which gave rise to deferred tax assets and liabilities included (in millions):

	September 30, 2023	September 30, 2022
Deferred tax assets		
Accrued expenses and reserves	$ 507	$ 376
Employee and retiree benefits	71	78
Property, plant and equipment	629	444
Net operating loss and other credit carryforwards	6,748	6,488
Research and development	171	52
Operating lease liabilities	348	309
Other, net	38	58
	8,512	7,805
Valuation allowances	(6,378)	(5,973)
	2,134	1,832
Deferred tax liabilities		
Subsidiaries, joint ventures and partnerships	446	338
Intangible assets	252	734
Operating lease right-of-use assets	348	309
	1,046	1,381
Net deferred tax asset	$ 1,088	$ 451

At September 30, 2023, the Group had available net operating loss carryforwards of approximately $24.4 billion, of which $14.1 billion will expire at various dates between 2024 and 2043, and the remainder has an indefinite carryforward period. The Group had available U.S. foreign tax credit carryforwards at September 30, 2023 of $35 million which will expire in 2029. The valuation allowance, generally, is for loss and credit carryforwards for which realization is uncertain because it is unlikely that the losses and/or credits will be realized given the lack of sustained profitability and/or limited carryforward periods in certain countries.

Deferred taxation activity for fiscal 2023 is as follows:

At September 30, 2022	$ 451
Benefit, net	676
Acquisitions	(27)
Currency translation and other	(12)
At September 30, 2023	$ 1,088

19. SEGMENT INFORMATION

ASC 280, "Segment Reporting," establishes the standards for reporting information about segments in financial statements. In applying the criteria set forth in ASC 280, the Group has determined that it has four reportable segments for financial reporting purposes.

The Group conducts its business through four business segments:

- *Building Solutions North America* which operates in the United States and Canada;
- *Building Solutions EMEA/LA* which operates in Europe, the Middle East, Africa and Latin America;
- *Building Solutions Asia Pacific* which operates in Asia Pacific; and
- *Global Products* which operates worldwide and includes the Johnson Controls-Hitachi joint venture.

The Building Solutions segments:

- Design, sell, install and service HVAC, controls, building management, refrigeration, integrated electronic security and integrated fire-detection and suppression systems; and
- Provide energy-efficiency solutions and technical services, including data-driven "smart building" solutions as well as inspection, scheduled maintenance, and repair and replacement of mechanical and controls systems.

The Global Products segment designs, manufactures and sells:

- HVAC equipment, controls software and software services for residential and commercial applications;
- Refrigeration equipment and controls;
- Fire protection and suppression; and
- Security products, including intrusion security, anti-theft devices, access control, and video surveillance and management systems.

The Group's segments provide products and services to commercial, institutional, industrial, data center, governmental and residential customers.

Management evaluates the performance of its business segments primarily on segment earnings before interest, taxes and amortization ("EBITA"), which represents income from continuing operations before income taxes and noncontrolling interests, excluding general corporate expenses, intangible asset amortization, net financing charges, restructuring and impairment costs, and net mark-to-market adjustments related to pension and postretirement plans and restricted asbestos investments.

Financial information relating to the Group's reportable segments is as follows (in millions):

	Year Ended September 30,	
	2023	2022
Net Sales		
Building Solutions North America	$ 10,330	$ 9,367
Building Solutions EMEA/LA	4,096	3,845
Building Solutions Asia Pacific	2,746	2,714
Global Products	9,621	9,373
Total net sales	$ 26,793	$ 25,299

	Year Ended September 30,	
	2023	2022
Segment EBITA [1]		
Building Solutions North America	$ 1,394	$ 1,122
Building Solutions EMEA/LA	316	358
Building Solutions Asia Pacific	343	332
Global Products	1,965	1,594
Total segment EBITA	4,018	3,406
Amortization of intangible assets	(439)	(427)
Corporate expenses	(432)	(369)
Net financing charges	(281)	(213)
Restructuring and impairment costs	(1,064)	(721)
Net mark-to-market adjustments	(92)	34
Income before income taxes	$ 1,710	$ 1,710

	September 30, 2023	September 30, 2022
Assets [(2)]		
Building Solutions North America	$ 15,603	$ 15,226
Building Solutions EMEA/LA	5,202	4,991
Building Solutions Asia Pacific	2,645	2,474
Global Products	15,406	15,185
	38,856	37,876
Assets held for sale	—	66
Unallocated	3,386	4,216
Total	$ 42,242	$ 42,158

	Year Ended September 30, 2023	Year Ended September 30, 2022
Depreciation/Amortization		
Building Solutions North America	$ 225	$ 213
Building Solutions EMEA/LA	101	96
Building Solutions Asia Pacific	23	21
Global Products	454	461
	803	791
Corporate	45	39
Total	$ 848	$ 830

	Year Ended September 30, 2023	Year Ended September 30, 2022
Capital Expenditures		
Building Solutions North America	$ 104	$ 141
Building Solutions EMEA/LA	119	119
Building Solutions Asia Pacific	33	22
Global Products	233	257
	489	539
Corporate	50	53
Total	$ 539	$ 592

(1) For the years ended September 30, 2023 and 2022, segment EBITA includes $262 million and $240 million, respectively, of equity income for the Global Products segment. Equity income for other segments is immaterial.

(2) Building Solutions EMEA/LA assets as of September 30, 2023 and 2022 include $130 million and $115 million, respectively, of investments in partially-owned affiliates. Global Products assets as of September 30, 2023 and 2022 include $905 million and $834 million, respectively, of investments in partially-owned affiliates. Investments in partially-owned affiliates for other segments are immaterial.

In fiscal 2023 and 2022, no customer exceeded 10% of consolidated net sales.

Geographic Segments

Financial information relating to the Group's operations by geographic area is as follows (in millions):

	Year Ended September 30,	
	2023	2022
Net Sales		
United States	$ 13,989	$ 12,864
Europe	4,882	4,186
Asia Pacific	5,610	5,791
Other Non-U.S.	2,312	2,458
Total	$ 26,793	$ 25,299
Long-Lived Assets (Year-end)		
United States	$ 1,594	$ 1,582
Europe	514	462
Asia Pacific	630	658
Other Non-U.S.	398	429
Total	$ 3,136	$ 3,131

Net sales attributed to geographic locations are based on the location of where the sale originated. Long-lived assets by geographic location consist of net property, plant and equipment.

20. GUARANTEES

Certain of the Group's subsidiaries at the business segment level have guaranteed the performance of third-parties and provided financial guarantees for uncompleted work and financial commitments. The terms of these guarantees vary with end dates ranging from the current fiscal year through the completion of such transactions and would typically be triggered in the event of nonperformance. Performance under the guarantees, if required, would not have a material effect on the Group's financial position, results of operations or cash flows.

The Group offers warranties to its customers depending upon the specific product and terms of the customer purchase agreement. A typical warranty program requires that the Group replace defective products within a specified time period from the date of sale.

The changes in the carrying amount of the Group's total product warranty liability were as follows (in millions).

	Year Ended September 30,	
	2023	2022
Balance at beginning of period	$ 180	$ 192
Accruals for warranties issued during the period	134	119
Settlements made (in cash or in kind) during the period	(112)	(114)
Changes in estimates to pre-existing warranties	1	(6)
Accruals from acquisitions and divestitures	1	—
Currency translation	(1)	(11)
Balance at end of period	$ 203	$ 180

21. COMMITMENTS AND CONTINGENCIES

Environmental Matters

The Group accrues for potential environmental liabilities when it is probable a liability has been incurred and the amount of the liability is reasonably estimable. The following table presents the location and amount of reserves for environmental liabilities in the Group's consolidated statement of financial position (in millions):

	September 30, 2023	September 30, 2022
Current provisions	$ 31	$ 66
Noncurrent provisions	211	220
Total reserves for environmental liabilities	$ 242	$ 286

The Group periodically examines whether the contingent liabilities related to the environmental matters described below are probable and reasonably estimable based on experience and ongoing developments in those matters, including continued study and analysis of ongoing remediation obligations. The Group expects that it will pay the amounts recorded over an estimated period of up to 20 years. The Group is not able to estimate a possible loss or range of loss, if any, in excess of the established accruals for environmental liabilities at this time.

A substantial portion of the Group's environmental reserves relates to ongoing long-term remediation efforts to address contamination relating to fire-fighting foams containing perfluorooctane sulfonate ("PFOS"), perfluorooctanoic acid ("PFOA"), and/or other per- and poly-fluoroalkyl substances ("PFAS") at or near the Tyco Fire Products L.P. (“Tyco Fire Products”) Fire Technology Center ("FTC") located in Marinette, Wisconsin and surrounding areas in the City of Marinette and Town of Peshtigo, Wisconsin, as well as the continued remediation of PFAS, arsenic and other contaminants at the Tyco Fire Products Stanton Street manufacturing facility also located in Marinette, Wisconsin (the “Stanton Street Facility”).

The use of fire-fighting foams at the FTC was primarily for training and testing purposes to ensure that such products sold by the Group’s affiliates, Chemguard, Inc. ("Chemguard") and Tyco Fire Products, were effective at suppressing high intensity fires that may occur at military installations, airports or elsewhere. On July 18, 2023, Tyco Fire Products announced that it plans to discontinue the production and sale of fluorinated firefighting foams by June 2024, including AFFF products, and will transition to non-fluorinated foam alternatives.

Tyco Fire Products has been engaged in remediation activities at the Stanton Street Facility since 1990. Its corporate predecessor, Ansul Incorporated (“Ansul”), manufactured arsenic-based agricultural herbicides at the Stanton Street Facility, which resulted in significant arsenic contamination of soil and groundwater on the site and in parts of the adjoining Menominee River. In 2009, Ansul entered into an Administrative Consent Order (the "Consent Order") with the U.S. Environmental Protection Agency (“EPA”) to address the presence of arsenic at the site. Under this agreement, Tyco Fire Products’ principal obligations are to contain the arsenic contamination on the site, pump and treat on-site groundwater, dredge, treat and properly dispose of contaminated sediments in the adjoining river areas, and monitor contamination levels on an ongoing basis. Activities completed under the Consent Order since 2009 include the installation of a subsurface barrier wall around the facility to contain contaminated groundwater, the installation and ongoing operation and monitoring of a groundwater extraction and treatment system and the dredging and offsite disposal of treated river sediment. In addition to ongoing remediation activities, the Group is also working with the Wisconsin Department of Natural Resources ("WDNR") to investigate and remediate the presence of PFAS at or near the Stanton Street Facility as part of the evaluation and remediation of PFAS in the Marinette region.

Tyco Fire Products is operating and monitoring at the FTC a Groundwater Extraction and Treatment System ("GETS"), a permanent groundwater remediation system that extracts groundwater containing PFAS, treats it using advanced filtration systems, and returns the treated water to the environment. Tyco Fire Products has also completed the removal and disposal of PFAS-affected soil from the FTC. The Company's reserves for continued remediation of the FTC, the Stanton Street Facility and surrounding areas in Marinette and Peshtigo are based on estimates of costs associated with the long-term remediation actions, including the continued operation of the GETS, the implementation of long-term drinking water solutions for the area impacted by groundwater migrating from the FTC, continued monitoring and testing of groundwater monitoring wells, the operation and wind-down of other legacy remediation and treatment systems and the completion of ongoing investigation obligations.

PFOA, PFOS, and other PFAS compounds are being studied by EPA and other environmental and health agencies and researchers. In March 2021, EPA published its final determination to regulate PFOS and PFOA in drinking water. In March 2023, EPA announced a proposed National Primary Drinking Water Regulation (“NPDWR”) for six PFAS compounds including PFOA and PFOS. The NPDWR proposes establishing legally enforceable levels, called Maximum Contaminant Levels, of 4.0 parts per trillion for each of PFOA and PFOS. The EPA has stated that it intends to propose two rules relating to PFAS under the Resource Conservation and Recovery Act (“RCRA”): one rule would list four PFAS (PFOA, PFOS, PFBS, and GenX) as “hazardous constituents,” and a second rule would clarify that hazardous constituents are subject to RCRA's corrective action program.

In August 2022, EPA published a proposed rule that would designate PFOA and PFOS as “hazardous substances” under Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"). In April 2023, EPA issued an Advanced Notice of Proposed Rulemaking ("ANPR") seeking input on whether it should expand the proposed rule to designate as "hazardous substances" under CERCLA: (1) seven additional PFAS; (2) the precursors to PFOA, PFOS, and the seven additional PFAS; or (3) entire categories of PFAS. The EPA indicated that it anticipates finalizing the regulation by March 2024.

It is not possible to estimate the Company’s ultimate level of liability at many remediation sites due to the large number of other parties that may be involved, the complexity of determining the relative liability among those parties, the financial viability of other potentially responsible parties and third-party indemnitors, the uncertainty as to the nature and scope of the investigations and remediation to be conducted, changes in environmental regulations, changes in permissible levels of specific compounds in soil, groundwater and drinking water sources, or changes in enforcement theories and policies, including efforts to recover natural resource damages, the uncertainty in the application of law and risk assessment, the various choices and costs associated with diverse technologies that may be used in corrective actions at the sites, and the often quite lengthy periods over which eventual remediation may occur. It is possible that technological, regulatory or enforcement developments, the results of additional environmental studies or other factors could change the Company's expectations with respect to future charges and cash outlays, and such changes could be material to the Company's future results of operations, financial condition or cash flows. Nevertheless, the Company does not currently believe that any claims, penalties or costs in addition to the amounts accrued will have a material adverse effect on the Company’s financial position, results of operations or cash flows.

In addition, the Group has identified asset retirement obligations for environmental matters that are expected to be addressed at the retirement, disposal, removal or abandonment of existing owned facilities. Conditional asset retirement obligations were $13 million and $17 million at September 30, 2023 and 2022, respectively.

FTC-Related Matters

On June 21, 2019, the WDNR announced that it had received from the Wisconsin Department of Health Services (“WDHS”) a recommendation for groundwater quality standards as to, among other compounds, PFOA and PFOS. The WDHS recommended a groundwater enforcement standard for PFOA and PFOS of 20 parts per trillion. Although Wisconsin approved final regulatory standards for PFOA and PFOS in drinking water and surface water in February 2022, the Wisconsin Natural Resources Board did not approve WDNR's proposed standards for PFOA and PFOS in groundwater. The WDNR initiated a rulemaking proceeding that would establish groundwater quality standards for PFOA, PFOS, perfluorobutane sulfonic acid and its potassium salt (“PFBS”) and hexafluoropropylene oxide dimer acid and its ammonium salt (“HFPO-DA”). Pursuant to state law, the WDNR has stopped work on the proposed rule and notified the state legislature that, following economic analysis, the proposed costs would exceed statutory thresholds. As a result, the state legislature is required to authorize the WDNR to allow the rulemaking to continue.

In July 2019, the Company received a letter from the WDNR directing the expansion of the evaluation of PFAS in the Marinette region to include (1) biosolids sludge produced by the City of Marinette Waste Water Treatment Plant and spread on certain fields in the area and (2) the Menominee and Peshtigo Rivers. On October 16, 2019, the WDNR issued a “Notice of Noncompliance” to Tyco Fire Products and Johnson Controls, Inc. regarding the WDNR’s July 2019 letter. The WDNR issued a further letter regarding the issue on November 4, 2019. In February 2020, the WDNR sent a letter to Tyco Fire Products and Johnson Controls, Inc. further directing the expansion of the evaluation of PFAS in the Marinette region to include investigation activities south and west of the previously defined FTC study area. In September 2021, the WDNR sent an additional “Notice of Noncompliance” to Tyco Fire Products and Johnson Controls, Inc. concerning land-applied biosolids, which reviewed and responded to the Company’s biosolids investigation conducted to that date. On April 10, 2023, the WDNR issued a third “Notice of Noncompliance” to Tyco Fire Products and Johnson Controls, Inc. concerning land-applied biosolids in the Marinette region. Tyco Fire Products and Johnson Controls, Inc. believe that they have complied with all applicable environmental laws and regulations. The Company cannot predict what regulatory or enforcement actions, if any, might result from the WDNR’s actions, or the consequences of any such actions, including the potential assessment of penalties.

In March 2022, the Wisconsin Department of Justice ("WDOJ") filed a civil enforcement action against Johnson Controls Inc. and Tyco Fire Products in Wisconsin state court relating to environmental matters at the FTC (*State of Wisconsin v. Tyco Fire Products, LP and Johnson Controls, Inc.*, Case No. 22-CX-1 (filed March 14, 2022 in Circuit Court in Marinette County, Wisconsin)). The WDOJ alleges that the Company failed to timely report the presence of PFAS chemicals at the FTC, and that the Company has not sufficiently investigated or remediated PFAS at or near the FTC. The WDOJ seeks monetary penalties and an injunction ordering these two subsidiaries to complete a site investigation and cleanup of PFAS contamination in accordance with the WDNR's requests. The parties are proceeding with fact discovery and the court has set a trial date of December 3, 2024.

In October 2022, the Town of Peshtigo filed a tort action in Wisconsin state court against Tyco Fire Products, Johnson Controls Inc., Chemguard, Inc., and ChemDesign, Inc. relating to environmental matters at the FTC (*Town of Peshtigo v. Tyco Fire Products L.P. et al.*, Case No. 2022CV000234 (filed October 18, 2022 in Circuit Court in Marinette County, Wisconsin)). The Town alleges that use of AFFF products at the FTC caused contamination of water supplies in Peshtigo. The Town seeks monetary penalties and an injunction ordering abatement of PFAS contamination in Peshtigo. The case has been removed to federal court and transferred to a multi-district litigation ("MDL") before the United States District Court for the District of South Carolina.

In November 2022, individuals filed six actions in Dane County, Wisconsin alleging personal injury and/or property damage against Tyco Fire Products, Johnson Controls Inc., Chemguard, Inc., and other unaffiliated defendants related to environmental matters at the FTC. Plaintiffs allege that use of AFFF products at the FTC and activities by third parties unrelated to the Company contaminated nearby drinking water sources, surface waters, and other natural resources and properties, including their personal properties. The individuals seek monetary damages for their personal injury and/or property damage. These lawsuits have been transferred to the MDL. Subsequently, several additional plaintiffs have direct-filed in the MDL complaints with similar allegations.

These FTC-related lawsuits are presently at the beginning stages of litigation. The Company is vigorously defending each of these cases and believes that it has meritorious defenses, but the it is presently unable to predict the duration, scope, or outcome of these actions.

Aqueous Film-Forming Foam ("AFFF") Matters

AFFF Litigation

Two of the Group's subsidiaries, Chemguard and Tyco Fire Products, have been named, along with other defendant manufacturers, suppliers and distributors, and, in some cases, certain subsidiaries of the Group affiliated with Chemguard and Tyco Fire Products, in a number of class action and other lawsuits relating to the use of fire-fighting foam products by the U.S. Department of Defense (the "DOD") and others for fire suppression purposes and related training exercises. Plaintiffs generally allege that the firefighting foam products contain or break down into the chemicals PFOS and PFOA and/or other PFAS compounds and that the use of these products by others at various airbases, airports and other sites resulted in the release of these chemicals into the environment and ultimately into communities' drinking water supplies neighboring those airports, airbases and other sites. Plaintiffs generally seek compensatory damages, including damages for alleged personal injuries, medical monitoring, diminution in property values, investigation and remediation costs, and natural resources damages, and also seek punitive damages and injunctive relief to address remediation of the alleged contamination.

In September 2018, Tyco Fire Products and Chemguard filed a Petition for Multidistrict Litigation with the United States Judicial Panel on Multidistrict Litigation ("JPML") seeking to consolidate all existing and future federal cases into one jurisdiction. On December 7, 2018, the JPML issued an order transferring various AFFF cases to the MDL. Additional cases have been identified for transfer to or are being directly filed in the MDL.

AFFF Putative Class Actions

Chemguard and Tyco Fire Products are named in 44 pending putative class actions in federal courts originating from 16 states and territories. All of these cases have been direct-filed in or transferred to the MDL. Tyco Fire Products was also recently named in a class action in British Columbia, Canada.

AFFF Individual or Mass Actions

There are more than 6,000 individual or "mass" actions pending that were filed in state or federal courts originating from 52 states and territories against Chemguard and Tyco Fire Products and other defendants in which the plaintiffs generally seek compensatory damages, including damages for alleged personal injuries, medical monitoring, and alleged diminution in property values. The cases involve plaintiffs from various states including approximately 7,000 plaintiffs in Colorado and more than 6,000 other plaintiffs. The vast majority of these matters have been tagged for transfer to, transferred to, or directly-filed in the MDL, and it is anticipated that several newly-filed state court actions will be similarly tagged and transferred. There are several matters that are proceeding in state courts, including actions in Arizona, Illinois and Virginia.

Tyco and Chemguard are also periodically notified by other individuals that they may assert claims regarding PFOS and/or PFOA contamination allegedly resulting from the use of AFFF.

AFFF Municipal and Water Provider Cases

Chemguard and Tyco Fire Products have been named as defendants in more than 770 cases in federal and state courts involving municipal or water provider plaintiffs that were filed in state or federal courts originating from 35 states and territories. The vast majority of these cases have been transferred to or were directly filed in the MDL, and it is anticipated that the remaining cases will be transferred to the MDL. These municipal and water provider plaintiffs generally allege that the use of the defendants' fire-fighting foam products at fire training academies, municipal airports, Air National Guard bases, or Navy or Air Force bases released PFOS and PFOA into public water supply wells and/or other public property, allegedly requiring remediation. The MDL court set the first case for trial on June 5, 2023 (*City of Stuart (Florida) v. 3M Co. et al.*). On April 26, 2023, the parties entered a stipulation dismissing Chemguard with prejudice from the City of Stuart case, and on May 4, 2023 the parties entered into a stipulation dismissing Tyco with prejudice from the City of Stuart case. On June 5, 2023, the MDL court continued the trial date for the City of Stuart case, and the parties remaining in that case later reached settlement. The parties in the MDL designated four additional plaintiffs as water provider bellwether cases and conducted initial discovery into those cases. On December 19, 2023, the MDL court selected two of those cases to proceed into additional discovery. The parties have also identified 25 personal injury bellwether cases, which have entered into the first phase of bellwether discovery.

Tyco and Chemguard are also periodically notified by other municipal entities that those entities may assert claims regarding PFOS and/or PFOA contamination allegedly resulting from the use of AFFF.

AFFF State or U.S. Territory Attorneys General Litigation

In June 2018, the State of New York filed a lawsuit in New York state court (*State of New York v. The 3M Company et al* No. 904029-18 (N.Y. Sup. Ct., Albany County)) against a number of manufacturers, including affiliates of the Group, with respect to alleged PFOS and PFOA contamination purportedly resulting from firefighting foams used at locations across New York, including Stewart Air National Guard Base in Newburgh and Gabreski Air National Guard Base in Southampton, Plattsburgh Air Force Base in Plattsburgh, Griffiss Air Force Base in Rome, and unspecified "other" sites throughout the State. The lawsuit seeks to recover costs and natural resource damages associated with contamination at these sites. This suit has been removed to the United States District Court for the Northern District of New York and transferred to the MDL.

In February 2019, the State of New York filed a second lawsuit in New York state court (*State of New York v. The 3M Company et al* (N.Y. Sup. Ct., Albany County)), against a number of manufacturers, including affiliates of the Group, with respect to alleged PFOS and PFOA contamination purportedly resulting from firefighting foams used at additional locations across New York. This suit has been removed to the United States District Court for the Northern District of New York and transferred to the MDL. In July 2019, the State of New York filed a third lawsuit in New York state court (*State of New York v. The 3M Company et al* (N.Y. Sup. Ct., Albany County)), against a number of manufacturers, including affiliates of the Group, with respect to alleged PFOS and PFOA contamination purportedly resulting from firefighting foams used at further additional locations across New York. This suit has been removed to the United States District Court for the Northern District of New York and transferred to the MDL. In November 2019, the State of New York filed a fourth lawsuit in New York state court (*State of New York v. The 3M Company et al* (N.Y. Sup. Ct., Albany County)), against a number of manufacturers, including affiliates of the Group, with respect to alleged PFOS and PFOA contamination purportedly resulting from firefighting foams used at further additional locations across New York. This suit has been removed to federal court and transferred to the MDL.

In April 2021, the State of Alaska filed a lawsuit in the superior court of the State of Alaska against a number of manufacturers and other defendants, including affiliates of the Group, with respect to PFOS and PFOA damage of the State's land and natural resources allegedly resulting from the use of firefighting foams at various locations throughout the State. The State's case has been removed to federal court and transferred to the MDL. The State of Alaska has also named a number of manufacturers and other defendants, including affiliates of the Group, as third-party defendants in two cases brought by individuals against the State. These two cases have also been transferred to the MDL.

In early November 2021, the Attorney General of the State of North Carolina filed four individual lawsuits in the superior courts of the State of North Carolina against a number of manufacturers and other defendants, including affiliates of the Group, with respect to PFOS and PFOA damage of the State's land, natural resources, and property allegedly resulting from the use of firefighting foams at four separate locations throughout the State. These four cases have been removed to federal court and transferred to the MDL. In October 2022, the Attorney General filed two similar lawsuits in the superior courts of the State of North Carolina regarding alleged PFAS damages at two additional locations. These two cases have also been removed to federal court and transferred to the MDL.

In addition, 31 other states and territories have filed 33 lawsuits against a number of manufacturers and other defendants, including affiliates of the Company, with respect to PFAS damage of each of those State's environmental and natural resources allegedly resulting from the manufacture, storage, sale, distribution, marketing, and use of PFAS-containing AFFF within each respective State. The states and territories are: Arkansas, Arizona, California, Colorado, Connecticut, Delaware, the District of Columbia, Florida, Hawaii, Illinois, Kentucky, Massachusetts, Maryland, Maine, Michigan, Mississippi, New Hampshire, New Jersey, New Mexico, Ohio, Oregon, Rhode Island, South Carolina, Tennessee, Texas, Vermont, Washington, Wisconsin, Guam, the Northern Mariana Islands, and Puerto Rico. All of these complaints, other than Hawaii and Connecticut, have been removed to federal court and transferred to the MDL. The Hawaii complaint has been removed to federal court and it is anticipated that it will be transferred to the MDL. It is anticipated that the Connecticut complaint will be removed to federal court and transferred to the MDL.

Other AFFF Related Matters

In March 2020, the Kalispel Tribe of Indians (a federally recognized Tribe) and two tribal corporations filed a lawsuit in the United States District Court for the Eastern District of Washington against a number of manufacturers, including affiliates of the Group, and the United States with respect to PFAS contamination allegedly resulting from the use and disposal of AFFF by the United States Air Force at and around Fairchild Air Force Base in eastern Washington. This case has been transferred to the MDL.

In October 2022, the Red Cliff Band of Lake Superior Chippewa Indians (a federally recognized tribe) filed a lawsuit in the United States District Court for the Western District of Wisconsin against a number of manufacturers, including affiliates of the Group, with respect to PFAS contamination allegedly resulting from the use and disposal of AFFF at Duluth Air National Guard Base in Duluth, Minnesota. This complaint has been transferred to the MDL.

In July 2023, the Fond du Lac Band of Lake Superior Chippewa (a federally recognized tribe) direct-filed a lawsuit in the MDL against a number of manufacturers, including affiliates of the Group, with respect to PFAS contamination allegedly resulting from the use and disposal of AFFF at Duluth Air National Guard Base in Duluth, Minnesota.

The Group is vigorously defending all of the above AFFF matters and believes that it has meritorious defenses to class certification and the claims asserted, including statutes of limitations, the government contractor defense, various medical and scientific defenses, and other factual and legal defenses. The government contractor defense is a form of immunity available to government contractors that produced products for the United States government pursuant to the government's specifications. In September 2022, the AFFF MDL Court declined to grant summary judgment on the government contractor defense, ruling that various factual issues relevant to the defense must be decided by a jury rather than the Court. The Group has a historical general liability insurance program and is pursuing coverage under the program from various insurers through insurance claims discussions and litigation pending in a state court in Wisconsin and a federal district court in South Carolina. The insurance litigation involves numerous factual and legal issues and remains at a relatively early stage. There are numerous factual and legal issues to be resolved in connection with these claims. The Group is presently unable to predict the outcome or ultimate financial exposure, if any, represented by these matters, and there can be no assurance that any such exposure will not be material.

Asbestos Matters

The Group and certain of its subsidiaries, along with numerous other third parties, are named as defendants in personal injury lawsuits based on alleged exposure to asbestos containing materials. These cases have typically involved product liability claims based primarily on allegations of manufacture, sale or distribution of industrial products that either contained asbestos or were used with asbestos containing components.

The following table presents the location and amount of asbestos-related assets and provisions in the Group's consolidated statement of financial position (in millions):

	September 30, 2023	September 30, 2022
Current provisions	$ 58	$ 58
Noncurrent provisions	364	380
Total asbestos-related provisions	422	438
Other current assets	28	37
Other noncurrent assets	273	263
Total asbestos-related assets	301	300
Net asbestos-related provisions	$ 121	$ 138

The following table presents the components of asbestos-related assets (in millions):

	September 30, 2023	September 30, 2022
Restricted		
Cash	$ 20	$ 6
Investments	231	239
Total restricted assets	251	245
Insurance receivables for asbestos-related provisions	50	55
Total asbestos-related assets	$ 301	$ 300

The amounts recorded by the Group for asbestos-related provisions and insurance-related assets are based on the Group's strategies for resolving its asbestos claims, currently available information, and a number of estimates and assumptions. Key variables and assumptions include the number and type of new claims that are filed each year, the average cost of resolution of claims, the identity of defendants, the resolution of coverage issues with insurance carriers, amount of insurance, and the solvency risk with respect to the Group's insurance carriers. Many of these factors are closely linked, such that a change in one variable or assumption may impact one or more of the others, and no single variable or assumption predominately influences the determination of the Group's asbestos-related provisions and insurance-related assets. Furthermore, predictions with respect to these variables are subject to greater uncertainty in the later portion of the projection period. Other factors that may affect the Group's liability and cash payments for asbestos-related matters include uncertainties surrounding the litigation process from jurisdiction to jurisdiction and from case to case, reforms of state or federal tort legislation and the applicability of insurance policies among subsidiaries. As a result, actual provisions or insurance recoveries could be significantly higher or lower than those recorded if assumptions used in the Group's calculations vary significantly from actual results.

Self-Insured Liabilities

The Group records provisions for its workers' compensation, product, general and auto liabilities. The determination of these provisions and related expenses is dependent on claims experience. For most of these provisions, claims incurred but not yet reported are estimated by utilizing actuarial valuations based upon historical claims experience. The Group maintains captive insurance companies to manage a portion of its insurable provisions.

The following table presents the location and amount of self-insured provisions in the Group's consolidated statement of financial position (in millions):

	September 30, 2023	September 30, 2022
Current provisions	$ 86	$ 89
Accrued compensation and benefits	21	22
Noncurrent provisions	226	230
Total self-insured liabilities	$ 333	$ 341

The following table presents the location and amount of insurable receivables in the Group's consolidated statement of financial position (in millions):

	September 30, 2023	September 30, 2022
Other current assets	$ 6	$ 10
Other noncurrent assets	14	20
Total insurance receivables	$ 20	$ 30

Other Matters

The Group is involved in various lawsuits, claims and proceedings incident to the operation of its businesses, including those pertaining to product liability, environmental, safety and health, intellectual property, employment, commercial and contractual matters, and various other casualty matters. Although the outcome of litigation cannot be predicted with certainty and some lawsuits, claims or proceedings may be disposed of unfavorably to the Group, it is management's opinion that none of these will have a material adverse effect on the Group's financial position, results of operations or cash flows. Costs related to such matters were not material to the periods presented.

22. SUBSEQUENT EVENTS

During the weekend of September 23, 2023, the Group experienced a cybersecurity incident impacting its internal information technology ("IT") infrastructure and applications. The incident was detected shortly after receiving reports of outages to certain of the Group's systems. Promptly after detecting the issue, the Group implemented its incident management and response plan and business continuity plans, including implementing remediation measures to mitigate the impact of the incident and restore affected systems and functions. The Group also engaged leading cybersecurity experts and other specialized consultants to assist in its investigation and remediation of the incident, as well as the restoration of impacted applications and systems. The cybersecurity incident consisted of unauthorized access, data exfiltration and deployment of ransomware by a third party to a portion of the Group's internal IT infrastructure. The incident caused disruptions and limitation of access to portions of the Group's business applications supporting aspects of the Group's operations and corporate functions.

Lost and deferred revenues and expenses related to the cybersecurity incident had an immaterial impact on fiscal 2023 net income. During the first quarter of fiscal 2024, expenses have been and will continue to be incurred, primarily related to third-party expenditures, including IT recovery and forensic experts and others performing professional services to investigate and remediate the incident, as well as incremental operating expenses incurred from the resulting disruption to the Group's business operations. The overall impact in fiscal 2024 is not expected to be material to net income, net of insurance recoveries, or cash flows from continuing operations; however, the timing of recognizing the insurance recoveries may differ from the timing of recognizing the associated expenses.

23. SUPPLEMENTAL BALANCE SHEET INFORMATION

As of September 30, 2023 and 2022, other current assets were comprised of (in millions):

	September 30, 2023	September 30, 2022
Prepayments	$ 198	$ 182
Non-trade receivables	338	341
Costs to obtain or fulfill a contract (Note 4)	156	139
Income tax asset (Note 18)	65	253
Other	363	347
Other current assets	$ 1,120	$ 1,262

As of September 30, 2023 and 2022, other noncurrent assets were comprised of (in millions):

	September 30, 2023	September 30, 2022
Deferred tax assets and uncertain tax positions (Note 18)	$ 1,933	$ 1,358
Operating lease right-of-use asset (Note 9)	1,389	1,271
Financial assets (Note 24)	332	313
Costs to obtain or fulfill a contract (Note 4)	224	174
Prepaid retirement benefit (Note 16)	199	283
Other	412	475
Other noncurrent assets	$ 4,489	$ 3,874

As of September 30, 2023 and 2022, other current liabilities were comprised of (in millions):

	September 30, 2023	September 30, 2022
Operating lease liabilities (Note 9)	$ 318	$ 280
Income taxes payable (Note 18)	249	143
Dividends payable	252	241
Accrued rebates	196	199
Value-added, sales and use, and other taxes	146	183
Other	1,167	998
Other current liabilities	$ 2,328	$ 2,044

Payroll taxes are recorded in the accrued compensation and benefits within the consolidated statement of financial position and were approximately $54 million and $72 million as of September 30, 2023 and 2022, respectively. Income taxes payable, sales and use taxes, payroll taxes and value added taxes are payable in the timeframe set in the relevant legislation.

Trade and other creditors are payable at various dates within a year after the end of the fiscal year in accordance with the creditors usual and customary credit terms.

As of September 30, 2023 and 2022, other noncurrent liabilities were comprised of (in millions):

	September 30, 2023	September 30, 2022
Operating lease liabilities (Note 9)	$ 1,086	$ 987
Deferred compensation	113	117
Other	380	478
Other noncurrent liabilities	$ 1,579	$ 1,582

24. FINANCIAL ASSETS

The Group's activity for financial assets during fiscal year 2023 was as follows (in millions):

	Investments in Partially Owned Affiliates	Investments	Total
At September 30, 2022	$ 963	$ 335	$ 1,298
Income from equity investments	265	—	265
Dividends	(168)	—	(168)
Additions	7	41	48
Reductions	—	(44)	(44)
Currency translation and other	(11)	—	(11)
At September 30, 2023	$ 1,056	$ 332	$ 1,388

Investments were recorded in the following accounts within the consolidated statement of financial position (in millions):

	September 30, 2023	September 30, 2022
Other current assets	$ —	$ 22
Other noncurrent assets	332	313
	$ 332	$ 335

25. PROVISIONS FOR LIABILITIES

Material provisions for liabilities were comprised of (in millions):

	September 30, 2023	September 30, 2022
Pension and postretirement obligations (Note 16)	$ 278	$ 358
Deferred tax liabilities and uncertain tax positions	2,783	3,148
Warranty reserves (Note 20)	203	180
Restructuring reserves (Note 17)	105	82
Other provisions (included below)	1,223	1,249
	$ 4,592	$ 5,017
Current provisions	$ 525	$ 508
Noncurrent provisions	4,067	4,509
	$ 4,592	$ 5,017

The activity in other provisions accounts for 2023 is as follows (in millions):

	Asbestos-Related and Insurable Liabilities	Environmental Reserves	Other Provisions	Total
At September 30, 2022	$ 779	$ 286	$ 184	$ 1,249
Additions	152	2	103	257
Reductions	(176)	(46)	(58)	(280)
Currency translation and other	—	—	(3)	(3)
At September 30, 2023	$ 755	$ 242	$ 226	$ 1,223

26. DIRECTORS' REMUNERATION

Group's directors' remuneration for fiscal years 2023 and 2022 is set forth in the table below.

George Oliver, the Group's Chief Executive Officer and the Chairman of the Board has not been compensated for his service as director. Accordingly, the amounts below include compensation for Mr. Oliver's service as Chairman and Chief Executive Officer as well as compensation for all Group non-employee directors in their capacities as such ($ in millions):

	Year Ended September 30,	
	2023	2022
Emoluments paid for qualifying services	$ 5	$ 5
Benefits under long-term incentive schemes	11	24
Gain on exercise of share options	2	—
Other (1)	1	1
	$ 19	$ 30

(1) Amounts include reimbursements with respect to personal use of the Group aircraft, personal use of a vehicle, and retirement plan matching contributions. Retirement plan matching contributions, which are benefiting one director, totaled $0.3 million for fiscal years 2023 and 2022.

27. AUDITORS' REMUNERATION

Auditors' remuneration to PricewaterhouseCoopers Ireland for fiscal years 2023 and 2022 included $1.8 million and $1.6 million of audit fees, respectively.

Auditors' remuneration to PricewaterhouseCoopers Ireland and its affiliates for fiscal years 2023 and 2022 was as follows ($ in millions):

	Year Ended September 30,	
	2023	2022
Audit fees	$ 23	$ 22
Audit related fees	—	3
Tax fees	3	2
	$ 26	$ 27

See Note 5, "Auditors' Remuneration," of the notes to company financial statements for the Group's auditors' remuneration.

28. EMPLOYEES

The average number of persons, including executive directors, employed by the Group during the years ended September 30, 2023 and 2022 was as follows (in thousands):

	Year Ended September 30,	
	2023	2022
North America	28	29
EMEA/LA	19	20
Asia Pacific	9	9
Global Products	38	37
Corporate	6	6
Total employees	100	101

Total employee costs expensed during the period consist of the following ($ in millions):

	Year Ended September 30,	
	2023	2022
Wages, salaries and fringe benefits	$ 6,601	$ 6,314
Social insurance costs	349	320
Stock-based compensation	101	104
Other compensation costs (credits)	78	(58)
	$ 7,129	$ 6,680

Other retirement benefit costs (credits) included above were $270 million and $(20) million for the years ended September 30, 2023 and 2022, respectively. Refer to Note 16, "Retirement Plans," of the notes to consolidated financial statements for further information on the retirement plans.

In addition, employee costs of $1.2 billion and $1.1 billion were capitalized into inventories, intangible assets and property, plant & equipment - net during fiscal 2023 and 2022.

29. SUBSIDIARY UNDERTAKINGS

In accordance with section 316 (1) of the Act, the related undertakings that have been included below are restricted to significant subsidiaries as of September 30, 2023. The remaining entities are annexed to the annual return of the Group.

Name	Nature of Business	Group Ordinary Share %	Registered Office and Country of Incorporation
Johnson Controls, Inc.	Corporate	100%	c/o CT Corporation System, 301 S. Bedford Street, Suite 1, Madison, Wisconsin, United States, 53703

JOHNSON CONTROLS INTERNATIONAL PLC

Company Financial Statements

For the Year Ended September 30, 2023

JOHNSON CONTROLS INTERNATIONAL PLC

COMPANY BALANCE SHEET

(in millions)

	Note	September 30, 2023	September 30, 2022
Fixed assets			
Financial assets	2	$ 30,099	$ 33,406
Current assets			
Debtors	6	486	494
Creditors (amounts falling due within one year)	7	(4,011)	(6,218)
Net current liabilities		(3,525)	(5,724)
Total assets less current liabilities		26,574	27,682
Creditors (amounts falling due after more than one year)	8	(7,041)	(7,468)
Net assets		$ 19,533	$ 20,214
Capital and reserves			
Called-up share capital presented as equity	11	$ 7	$ 7
Share premium account	11	738	695
Profit and loss account	11	18,093	18,902
Share-based compensation reserve	11	695	610
Equity shareholders' funds		$ 19,533	$ 20,214

The Company’s profit for financial years 2023 and 2022 as determined in accordance with FRS 102 was $843 million and $203 million, respectively.

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

Approved by the Board of Directors on February 9, 2024 and signed on its behalf by:

/s/ George R. Oliver	/s/ Gretchen R. Haggerty
George R. Oliver	Gretchen R. Haggerty
Chairman and Chief Executive Officer	Director

JOHNSON CONTROLS INTERNATIONAL PLC

COMPANY STATEMENT OF CHANGES IN EQUITY

(in millions)

	Ordinary Share Number	Called-up Share Capital	Share Premium Account	Profit and Loss Account	Share-based Compensation Reserve	Equity Shareholders' Funds
Balance as of September 30, 2021	737	$7	$675	$21,157	$522	$22,361
Profit for the year	—	—	—	203	—	203
Dividends declared	—	—	—	(965)	—	(965)
Share vestings and option exercises	3	—	20	—	—	20
Share-based compensation	—	—	—	—	88	88
Repurchase and cancellation of ordinary shares	(22)	—	—	(1,441)	—	(1,441)
Other	—	—	—	(52)	—	(52)
Balance as of September 30, 2022	718	7	695	18,902	610	20,214
Profit for the year	—	—	—	843	—	843
Dividends declared	—	—	—	(991)	—	(991)
Share vestings and option exercises	3	—	43	—	—	43
Share-based compensation	—	—	—	—	85	85
Repurchase and cancellation of ordinary shares	(11)	—	—	(625)	—	(625)
Other	—	—	—	(36)	—	(36)
Balance as of September 30, 2023	**710**	**$ 7**	**$ 738**	**$ 18,093**	**$ 695**	**$ 19,533**

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

NOTES TO THE COMPANY FINANCIAL STATEMENTS

1. Basis of Preparation and Summary of Significant Accounting Policies

On September 2, 2016 (the "Merger date"), Johnson Controls Inc. ("JCI Inc.") which is organized under the laws of the United States of America, reverse merged into Tyco International plc (the "Merger"). The Irish public limited company is now known as Johnson Controls International plc ("JCI plc"), registered at One Albert Quay, Cork, domiciled in Ireland, and incorporated under the laws of Ireland under registered number 543654 as a result of this reverse merger. Johnson Controls International plc and all its subsidiaries are hereinafter collectively referred to as the "Group" or "Johnson Controls."

The accompanying financial statements have been prepared in United States dollars ("USD") and reflect the operations of Johnson Controls International plc ("plc," "JCI plc" or "the Company").

Financial Year - The Company's financial year end is September 30 of each year.

Statement of Compliance - The entity financial statements have been prepared on a going concern basis and in accordance with accounting standards issued by the UK Financial Reporting Council and the Companies Act 2014. The entity financial statements comply with Financial Reporting Standard 102, The Financial Reporting Standard applicable in the UK and Republic of Ireland ("FRS 102").

Basis of Preparation - The entity financial statements have been prepared under the historical cost convention. The preparation of financial statements in conformity with FRS 102 requires the use of certain key assumptions concerning the future, and other key sources of estimation uncertainty at the reporting date. It also requires the directors to exercise judgment in the process of applying the Company's accounting policies. The areas involving a higher degree of judgment or areas where assumptions and estimates have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are disclosed in the "Critical Accounting Estimates and Judgements" section of this Note.

Foreign currency - Functional and presentation currency - The Company's functional and presentation currency is the U.S. dollar ("USD") which is denominated by the symbol "$." Unless otherwise stated, the financial statements have been presented in millions.

Foreign currency - Transactions and balances - Foreign currency transactions, including settlements of debtors and creditors, are translated into the functional currency using the prior month-end exchange rates at the dates of the transactions. Foreign currency monetary items are revalued to USD using the month-end exchange rate. Non-monetary items measured at historical cost are revalued using the exchange rate at the date of the transaction and non-monetary items measured at fair value are measured using the exchange rate when fair value was determined. Foreign exchange gains and losses resulting from the settlement of transactions and from the revaluation at period-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognized in the profit and loss account, including the revaluation of intercompany permanent loans and foreign currency denominated debt.

Cash at Bank and in Hand - The Company considers all highly liquid investments purchased with maturities of three months or less from the time of purchase to be cash equivalents. Negative cash balances are reclassified to Creditors (amounts falling due within one year).

Share-Based Payment Accounting - The Company has applied the requirements of FRS 102 Share-Based Payment in accounting for all stock based compensation. Consequently, the measurement and recognition of compensation expense for all share-based payment awards made to employees and directors is based on estimated fair values. The Company issues equity-settled share-based payments to certain employees of its subsidiaries. Equity-settled share-based payments are measured at fair value at the date of grant and recognized over the vesting period, based on the Company's estimate of the shares that will eventually vest and adjusted for the effect of non-market-based vesting conditions. Since the Company grants its shares directly to employees of its subsidiaries, it accounts for share-based compensation payment as a capital contribution with an increase in the investment in the subsidiaries. The share-based compensation payment is recharged by the Company to certain subsidiaries. The share-based payment recharge to subsidiaries for the awards granted prior to the Tyco merger on September 2, 2016 is recorded to the share premium account on the Company balance sheet. The share-based payment recharge to subsidiaries for the awards granted after the Tyco merger on September 2, 2016 is recorded to the financial asset account on the Company balance sheet. Amounts recharged to subsidiaries for JCI plc options in excess of the original capital contribution are recognized in the profit and loss account.

Contingencies - Contingent liabilities, arising as a result of past events, are not recognized as a liability because it is not probable that the Company will be required to transfer economic benefits in settlement of the obligation or the amount cannot be reliably measured at the end of the financial year. Possible but uncertain obligations are not recognized as liabilities but are contingent liabilities. Contingent liabilities are disclosed in the financial statements unless the probability of an outflow of resources is remote. Contingent assets are not recognized. Contingent assets are disclosed in the financial statements when an inflow of economic benefits is probable.

Financial Instruments - The Company has chosen to apply the provisions of Sections 11 and 12 of FRS 102 to account for all of its financial instruments.

Financial Assets - Basic financial assets, including cash and cash equivalents and short-term deposits, are initially recognized at transaction price (including transaction costs).

Cash and cash equivalents and financial assets from arrangements which constitute financing transactions are subsequently measured at amortized cost using the effective interest method.

At the end of each financial year, financial assets measured at amortized cost are assessed for objective evidence of impairment. If there is objective evidence that a financial asset measured at amortized cost is impaired, an impairment loss is recognized in profit or loss. The impairment loss is the difference between the financial asset's carrying amount and the present value of the financial asset's estimated cash inflows discounted at the asset's original effective interest rate.

If, in a subsequent financial year, the amount of an impairment loss decreases and the decrease can be objectively related to an event occurring after the impairment was recognized, the previously recognized impairment loss is reversed. The reversal is such that the current carrying amount does not exceed what the carrying amount would have been had the impairment loss not previously been recognized. The impairment reversal is recognized in profit or loss.

Financial assets are derecognized when (a) the contractual rights to the cash flows from the asset expire or are settled, or (b) substantially all of the risks and rewards of ownership of the financial asset are transferred to another party or (c) control of the financial asset has been transferred to another party who has the practical ability to unilaterally sell the financial asset to an unrelated third party without imposing additional restrictions.

Certain other financial assets are initially measured at fair value, which is normally the transaction price. Such financial assets are subsequently measured at fair value and the changes in fair value are recognized in profit or loss.

Investment in Subsidiary Undertakings - Investment in subsidiary undertakings is recorded at the Company’s cost.

Impairment of Financial Assets - The Company monitors the carrying value of financial assets, using judgment on the future cash flows to be generated from each acquisition, synergy benefits arising and the interest rate to be used to discount future cash flows. The carrying value of financial assets is assessed for impairment based on the presence of impairment indicators - where events or changes in circumstances indicate that the carrying amount may not be recoverable. Any shortfall in the carrying value (as compared to the lower of value in use and net realizable value) is recorded as an impairment charge.

Financial Liabilities - Basic financial liabilities, including bank loans and amounts due to subsidiary undertakings, are initially recognized at transaction price, unless the arrangement constitutes a financing transaction. Where the arrangement constitutes a financing transaction, the resulting financial liability is initially measured at the present value of the future payments discounted at a market rate of interest for a similar debt instrument. Bank loans, amounts due to subsidiary undertakings, and financial liabilities from arrangements which constitute financing transactions are subsequently carried at amortized cost, using the effective interest method. Financial liabilities are derecognized when the liability is extinguished, that is when the contractual obligation is discharged, canceled or expired.

Taxation - Current Tax - Current tax is the amount of income tax payable in respect of the taxable profit for the financial year or past financial years. Current tax is measured as the amount of current tax that is expected to be paid using tax rates and laws that have been enacted or substantively enacted by the end of the financial year.

Taxation - Deferred Tax - Deferred tax is recognized in respect of timing differences, which are differences between taxable profits and total comprehensive income as stated in the financial statements. These timing differences arise from the inclusion of income and expenses in tax assessments in financial years different from those in which they are recognized in financial statements. Deferred tax is recognized on all timing differences at the end of each financial year with certain exceptions. Unrelieved tax losses and other deferred tax assets are recognized only when it is probable that they will be recovered against the reversal of deferred tax liabilities or other future taxable profits. Deferred tax is measured using tax rates and laws that have been enacted or substantively enacted by the end of each financial year and that are expected to apply to the reversal of the timing difference.

Share Capital Presented as Equity - Equity shares issued are recognized at the proceeds received and presented as share capital and share premium. Incremental costs directly attributable to the issue of new equity shares or options are shown in equity as a deduction, net of tax, from the proceeds.

Dividends - The authority to declare and pay dividends is vested in the Board of Directors. The timing, declaration and payment of future dividends to holders of the Company's ordinary shares is determined by the Company's Board of Directors and depends upon many factors, including the Company's financial condition and results of operations, the capital requirements of the Company's businesses, industry practice and any other relevant factors. Dividends may only be declared and paid out of the profits available for distribution ("distributable reserves") in accordance with accounting practice generally accepted in Ireland and applicable Irish Company Law. See the Company Statement of Changes in Equity. Any dividends, if and when declared, are expected to be declared and paid in USD.

Treasury Shares - Treasury shares are Company owned shares following the share repurchase program approved by the Board of Directors and the repurchase from employees who have sold a portion of their vested restricted units to cover withheld taxes.

Going Concern - As the Company's operational existence relies on the activities of the Group, a going concern assessment performed at the Group level was deemed relevant to support the Group's ability to continue as a going concern. The Company's Board of Directors formed a judgment at the time of approving these financial statements that there was a reasonable expectation that the Company has adequate resources to continue in operational existence for the next twelve months. In arriving at this conclusion, the Company's Board of Directors took account of current and anticipated uncertainties (as described in greater detail under the heading "Going Concern" on page 42 of the Directors' Report and in the accounting policies in Note 1, "Basis of Presentation and Summary of Significant Accounting Policies," of the notes to the consolidated financial statements) in its going concern assessment and believed that these uncertainties would not have a material impact on the Company's ability to continue as a going concern. For this reason, the going concern basis continues to be adopted in the preparation of the Company's financial statements.

Disclosure Exemptions for Qualifying Entities under FRS 102 - FRS 102 allows a qualifying entity to avail of certain disclosure exemptions. The Company has taken advantage of the following exemptions for qualifying entities:

- The requirement to prepare a statement of cash flows. [Section 7 of FRS 102 and paragraph 3 17(d)]
- Certain financial instrument disclosures providing equivalent disclosures are included in the consolidated financial statements of the Group in which the entity is consolidated. [FRS 102 paragraph 11.39-11 48A, 12.26 - 12.29]
- Certain disclosure requirements of Section 26 in respect of share-based payments provided that (a) for a subsidiary, the share-based payment concerns equity instruments of another group entity; or (b) for an ultimate parent, the share-based payment concerns its own equity instruments and its separate financial statements are presented alongside the consolidated financial statements of the group; and in both cases, the equivalent disclosures are included in the consolidated financial statements of the group in which the entity is consolidated. [FRS 102 paragraph 26.18(b), 26.19 - 26.21, 26.23]
- Related party disclosures related to key management services provided by a separate management entity. [paragraph 18A of ISA24]

Critical Accounting Estimates and Judgments

Use of Estimates - Estimates and judgments are required when applying accounting policies. These are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. The Company makes estimates and assumptions concerning the future, which can involve a high degree of judgment or complexity. The resulting accounting estimates will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are addressed below.

Investment in Subsidiary Undertakings - The Company periodically evaluates whether current facts or circumstances indicate that the carrying values of its investment in subsidiary undertakings may not be recoverable. If such circumstances are determined to exist, an estimate of the recoverable amount is compared to the carrying value to determine whether an impairment exists. If the asset is determined to be impaired, the loss is measured based on the difference between the asset's recoverable amount and its carrying value. There were no circumstances or indicators suggesting impairment of the Company's investment in subsidiary undertakings in either the current or prior financial years.

2. Financial Fixed Assets

Financial fixed assets included on the Company balance sheet were as follows ($ in millions):

	Investments in Subsidiaries
As of October 1, 2022	$ 33,406
Share-based compensation, net	78
Disposals	(3,385)
As of September 30, 2023	$ 30,099

In the year ended September 30, 2023, the Company sold its 81.85% interest in JSV Holding S.a.r.l to an affiliate for cash of $4.9 billion and recognized a gain of $1.5 billion.

The following schedule summarizes the Company’s significant directly owned investments as of September 30, 2023:

Company	Registered Office Address	Country	Type	Ordinary Share Ownership %	Date of Acquisition
Tyco Fire & Security Finance SCA ("TFSCA")	29 avenue de la Porte Neuve, Luxembourg, Luxembourg (fr), Luxembourg, 2227	Luxembourg	Holding co.	99.924 (1)	August 2014
Tyco Fire & Security S.a.r.l	29 avenue de la Porte Neuve, Luxembourg, Luxembourg (fr), Luxembourg, 2227	Luxembourg	Holding co.	100	August 2014
Global Risk Underwriters (Bermuda) Ltd.	Clarendon House, 2 Church Street, Hamilton, Bermuda	Bermuda	Holding co.	100	September 2017
Johnson Controls International Finance Unlimited Company	One Albert Quay, Cork, Cork, Ireland	Ireland	Holding co.	100	December 2017
Johnson Controls Asia Investment Unlimited Company	One Albert Quay, Cork, Cork, Ireland	Ireland	Holding co.	100	September 2018
World Services Inc.	Ocean Centre, Montagu Foreshore East Bay Street, PO Box SS-19084, New Providence, Nassau, Bahamas	Bahamas	Holding co.	100	September 2019
Tyco Finance Corp	1209 Orange Street, Wilmington, Delaware 19801	United States	Holding co.	100	September 2020

(1) JCI plc holds common shares in TFSCA, registered at 29 Av Porte Neuve, L-2227 Luxembourg. It holds 49,999 shares directly and 2 common share indirectly through Tyco Fire & Security S.a.r.l ("TFSsarl") registered at the same address.

See the Exhibit for a complete listing of the Group's subsidiary undertakings and unconsolidated subsidiaries:

3. Guarantees and Contingencies

As of September 30, 2023 and 2022, JCI plc had parent guarantees of approximately $9 billion and $7 billion, respectively, which were primarily comprised of guarantees of subsidiaries' debt, credit facilities and lease obligations.

In fiscal 2023, JCI plc and TFSCA, a corporate partnership limited by shares (*société en commandite par actions*) incorporated and organized under the laws of the Grand Duchy of Luxembourg (“Luxembourg”) jointly issued EUR 800 million of bonds with an interest rate of 4.25%, which are due in May 2035.

TFSCA is a wholly-owned consolidated subsidiary of the company that is 99.924% owned directly by JCI plc and 0.076% owned by TFSCA’s sole general partner and manager, Tyco Fire & Security S.à r.l.. The bonds and senior notes are JCI plc’s and TFSCA’s unsecured, unsubordinated obligations. As TFSCA recognized the proceeds of the debt issuances, it is considered the primary obligor for the related liabilities which are recognized in TFSCA's financial statements with JCI plc acting in substance as a guarantor.

4. Directors’ Remuneration

Refer to Note 26, "Directors' Remuneration," of the notes to consolidated financial statements for details of directors’ remuneration paid by the Company and Group.

5. Auditors’ Remuneration

Auditors' remuneration for audits of individual accounts were $0.1 million for both financial years 2023 and 2022. Amounts for financial year 2023 represent estimated fees and expenses. See Note 27 "Auditors' Remuneration," of the consolidated financial statements for details of fees for the Group.

6. Debtors

Debtors included on the Company Balance Sheet were as follows ($ in millions):

	September 30,	
	2023	2022
Amounts falling due within one year:		
Amounts due from subsidiary undertakings, interest free, due on demand	$ 462	$ 473
Other debtors and prepayments	19	21
	481	494
Amounts falling due after one year:		
Cross-currency interest rate swap	5	—
	$ 486	$ 494

7. Creditors (amounts falling due within one year)

Creditors (amounts falling due within one year) included on the Company Balance Sheet were as follows ($ in millions):

	September 30,	
	2023	2022
Amounts due to subsidiary undertakings		
World Services Inc. loan, interest free, payable on demand	$ 752	$ 752
Other	303	177
	1,055	929
Amounts owed to credit institutions		
Bank overdraft	1,829	3,627
Term loans	184	354
Commercial paper	200	172
	2,213	4,153
Current portion of long-term debt	453	854
Accrued dividends	252	241
Other accruals	38	41
	$ 4,011	$ 6,218

Other amounts due to subsidiary undertakings are payable at various dates after the financial year end in accordance with the Group's usual intercompany payment terms.

The weighted-average interest rate for amounts owed to credit institutions was 6.5% as of September 30, 2023 and 3.7% as of September 30, 2022.

8. Creditors (amounts falling due after more than one year)

Creditors (amounts falling due after more than one year) were comprised of ($ in millions):

	September 30, 2023	September 30, 2022
Unsecured, interest-bearing amounts due to subsidiary undertakings		
1.05% loan to Obsidian Luxembourg Holding S.a.r.l. due in 2025	$ 1,362	$ 1,248
1.52% loans to Tyco Technology GmbH due in 2026	2,100	2,100
Total due to subsidiary undertakings	3,462	3,348
Unsecured long-term debt		
4.625% due in 2023 ($25 million par value)	—	25
1.00% due in 2023 (EUR 846 million par value)	—	829
3.625% due in 2024 ($453 million par value)	453	454
1.375% due in 2025 (EUR 423 million par value)	450	418
3.90% due in 2026 ($487 million par value)	488	488
TORF + 0.40% due in 2027 (JPY 30 billion par value)	202	208
6.00% due in 2036 ($342 million par value)	372	374
5.70% due in 2041 ($190 million par value)	208	209
5.25% due in 2042 ($155 million par value)	163	164
4.625% due in 2044 ($444 million par value)	436	436
5.125% due in 2045 ($477 million par value)	390	500
6.95% due in 2045 ($32 million par value)	41	41
4.50% due in 2047 ($500 million par value)	496	496
4.95% due in 2064 ($341 million par value)	332	332
Gross long-term debt	4,031	4,974
Less: current portion	453	854
Net long-term debt	3,578	4,120
Other	1	—
Total creditors falling due after more than one year	$ 7,041	$ 7,468

9. Related Party Transactions

The Company has availed of the exemption provided in FRS 102 Section 33, for disclosure of transactions with subsidiary undertakings, 100% of whose voting rights are controlled within the Group. Consequently, the financial statements do not contain disclosures of transactions with other related entities in the Group. During financial years 2023 and 2022, only transactions with subsidiaries which are fully owned have occurred.

10. Subsidiary Undertakings

Refer to Note 2, "Financial Fixed Assets," of the notes to Company financial statements.

11. Capital and Reserves

Called-up share capital is the number of issued ordinary shares of JCI plc. The par value of each ordinary share is $0.01.

The share premium account reflects the fair value of consideration received in excess of the par value of shares issued for stock option exercises, vesting of restricted stock units and other issuances of shares, including the consideration received from the subsidiaries for the issuance of stock for stock option exercises and vesting of restricted stock units for awards granted prior to the Merger date. In accordance with the requirements of FRS 102, the share-based payment recharge to subsidiaries for the awards granted post the Tyco Merger on September 2, 2016 is recorded as a reduction to the financial asset account. This treatment could differ from the legal substance of the transaction, which from a legal perspective may represent share premium.

The profit and loss account refers to the portion of net income which is retained by the Company rather than being distributed to shareholders as dividends. Treasury shares are accounted for in this account. The balance of these self owned shares as of September 30, 2023 and September 30, 2022 was $1,240 million and $1,203 million, respectively.

The share-based compensation reserve arises upon the granting of shares under the stock based compensation plan. The balance of this reserve as of September 30, 2023 and September 30, 2022 was $695 million and $610 million, respectively.

12. Dividends

Dividends of $980 million and $916 million were paid to external shareholders during financial years 2023 and 2022, respectively. Outstanding dividends declared were $252 million as of September 30, 2023 and $241 million as of September 30, 2022.

13. Profit Attributable to JCI plc

In accordance with Section 304(2) of the Companies Act 2014, the Company is availing of the exemption provided from presenting and filing its individual Profit and Loss Account.

14. Subsequent Events

See note 22, "Subsequent Events" to the Group's consolidated financial statements for details on a cybersecurity incident that occurred during the weekend of September 23, 2023.

Subsequent events have been evaluated through February 9, 2024, the date this report was approved by the Board of Directors. There were no subsequent events that would materially impact the Company's financial statements since the balance sheet date.

15. Approval of Financial Statements

The financial statements were approved and authorized for issue by the Board of Directors on February 9, 2024 and were signed on its behalf on that date.