UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 10-Q

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

For the quarterly period ended March 31, 2021

OR

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

For the Transition Period From _____ To _____

Commission File Number: 001-13836

JOHNSON CONTROLS INTERNATIONAL PLC

(Exact name of registrant as specified in its charter)

Ireland	**98-0390500**
(Jurisdiction of Incorporation)	(I.R.S. Employer Identification No.)
One Albert Quay, Cork, Ireland, T12 X8N6	**(353) 21-423-5000**
(Address of Principal Executive Offices and Postal Code)	(Registrant's Telephone Number)

Securities Registered Pursuant to Section 12(b) of the Exchange Act:

Title of Each Class	Trading Symbol	Name of Each Exchange on Which Registered
Ordinary Shares, Par Value $0.01	JCI	New York Stock Exchange
3.750% Senior Notes due 2021	JCI21C	New York Stock Exchange
4.625% Notes due 2023	JCI23	New York Stock Exchange
1.000% Senior Notes due 2023	JCI23A	New York Stock Exchange
3.625% Senior Notes due 2024	JCI24A	New York Stock Exchange
1.375% Notes due 2025	JCI25A	New York Stock Exchange
3.900% Notes due 2026	JCI26A	New York Stock Exchange
0.375% Senior Notes due 2027	JCI27	New York Stock Exchange
1.750% Senior Notes due 2030	JCI30	New York Stock Exchange
1.000% Senior Notes due 2032	JCI32	New York Stock Exchange
6.000% Notes due 2036	JCI36A	New York Stock Exchange
5.70% Senior Notes due 2041	JCI41B	New York Stock Exchange
5.250% Senior Notes due 2041	JCI41C	New York Stock Exchange
4.625% Senior Notes due 2044	JCI44A	New York Stock Exchange
5.125% Notes due 2045	JCI45B	New York Stock Exchange
6.950% Debentures due December 1, 2045	JCI45A	New York Stock Exchange
4.500% Senior Notes due 2047	JCI47	New York Stock Exchange
4.950% Senior Notes due 2064	JCI64A	New York Stock Exchange

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☑ No ☐

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

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

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

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

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

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date.

Class	Ordinary Shares Outstanding at March 31, 2021
Ordinary Shares, $0.01 par value per share	716,715,091

JOHNSON CONTROLS INTERNATIONAL PLC

FORM 10-Q

Report Index

PART I. FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

Johnson Controls International plc
Consolidated Statements of Financial Position
(in millions, except par value; unaudited)

	March 31, 2021	September 30, 2020
Assets		
Cash and cash equivalents	$ 1,883	$ 1,951
Accounts receivable - net	5,167	5,294
Inventories	1,994	1,773
Other current assets	1,160	1,035
Current assets	10,204	10,053
Property, plant and equipment - net	3,015	3,059
Goodwill	18,124	17,932
Other intangible assets - net	5,259	5,356
Investments in partially-owned affiliates	1,045	914
Noncurrent assets held for sale	179	147
Other noncurrent assets	3,354	3,354
Total assets	$ 41,180	$ 40,815
Liabilities and Equity		
Short-term debt	$ 248	$ 31
Current portion of long-term debt	196	262
Accounts payable	3,417	3,120
Accrued compensation and benefits	817	838
Deferred revenue	1,710	1,435
Other current liabilities	2,352	2,562
Current liabilities	8,740	8,248
Long-term debt	7,323	7,526
Pension and postretirement benefits	831	1,140
Other noncurrent liabilities	5,529	5,368
Long-term liabilities	13,683	14,034
Commitments and contingencies (Note 22)		
Ordinary shares, $0.01 par value	7	8
Ordinary A shares, €1.00 par value	—	—
Preferred shares, $0.01 par value	—	—
Ordinary shares held in treasury, at cost	(1,148)	(1,119)
Capital in excess of par value	17,034	16,865
Retained earnings	2,215	2,469
Accumulated other comprehensive loss	(410)	(776)
Shareholders' equity attributable to Johnson Controls	17,698	17,447
Noncontrolling interests	1,059	1,086
Total equity	18,757	18,533
Total liabilities and equity	$ 41,180	$ 40,815

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

Johnson Controls International plc
Consolidated Statements of Income

(in millions, except per share data; unaudited)

	Three Months Ended March 31,		Six Months Ended March 31,	
	2021	2020	2021	2020
Net sales				
Products and systems	$ 4,032	$ 3,922	$ 7,831	$ 7,958
Services	1,562	1,522	3,104	3,062
	5,594	5,444	10,935	11,020
Cost of sales				
Products and systems	2,751	2,741	5,470	5,607
Services	900	902	1,794	1,809
	3,651	3,643	7,264	7,416
Gross profit	1,943	1,801	3,671	3,604
Selling, general and administrative expenses	(1,253)	(1,451)	(2,547)	(2,878)
Restructuring and impairment costs	(96)	(62)	(96)	(173)
Net financing charges	(44)	(59)	(103)	(111)
Equity income	56	20	114	63
Income from continuing operations before income taxes	606	249	1,039	505
Income tax provision	209	13	270	78
Income from continuing operations	397	236	769	427
Income from discontinued operations, net of tax (Note 4)	—	—	124	—
Net income	397	236	893	427
Income from continuing operations attributable to noncontrolling interests	54	23	99	55
Net income attributable to Johnson Controls	$ 343	$ 213	$ 794	$ 372
Amounts attributable to Johnson Controls ordinary shareholders:				
Income from continuing operations	$ 343	$ 213	$ 670	$ 372
Income from discontinued operations	—	—	124	—
Net income	$ 343	$ 213	$ 794	$ 372
Basic earnings per share attributable to Johnson Controls				
Continuing operations	$ 0.48	$ 0.28	$ 0.93	$ 0.49
Discontinued operations	—	—	0.17	—
Net income	$ 0.48	$ 0.28	$ 1.10	$ 0.49
Diluted earnings per share attributable to Johnson Controls				
Continuing operations	$ 0.48	$ 0.28	$ 0.93	$ 0.49
Discontinued operations	—	—	0.17	—
Net income	$ 0.48	$ 0.28	$ 1.10	$ 0.49

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

Johnson Controls International plc
Consolidated Statements of Comprehensive Income (Loss)
(in millions; unaudited)

	Three Months Ended March 31,		Six Months Ended March 31,	
	2021	2020	2021	2020
Net income	$ 397	$ 236	$ 893	$ 427
Other comprehensive income (loss), net of tax:				
Foreign currency translation adjustments	63	(494)	371	(233)
Realized and unrealized gains (losses) on derivatives	8	(10)	9	(3)
Pension and postretirement plans	—	—	(1)	(1)
Other comprehensive income (loss)	71	(504)	379	(237)
Total comprehensive income (loss)	468	(268)	1,272	190
Comprehensive income attributable to noncontrolling interests	31	—	112	44
Comprehensive income (loss) attributable to Johnson Controls	$ 437	$ (268)	$ 1,160	$ 146

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

Johnson Controls International plc
Consolidated Statements of Cash Flows
(in millions; unaudited)

	Six Months Ended March 31, 2021	Six Months Ended March 31, 2020
Operating Activities of Continuing Operations		
Net income from continuing operations attributable to Johnson Controls	$ 670	$ 372
Income from continuing operations attributable to noncontrolling interests	99	55
Net income from continuing operations	769	427
Adjustments to reconcile net income from continuing operations to cash provided by operating activities:		
Depreciation and amortization	419	414
Pension and postretirement benefit income	(299)	(80)
Pension and postretirement contributions	(25)	(27)
Equity in earnings of partially-owned affiliates, net of dividends received	(107)	(11)
Deferred income taxes	25	(61)
Noncash restructuring and impairment charges	54	116
Equity-based compensation	32	38
Other - net	(64)	18
Changes in assets and liabilities, excluding acquisitions and divestitures:		
Accounts receivable	167	244
Inventories	(211)	(261)
Other assets	(90)	(150)
Restructuring reserves	(24)	(38)
Accounts payable and accrued liabilities	510	(605)
Accrued income taxes	4	642
Cash provided by operating activities from continuing operations	1,160	666
Investing Activities of Continuing Operations		
Capital expenditures	(197)	(250)
Sale of property, plant and equipment	54	20
Acquisition of businesses, net of cash acquired	(10)	(58)
Business divestitures, net of cash divested	19	—
Changes in long-term investments	15	—
Cash used by investing activities from continuing operations	(119)	(288)
Financing Activities of Continuing Operations		
Increase in short-term debt - net	225	335
Repayment of long-term debt	(258)	(502)
Debt financing costs	—	(4)
Stock repurchases and retirements	(661)	(1,467)
Payment of cash dividends	(377)	(402)
Proceeds from the exercise of stock options	133	39
Employee equity-based compensation withholding taxes	(29)	(32)
Change in noncontrolling interest share	(14)	—
Dividends paid to noncontrolling interests	(101)	(5)
Cash received related to prior acquisitions and divestitures, net	3	2
Cash used by financing activities from continuing operations	(1,079)	(2,036)
Discontinued Operations		
Cash used by operating activities	(37)	(208)
Cash used by discontinued operations	(37)	(208)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	9	64
Decrease in cash, cash equivalents and restricted cash	(66)	(1,802)
Cash, cash equivalents and restricted cash at beginning of period	1,960	2,821
Cash, cash equivalents and restricted cash at end of period	1,894	1,019
Less: Restricted cash	11	13
Cash and cash equivalents at end of period	$ 1,883	$ 1,006

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

Johnson Controls International plc
Consolidated Statements of Shareholders' Equity Attributable to Johnson Controls Ordinary Shareholders
(in millions, except per share data; unaudited)

	Six Months Ended March 31, 2020					
	Total	Ordinary Shares	Capital in Excess of Par Value	Retained Earnings	Treasury Stock, at Cost	Accumulated Other Comprehensive Loss
At September 30, 2019	$ 19,766	$ 8	$ 16,812	$ 4,827	$ (1,086)	$ (795)
Comprehensive income (loss)	146	—	—	372	—	(226)
Cash dividends Ordinary ($0.52 per share)	(395)	—	—	(395)	—	—
Repurchases and retirements of ordinary shares	(1,467)	—	—	(1,467)	—	—
Adoption of ASC 842	(5)	—	—	(5)	—	—
Other, including options exercised	39	—	71	—	(32)	—
At March 31, 2020	$ 18,084	$ 8	$ 16,883	$ 3,332	$ (1,118)	$ (1,021)

	Three Months Ended March 31, 2020					
	Total	Ordinary Shares	Capital in Excess of Par Value	Retained Earnings	Treasury Stock, at Cost	Accumulated Other Comprehensive Loss
At December 31, 2019	$ 19,329	$ 8	$ 16,848	$ 4,129	$ (1,116)	$ (540)
Comprehensive income (loss)	(268)	—	—	213	—	(481)
Cash dividends Ordinary ($0.26 per share)	(194)	—	—	(194)	—	—
Repurchases and retirements of ordinary shares	(816)	—	—	(816)	—	—
Other, including options exercised	33	—	35	—	(2)	—
At March 31, 2020	$ 18,084	$ 8	$ 16,883	$ 3,332	$ (1,118)	$ (1,021)

	Six Months Ended March 31, 2021					
	Total	Ordinary Shares	Capital in Excess of Par Value	Retained Earnings	Treasury Stock, at Cost	Accumulated Other Comprehensive Loss
At September 30, 2020	$ 17,447	$ 8	$ 16,865	$ 2,469	$ (1,119)	$ (776)
Comprehensive income	1,160	—	—	794	—	366
Cash dividends Ordinary ($0.53 per share)	(384)	—	—	(384)	—	—
Repurchases and retirements of ordinary shares	(661)	(1)	—	(660)	—	—
Adoption of ASU 2016-13	(4)	—	—	(4)	—	—
Change in noncontrolling interest share	(8)	—	(8)	—	—	—
Other, including options exercised	148	—	177	—	(29)	—
At March 31, 2021	$ 17,698	$ 7	$ 17,034	$ 2,215	$ (1,148)	$ (410)

	Three Months Ended March 31, 2021					
	Total	Ordinary Shares	Capital in Excess of Par Value	Retained Earnings	Treasury Stock, at Cost	Accumulated Other Comprehensive Loss
At December 31, 2020	$ 17,656	$ 7	$ 16,917	$ 2,382	$ (1,146)	$ (504)
Comprehensive income	437	—	—	343	—	94
Cash dividends Ordinary ($0.27 per share)	(195)	—	—	(195)	—	—
Repurchases and retirements of ordinary shares	(315)	—	—	(315)	—	—
Change in noncontrolling interest share	(8)	—	(8)	—	—	—
Other, including options exercised	123	—	125	—	(2)	—
At March 31, 2021	$ 17,698	$ 7	$ 17,034	$ 2,215	$ (1,148)	$ (410)

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

1. Financial Statements

The consolidated financial statements include the consolidated accounts of Johnson Controls International plc, a public limited company organized under the laws of Ireland, and its subsidiaries (Johnson Controls International plc and all its subsidiaries, hereinafter collectively referred to as the "Company" or "Johnson Controls"). In the opinion of management, the accompanying unaudited consolidated financial statements contain all adjustments (which include normal recurring adjustments) necessary to state fairly the financial position, results of operations and cash flows for the periods presented. Certain information and footnote disclosures normally included in financial statements prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP") have been omitted pursuant to the rules and regulations of the United States Securities and Exchange Commission ("SEC"). These consolidated financial statements should be read in conjunction with the audited financial statements and notes thereto included in the Company's Annual Report on Form 10-K for the year ended September 30, 2020 filed with the SEC on November 16, 2020. The results of operations for the three and six month periods ended March 31, 2021 are not necessarily indicative of results for the Company's 2021 fiscal year because of seasonal and other factors.

Nature of Operations

Johnson Controls International plc, headquartered in Cork, Ireland, is a global diversified technology and multi-industrial leader serving a wide range of customers in more than 150 countries. The Company's products and solutions enable smart, energy efficient, sustainable buildings that work seamlessly together to advance the safety, comfort and intelligence of spaces to power its customers' mission. The Company is committed to helping its customers win and creating greater value for all of its stakeholders through its strategic focus on buildings.

The Company is a global leader in engineering, manufacturing and commissioning 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 Company further serves customers by providing technical services, including maintenance, repair, retrofit and replacement of equipment (in the HVAC, security and fire-protection space), energy-management consulting and data-driven "smart building" services and solutions powered by its digital platforms and capabilities.

Principles of Consolidation

The consolidated financial statements include the consolidated accounts of Johnson Controls International plc and its subsidiaries that are consolidated in conformity with U.S. GAAP. 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 Company's interest exceeds 20% and the Company does not have a controlling interest.

The Company consolidates variable interest entities ("VIE") in which the Company 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 Company did not have a significant variable interest in any consolidated or nonconsolidated VIEs in its continuing operations for the presented reporting periods.

Restricted Cash

At March 31, 2021 and September 30, 2020, the Company held restricted cash of approximately \$11 million and \$9 million, respectively, all of which was recorded within other current assets in the consolidated statements of financial position. These amounts were related to cash restricted for payment of asbestos liabilities.

2. New Accounting Standards

Recently Adopted Accounting Pronouncements

In June 2016, the FASB issued ASU No. 2016-13, "Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments." ASU No. 2016-13 and its related amendments replace the previous expected credit loss methodology with a new incurred loss methodology. The new standard applies to financial instruments, including, but not limited to, trade receivables. Under the new standard, companies must consider historical information, current conditions and a reasonable forecast period when estimating credit losses. The Company adopted ASU No. 2016-13 and the related amendments effective October 1, 2020. The adoption did not have a material impact on the Company's consolidated financial statements. Refer to Note 6, “Accounts Receivable, Net,” of the notes to the consolidated financial statements for further information.

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

3. Acquisitions and Divestitures

In April 2021, the Company announced it had entered into a definitive agreement to acquire Silent-Aire, a global leader in hyperscale data center cooling and modular critical infrastructure solutions. The all-cash transaction is valued at up to $870 million, which will include an upfront payment of approximately $630 million at closing and additional payments to be made subject to the achievement of post-closing earnout milestones. The Silent-Aire business will be reported within the Global Products segment. The transaction is expected to close in the third quarter of fiscal 2021, subject to the receipt of regulatory approval and customary closing conditions.

During the first six months of fiscal 2021, the Company completed certain acquisitions for a combined purchase price, net of cash acquired, of $15 million, of which $10 million was paid as of March 31, 2021. In connection with the acquisitions, the Company recorded goodwill of $13 million within the Building Solutions EMEA/LA segment.

During the first six months of fiscal 2021, the Company completed certain divestitures within the Buildings Solutions Asia Pacific segment. The combined selling price was $23 million, of which $19 million was received as of March 31, 2021. In connection with the divestitures, the Company reduced goodwill by $6 million.

During the first six months of fiscal 2020, the Company completed certain acquisitions for a combined purchase price, net of cash acquired, of $61 million, of which $58 million was paid as of March 31, 2020. In connection with the acquisitions, the Company recorded goodwill of $19 million within the Global Products segment and $20 million within the Building Solutions EMEA/LA segment.

Acquisitions and divestitures were not material to the Company's consolidated financial statements in the first six months of fiscal 2021 or 2020.

4. Discontinued Operations

On April 30, 2019, the Company completed the sale of its Power Solutions business, which met the criteria to be classified as a discontinued operation, to BCP Acquisitions LLC for a purchase price of $13.2 billion. The net cash proceeds after tax and transaction-related expenses were $11.6 billion. In connection with the sale, the Company recorded a gain, net of transaction and other costs, of $5.2 billion ($4.0 billion after tax), subject to post-closing working capital and net debt adjustments, within income from discontinued operations, net of tax, in the consolidated statements of income. In December 2020, the favorable resolution of certain post-closing working capital and net debt adjustments resulted in income from discontinued operations, net of tax, of $124 million due to a reversal of a reserve established in connection with the sale of Power Solutions.

The following table summarizes the results of Power Solutions which are classified as discontinued operations for the six months ended March 31, 2021 (in millions). There is no Power Solutions related activity for the three months ended March 31, 2021 and the three and six months ended March 31, 2020.

	Six Months Ended March 31, 2021
Net sales	$ —
Income from discontinued operations before income taxes	150
Provision for income taxes on discontinued operations	(26)
Income from discontinued operations attributable to noncontrolling interests, net of tax	—
Income from discontinued operations	$ 124

Assets and Liabilities Held for Sale

During the second quarter of fiscal 2021, the Company determined that certain corporate assets met the criteria to be classified as held for sale. The carrying value of these assets was $26 million at March 31, 2021.

During the third quarter of fiscal 2020, the Company determined that certain assets of the Building Solutions Asia Pacific segment met the criteria to be classified as held for sale. The estimated fair value, less costs to sell, of these assets was $153 million at March 31, 2021 and $147 million at September 30, 2020.

5. Revenue Recognition

Disaggregated Revenue

The following tables present the Company's revenues disaggregated by segment and by products and systems versus services revenue for the three and six months ended March 31, 2021 and 2020 (in millions):

	Three Months Ended March 31, 2021			Three Months Ended March 31, 2020		
	Products & Systems	Services	Total	Products & Systems	Services	Total
Building Solutions North America	$ 1,272	$ 820	$ 2,092	$ 1,357	$ 818	$ 2,175
Building Solutions EMEA/LA	429	468	897	400	450	850
Building Solutions Asia Pacific	329	274	603	271	254	525
Global Products	2,002	—	2,002	1,894	—	1,894
Total	$ 4,032	$ 1,562	$ 5,594	$ 3,922	$ 1,522	$ 5,444

	Six Months Ended March 31, 2021			Six Months Ended March 31, 2020		
	Products & Systems	Services	Total	Products & Systems	Services	Total
Building Solutions North America	$ 2,514	$ 1,612	$ 4,126	$ 2,713	$ 1,629	$ 4,342
Building Solutions EMEA/LA	855	948	1,803	857	921	1,778
Building Solutions Asia Pacific	674	544	1,218	642	512	1,154
Global Products	3,788	—	3,788	3,746	—	3,746
Total	$ 7,831	$ 3,104	$ 10,935	$ 7,958	$ 3,062	$ 11,020

The following table presents further disaggregation of Global Products segment revenues by product type for the three and six months ended March 31, 2021 and 2020 (in millions):

	Three Months Ended March 31,		Six Months Ended March 31,	
	2021	2020	2021	2020
HVAC	$ 1,402	$ 1,324	$ 2,651	$ 2,624
Fire & Security	537	511	1,025	1,003
Industrial Refrigeration	63	59	112	119
Total	$ 2,002	$ 1,894	$ 3,788	$ 3,746

Contract Balances

Contract assets relate to the Company’s right to consideration for performance obligations satisfied but not billed and consist of unbilled receivables and costs in excess of billings. Contract liabilities relate to customer payments received in advance of satisfaction of performance obligations under the contract. Contract liabilities consist of deferred revenue. 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 Company's consolidated statements of financial position (in millions):

	Location of contract balances	March 31, 2021	September 30, 2020
Contract assets - current	Accounts receivable - net	$ 1,387	$ 1,395
Contract assets - noncurrent	Other noncurrent assets	102	104
Contract liabilities - current	Deferred revenue	(1,710)	(1,435)
Contract liabilities - noncurrent	Other noncurrent liabilities	(258)	(245)
Total		$ (479)	$ (181)

For the three months ended March 31, 2021 and March 31, 2020, the Company recognized revenue of $221 million and $326 million, respectively, that was included in the beginning of period contract liability balance. For the six months ended March 31, 2021 and March 31, 2020, the Company recognized revenue of $935 million and $1,012 million, respectively, that was included in the beginning of period contract liability balance.

Performance Obligations

A performance obligation is a distinct good, service, or a 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 March 31, 2021, the aggregate amount of the transaction price allocated to remaining performance obligations was approximately $15.0 billion, of which approximately 60% 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 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 Company 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 Company recognizes the incremental costs incurred to obtain or fulfill a contract with a customer as an asset when these costs are recoverable. These costs consist primarily of sales commissions and bid/proposal costs. Costs to obtain or fulfill a contract are capitalized and amortized to revenue over the period of contract performance.

As of March 31, 2021, the Company recorded the costs to obtain or fulfill a contract of $241 million, of which $130 million is recorded within other current assets and $111 million is recorded within other noncurrent assets in the consolidated statements of financial position. As of September 30, 2020, the Company recorded the costs to obtain or fulfill a contract of $223 million, of which $119 million is recorded within other current assets and $104 million is recorded within other noncurrent assets in the consolidated statements of financial position.

During the three months ended March 31, 2021 and 2020, the Company recognized amortization expense of $47 million and $43 million, respectively, related to costs to obtain or fulfill a contract. During the six months ended March 31, 2021 and 2020, the Company recognized amortization expense of $88 million and $69 million, respectively, related to costs to obtain or fulfill a contract. There were no impairment losses recognized in the three and six months ended March 31, 2021 and 2020.

6. Accounts Receivable, Net

Receivables consist of amounts billed and currently due from customers and unbilled costs and accrued profits related to revenues on long-term contracts that have been recognized for accounting purposes but not yet billed to customers. The Company 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 Company has identified. The Company evaluates the reasonableness of the allowance for credit losses on a quarterly basis. The Company enters into supply chain financing programs to sell certain accounts receivable without recourse to third-party financial institutions. Sales of accounts receivable are reflected as a reduction of accounts receivable in the consolidated statements of financial position and the proceeds are included in cash flows from operating activities in the consolidated statements of cash flows.

Accounts receivable, net consisted of the following (in millions):

	March 31, 2021	September 30, 2020
Accounts receivable	$ 5,315	$ 5,467
Less: Allowance for expected credit losses [1]	(148)	(173)
Accounts receivable, net	$ 5,167	$ 5,294

[1] Allowance for doubtful accounts as of September 30, 2020, prior to the adoption of ASU 2016-13.

The changes in the allowance for expected credit losses related to accounts receivable for the six month period ended March 31, 2021 were as follows (in millions):

	Six Months Ended March 31, 2021
Balance as of September 30, 2020	$ 173
Provision for expected credit losses	3
Write-offs charged against the allowance for expected credit losses	(32)
Other (including impact of adoption of ASU 2016-13)	4
Balance as of March 31, 2021	$ 148

7. Leases

The Company's lease portfolio is described in Note 8, "Leases," of the notes to consolidated financial statements in its Annual Report on Form 10-K for the year ended September 30, 2020.

The following table presents supplemental consolidated statement of financial position information as of March 31, 2021 and September 30, 2020 (in millions):

	Location of lease balances	March 31, 2021	September 30, 2020
Operating lease right-of-use assets	Other noncurrent assets	$ 1,284	$ 1,190
Operating lease liabilities - current	Other current liabilities	296	332
Operating lease liabilities - noncurrent	Other noncurrent liabilities	992	875

The following table presents supplemental noncash operating lease activity for the six months ended March 31, 2021 and 2020 (in millions):

	Six Months Ended March 31, 2021	Six Months Ended March 31, 2020
Right-of-use assets obtained in exchange for operating lease liabilities	$ 303	$ 174

8. Inventories

Inventories consisted of the following (in millions):

	March 31, 2021	September 30, 2020
Raw materials and supplies	$ 676	$ 629
Work-in-process	175	142
Finished goods	1,143	1,002
Inventories	$ 1,994	$ 1,773

9. Goodwill and Other Intangible Assets

The changes in the carrying amount of goodwill in each of the Company's reportable segments for the six month period ended March 31, 2021 were as follows (in millions):

	September 30, 2020	Business Acquisitions	Business Divestitures	Currency Translation and Other	March 31, 2021
Building Solutions North America	$ 9,160	$ —	$ —	$ 42	$ 9,202
Building Solutions EMEA/LA	1,967	13	—	51	2,031
Building Solutions Asia Pacific	1,226	—	(6)	40	1,260
Global Products	5,579	—	—	52	5,631
Total	$ 17,932	$ 13	$ (6)	$ 185	$ 18,124

At September 30, 2020, accumulated goodwill impairment charges included $424 million and $47 million related to the Building Solutions North America Retail and Building Solutions EMEA/LA - Latin America reporting units, respectively.

The Company reviews goodwill for impairment during the fourth fiscal quarter or more frequently if events or changes in circumstances indicate the asset might be impaired. There were no triggering events requiring that an impairment assessment be conducted in the six months ended March 31, 2021. However, it is possible that future changes in circumstances, including a more prolonged and/or severe COVID-19 pandemic, would require the Company to record additional non-cash impairment charges.

The Company's other intangible assets, primarily from business acquisitions valued based on independent appraisals, consisted of (in millions):

	March 31, 2021			September 30, 2020		
	Gross Carrying Amount	Accumulated Amortization	Net	Gross Carrying Amount	Accumulated Amortization	Net
Definite-lived intangible assets						
Technology	$ 1,351	$ (566)	$ 785	$ 1,332	$ (497)	$ 835
Customer relationships	2,805	(1,086)	1,719	2,773	(969)	1,804
Miscellaneous	710	(312)	398	657	(268)	389
	4,866	(1,964)	2,902	4,762	(1,734)	3,028
Indefinite-lived intangible assets						
Trademarks/trade names	2,277	—	2,277	2,248	—	2,248
Miscellaneous	80	—	80	80	—	80
	2,357	—	2,357	2,328	—	2,328
Total intangible assets	$ 7,223	$ (1,964)	$ 5,259	$ 7,090	$ (1,734)	$ 5,356

Amortization of other intangible assets included within continuing operations for the three month periods ended March 31, 2021 and 2020 was $104 million and $97 million, respectively. Amortization of other intangible assets included within continuing operations for the six month periods ended March 31, 2021 and 2020 was $208 million and $193 million, respectively. Excluding the impact of any future acquisitions, the Company anticipates amortization for fiscal 2022, 2023, 2024, 2025 and 2026 will be approximately $417 million, $411 million, $395 million, $374 million and $301 million per year, respectively.

The Company reviews indefinite-lived intangible assets for impairment during the fourth fiscal quarter or more frequently if events or changes in circumstances indicate the asset might be impaired. There were no triggering events requiring that an impairment assessment be conducted in the six months ended March 31, 2021. However, it is possible that future changes in circumstances, including a more prolonged and/or severe COVID-19 pandemic, would require the Company to record additional non-cash impairment charges.

10. Significant Restructuring and Impairment Costs

To better align its resources with its growth strategies and reduce the cost structure of its global operations in certain underlying markets, the Company commits to various restructuring plans as necessary. Restructuring plans 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 Company's consolidated statements of income. The Company expects the restructuring actions to reduce cost of sales and SG&A due to reduced employee-related costs, depreciation and amortization expense.

In fiscal 2021, the Company committed to a significant restructuring plan ("2021 Plan"). During the three months ended March 31, 2021, the Company recorded $96 million of restructuring and impairment costs in the consolidated statements of income. The total amount expected to be incurred for this restructuring plan is $385 million across all segments and at Corporate. Of the restructuring and impairment costs recorded, $38 million related to the Building Solutions North America segment, $34 million related to the Global Products segment, $10 million related to the Building Solutions EMEA/LA segment, $7 million related to the Building Solutions Asia Pacific segment and $7 million related to Corporate.

The following table summarizes the changes in the Company's 2021 Plan reserve, included within other current liabilities in the consolidated statements of financial position (in millions):

	Employee Severance and Termination Benefits	Long-Lived Asset Impairments	Other	Total
Original reserve	$ 32	$ 54	$ 10	$ 96
Utilized—cash	(2)	—	(3)	(5)
Utilized—noncash	—	(54)	—	(54)
Balance at March 31, 2021	$ 30	$ —	$ 7	$ 37

In fiscal 2020, the Company committed to a significant restructuring plan ("2020 Plan") and recorded $297 million of restructuring and impairment costs in the consolidated statements of income. This is the total amount incurred to date and the total amount expected to be incurred for this restructuring plan. Of the restructuring and impairment costs recorded, $136 million related to the Global Products segment, $64 million related to the Building Solutions North America segment, $49 million related to the Building Solutions Asia Pacific segment, $43 million related to the Building Solutions EMEA/LA segment and $5 million related to Corporate. The restructuring actions are expected to be substantially complete in fiscal 2021.

The following table summarizes the changes in the Company's 2020 Plan reserve, included within other current liabilities in the consolidated statements of financial position (in millions):

	Employee Severance and Termination Benefits	Long-Lived Asset Impairments	Other	Total
Original reserve	$ 196	$ 96	$ 5	$ 297
Utilized—cash	(92)	—	(3)	(95)
Utilized—noncash	—	(96)	—	(96)
Currency translation	2	—	—	2
Balance at September 30, 2020	$ 106	$ —	$ 2	$ 108
Utilized—cash	(46)	—	(2)	(48)
Balance at March 31, 2021	$ 60	$ —	$ —	$ 60

Also included in restructuring and impairment costs in the consolidated statements of income in fiscal 2020 are goodwill impairment related to the North America Retail reporting unit of $424 million and indefinite-lived intangible asset impairments of $62 million. Refer to Note 9, "Goodwill and Other Intangible Assets," of the notes to consolidated financial statements for further information regarding goodwill impairments.

The Company's fiscal 2021 and 2020 restructuring plans included workforce reductions of approximately 8,100 employees. Restructuring charges associated with employee severance and termination benefits are paid over the severance period granted to each employee or on a lump sum basis in accordance with individual severance agreements. As of March 31, 2021, approximately 5,300 of the employees have been separated from the Company pursuant to the restructuring plans.

Company management closely monitors its overall cost structure and continually analyzes each of its businesses for opportunities to consolidate current operations, improve operating efficiencies and locate facilities in close proximity to customers. This ongoing analysis includes a review of its manufacturing, engineering and purchasing operations, as well as the overall global footprint for all its businesses.

11. Income Taxes

In calculating the provision for income taxes, the Company uses an estimate of the annual effective tax rate based upon the facts and circumstances known at each interim period. On a quarterly basis, the actual effective tax rate is adjusted, as appropriate, based upon changed facts and circumstances, if any, as compared to those forecasted at the beginning of the fiscal year and each interim period thereafter.

The statutory tax rate in Ireland is being used as a comparison since the Company is domiciled in Ireland. For the three months ended March 31, 2021, the Company's effective tax rate for continuing operations was 34% and was higher than the statutory tax rate of 12.5% primarily due to valuation allowance adjustments, the income tax effects of mark-to-market adjustments and tax rate differentials, partially offset by the benefits of continuing global tax planning initiatives. For the six months ended March 31, 2021, the Company's effective tax rate for continuing operations was 26% and was higher than the statutory tax rate of 12.5% primarily due to valuation allowance adjustments, the income tax effects of mark-to-market adjustments and tax rate differentials, partially offset by the benefits of continuing global tax planning initiatives. For the three months ended March 31, 2020, the Company's effective tax rate for continuing operations was 5% and was lower than the statutory tax rate of 12.5% primarily due to tax audit reserve adjustments and the benefits of continuing global tax planning initiatives, partially offset by tax rate differentials. For the six months ended March 31, 2020, the Company's effective tax rate for continuing operations was 15% and was higher than the statutory tax rate of 12.5% primarily due to a discrete tax charge related to the remeasurement of deferred tax assets and liabilities as a result of Swiss tax reform and tax rate differentials, partially offset by tax audit reserve adjustments and the benefits of continuing global tax planning initiatives.

Valuation Allowance

The Company reviews the realizability of its deferred tax assets 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 Company’s valuation allowances may be necessary.

In the second quarter of fiscal 2021, due to changes in forecasted taxable income, the Company recorded a discrete tax charge of $105 million related to valuation allowances on certain Mexico deferred tax assets now considered unrealizable.

Uncertain Tax Positions

At September 30, 2020, the Company had gross tax effected unrecognized tax benefits of $2,528 million, of which $2,132 million, if recognized, would impact the effective tax rate. Total net accrued interest at September 30, 2020 was approximately $205 million (net of tax benefit). Total net accrued interest during the six months ended March 31, 2021 and 2020 was approximately $24 million (net of tax benefit) and approximately $35 million (net of tax benefit), respectively. The Company recognizes interest and penalties related to unrecognized tax benefits as a component of income tax expense.

In the second quarter of fiscal 2020, tax audit resolutions resulted in a $22 million net benefit to income tax expense.

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

Tax Jurisdiction	Tax Years Covered
Belgium	2015 - 2020
China	2017 - 2019
Germany	2007 - 2018
Luxembourg	2017 - 2018
Mexico	2015 - 2020
Taiwan	2019
United Kingdom	2014 - 2015, 2018

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

In the second quarter of fiscal 2021, the Company recorded pension mark-to-market gains of $207 million. The gain generated tax expense of $53 million, which reflects the Company's current tax position in the impacted jurisdictions.

In the second quarter of fiscal 2021, the Company recorded $96 million of restructuring and impairment costs. Refer to Note 10, "Significant Restructuring and Impairment Costs," of the notes to consolidated financial statements for additional information. The restructuring costs generated a $15 million tax benefit, which reflects the Company's current tax position in the impacted jurisdictions.

In the second quarter of fiscal 2020, the Company recorded $62 million of restructuring and impairment costs. Refer to Note 10, "Significant Restructuring and Impairment Costs," of the notes to consolidated financial statements for additional information. The restructuring costs generated a $4 million tax benefit, which reflects the Company's current tax position in the impacted jurisdictions.

In the first quarter of fiscal 2020, the Company recorded $111 million of restructuring and impairment costs. Refer to Note 10, "Significant Restructuring and Impairment Costs," of the notes to consolidated financial statements for additional information. The restructuring costs generated a $16 million tax benefit, which reflects the Company's current tax position in the impacted jurisdictions.

Impacts of Tax Legislation

On March 27, 2020, in response to the COVID-19 pandemic, the "Coronavirus Aid, Relief and Economic Security Act" ("CARES") was signed into law by the President of the United States. The CARES Act includes, among other things, U.S. corporate income tax provisions related to net operating loss carryback periods, alternative minimum tax credits, modifications to interest deduction limitations and technical corrections on tax depreciation methods for qualified improvement property. A majority of non-U.S. countries have also introduced various COVID-19 related corporate income tax relief provisions. The Company does not expect either the U.S. or non-U.S. corporate income tax provisions to have a material effect on its financial statements.

In the first quarter of fiscal 2020, the Company recorded a noncash discrete tax charge of $30 million due to the remeasurement of deferred tax assets and liabilities related to Switzerland and the canton of Schaffhausen. On September 28, 2018, the Swiss Parliament approved the Federal Act on Tax Reform and AHV Financing ("TRAF"), which was subsequently approved by the Swiss electorate on May 19, 2019. During the fourth quarter of fiscal 2019, the Swiss Federal Council enacted TRAF which became effective for the Company on January 1, 2020. The impacts of the federal enactment did not have a material impact to the Company's financial statements. TRAF also provides for parameters which enable the Swiss cantons to adjust tax rates and establish new regulations for companies. As of September 30, 2019, the canton of Schaffhausen had not concluded its public referendum; however, the enactment did occur during the first quarter of fiscal 2020.

During the six months ended March 31, 2021 and 2020, other tax legislation was adopted in various jurisdictions. These law changes did not have a material impact on the Company's consolidated financial statements.

12. Pension and Postretirement Plans

The components of the Company's net periodic benefit costs from continuing operations associated with its defined benefit pension and postretirement plans, which are primarily recorded in selling, general and administrative expenses in the consolidated statements of income, are shown in the tables below in accordance with ASC 715, "Compensation – Retirement Benefits" (in millions):

	U.S. Pension Plans			
	Three Months Ended March 31,		Six Months Ended March 31,	
	2021	2020	2021	2020
Interest cost	$ 11	$ 19	$ 22	$ 37
Expected return on plan assets	(42)	(46)	(84)	(90)
Net actuarial gain	(203)	—	(203)	—
Settlement gain	(4)	—	(4)	—
Net periodic benefit credit	$ (238)	$ (27)	$ (269)	$ (53)

	Non-U.S. Pension Plans			
	Three Months Ended March 31,		Six Months Ended March 31,	
	2021	2020	2021	2020
Service cost	$ 6	$ 7	$ 13	$ 13
Interest cost	8	9	16	18
Expected return on plan assets	(27)	(29)	(55)	(56)
Amortization of prior service cost	—	1	—	1
Net periodic benefit credit	$ (13)	$ (12)	$ (26)	$ (24)

	Postretirement Benefits			
	Three Months Ended March 31,		Six Months Ended March 31,	
	2021	2020	2021	2020
Service cost	$ 1	$ —	$ 1	$ —
Interest cost	—	1	1	2
Expected return on plan assets	(2)	(2)	(4)	(4)
Amortization of prior service credit	(1)	—	(2)	(1)
Net periodic benefit credit	$ (2)	$ (1)	$ (4)	$ (3)

During the three months ended March 31, 2021, the amount of cumulative fiscal 2021 lump sum payouts triggered a remeasurement event for certain U.S. pension plans resulting in the recognition of net actuarial gains of $203 million, primarily due to an increase in discount rates and favorable plan asset performance.

13. Debt and Financing Arrangements

Net Financing Charges

Net financing charges consisted of the following (in millions):

	Three Months Ended March 31,		Six Months Ended March 31,	
	2021	2020	2021	2020
Interest expense, net of capitalized interest costs	$ 53	$ 62	$ 112	$ 124
Banking fees and bond cost amortization	4	5	12	10
Interest income	(3)	(5)	(6)	(18)
Net foreign exchange results for financing activities	(10)	(3)	(15)	(5)
Net financing charges	$ 44	$ 59	$ 103	$ 111

In March 2021, the Company entered into a bank term loan arrangement totaling $235 million due in March 2022 and retired $257 million in principal amount, plus accrued interest, of its 4.25% fixed rate notes that expired in March 2021.

As of March 31, 2021, the Company had a syndicated $2.5 billion committed revolving credit facility, which is scheduled to expire in December 2024, and a syndicated $500 million committed revolving credit facility, which was renewed in December 2020 and is now scheduled to expire in December 2021. As of March 31, 2021, there were no draws on the facilities.

14. Stock-Based Compensation

On March 10, 2021, the shareholders of the Company approved the Johnson Controls International plc 2021 Equity and Incentive Plan and terminated the 2012 Share and Incentive Plan, as amended in September 2016 (collectively, the "Plans"). Both plans authorize 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 Company's Board of Directors determines the types of awards to be granted to individual participants and the terms and conditions of the awards. Awards are typically granted annually in the Company’s fiscal first quarter.

A summary of the stock-based awards granted during the six month periods ended March 31, 2021 and 2020 is presented below:

	Six Months Ended March 31,			
	2021		2020	
	Number Granted	Weighted Average Grant Date Fair Value	Number Granted	Weighted Average Grant Date Fair Value
Stock options	932,678	$ 9.36	1,347,310	$ 7.29
Stock appreciation rights	35,254	9.36	—	—
Restricted stock/units	1,697,257	46.20	1,864,026	41.55
Performance shares	410,934	50.53	476,939	42.48

Stock Options

Stock options are granted with an exercise price equal to the market price of the Company'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 assumptions noted in the following table. The expected life of options represents the period of time that options granted are expected to be outstanding, assessed separately for executives and non-executives. 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. The expected volatility is based on the historical volatility of the Company's stock since October 2016 blended with the historical volatility of 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 Company's ordinary shares as of the grant date. The Company uses historical data to estimate option exercises and employee terminations within the valuation model.

	Six Months Ended March 31,	
	2021	2020
Expected life of option (years)	6.5	6.5
Risk-free interest rate	0.6%	1.67%
Expected volatility of the Company's stock	27.6%	22.4%
Expected dividend yield on the Company's stock	2.28%	2.49%

Stock Appreciation Rights (SARs)

SARs vest under the same terms and conditions as stock option awards; however, they are settled in cash for the difference between the market price on the date of the exercise and the exercise price. As a result, SARs are recorded in the Company's consolidated financial statements of financial position as a liability until the date of exercise. The fair value of each SAR award is estimated using a similar method described for stock options. The fair value of each SAR award is recalculated at the end of each reporting period and the liability and expense are adjusted based on the new fair value.

Restricted (Non-vested) Stock / Units

Restricted stock or restricted stock units are typically share settled unless the employee is a non-U.S. employee or elects to defer settlement until retirement at which point the award would be settled in cash. Restricted awards typically vest over a period of three years from the grant date. The Plans allow for different vesting terms on specific grants with approval by the Board of Directors. The fair value of each share-settled restricted award is based on the closing market value of the Company'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 Company'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 three years as well as on the award holder's continuous employment until the vesting date. The PSUs are also indexed to the achievement of specified levels of total shareholder return versus a peer group over the performance period. Each PSU that is earned is settled with shares of the Company's ordinary shares following the completion of the performance period, unless the award holder elected to defer a portion or all of the award until retirement which would then be settled in cash.

The fair value of each PSU is estimated on the date of grant using of a Monte Carlo simulation that uses the assumptions noted in the following table. 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 Company's stock over the most recent three-year period as of the grant date.

	Six Months Ended March 31,	
	2021	2020
Risk-free interest rate	0.20%	1.60%
Expected volatility of the Company’s stock	30.9%	21.8%

15. Earnings Per Share

The Company 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 Company 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 Company has not yet recognized. For unvested restricted stock and unvested performance share awards, assumed proceeds under the treasury stock method include unamortized compensation cost.

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

	Three Months Ended March 31,		Six Months Ended March 31,	
	2021	2020	2021	2020
Income Available to Ordinary Shareholders				
Income from continuing operations	$ 343	$ 213	$ 670	$ 372
Income from discontinued operations	—	—	124	—
Basic and diluted income available to shareholders	$ 343	$ 213	$ 794	$ 372
Weighted Average Shares Outstanding				
Basic weighted average shares outstanding	717.1	754.8	720.1	762.4
Effect of dilutive securities:				
Stock options, unvested restricted stock and unvested performance share awards	4.2	2.3	3.8	3.2
Diluted weighted average shares outstanding	721.3	757.1	723.9	765.6
Antidilutive Securities				
Options to purchase shares	—	1.4	0.1	0.8

16. Equity and Noncontrolling Interests

Other comprehensive income includes activity relating to discontinued operations. The following schedules present changes in consolidated equity attributable to Johnson Controls and noncontrolling interests (in millions, net of tax):

	Three Months Ended March 31, 2021			Three Months Ended March 31, 2020		
	Equity Attributable to Johnson Controls International plc	Equity Attributable to Noncontrolling Interests	Total Equity	Equity Attributable to Johnson Controls International plc	Equity Attributable to Noncontrolling Interests	Total Equity
Beginning balance, December 31	$ 17,656	$ 1,167	$ 18,823	$ 19,329	$ 1,102	$ 20,431
Total comprehensive income (loss):						
Net income	343	54	397	213	23	236
Foreign currency translation adjustments	88	(25)	63	(471)	(23)	(494)
Realized and unrealized gains (losses) on derivatives	6	2	8	(10)	—	(10)
Other comprehensive income (loss)	94	(23)	71	(481)	(23)	(504)
Comprehensive income (loss)	437	31	468	(268)	—	(268)
Other changes in equity:						
Cash dividends—ordinary shares	(195)	—	(195)	(194)	—	(194)
Dividends attributable to noncontrolling interests	—	(133)	(133)	—	(98)	(98)
Repurchases and retirements of ordinary shares	(315)	—	(315)	(816)	—	(816)
Change in noncontrolling interest share	(8)	(6)	(14)	—	—	—
Other, including options exercised	123	—	123	33	—	33
Ending balance, March 31	$ 17,698	$ 1,059	$ 18,757	$ 18,084	$ 1,004	$ 19,088

	Six Months Ended March 31, 2021			Six Months Ended March 31, 2020		
	Equity Attributable to Johnson Controls International plc	Equity Attributable to Noncontrolling Interests	Total Equity	Equity Attributable to Johnson Controls International plc	Equity Attributable to Noncontrolling Interests	Total Equity
Beginning balance, September 30	$ 17,447	$ 1,086	$ 18,533	$ 19,766	$ 1,063	$ 20,829
Total comprehensive income:						
Net income	794	99	893	372	55	427
Foreign currency translation adjustments	360	11	371	(220)	(13)	(233)
Realized and unrealized gains (losses) on derivatives	7	2	9	(5)	2	(3)
Pension and postretirement plans	(1)	—	(1)	(1)	—	(1)
Other comprehensive income (loss)	366	13	379	(226)	(11)	(237)
Comprehensive income	1,160	112	1,272	146	44	190
Other changes in equity:						
Cash dividends—ordinary shares	(384)	—	(384)	(395)	—	(395)
Dividends attributable to noncontrolling interests	—	(133)	(133)	—	(103)	(103)
Repurchases and retirements of ordinary shares	(661)	—	(661)	(1,467)	—	(1,467)
Change in noncontrolling interest share	(8)	(6)	(14)	—	—	—
Adoption of ASC 842	—	—	—	(5)	—	(5)
Adoption of ASU 2016-13	(4)	—	(4)	—	—	—
Other, including options exercised	148	—	148	39	—	39
Ending balance, March 31	$ 17,698	$ 1,059	$ 18,757	$ 18,084	$ 1,004	$ 19,088

During the quarter ended December 31, 2020, the Company recorded $4 million to beginning retained earnings for the cumulative effect of adopting ASU 2016-13, "Financial Instruments - Credit Losses."

During the quarter ended December 31, 2019, the Company adopted ASC 842, "Leases." As a result, the Company recorded $5 million to beginning retained earnings, which relates primarily to adoption day impairment of previously exited facilities.

For the three and six months ended March 31, 2021, the Company repurchased and immediately retired $315 million and $661 million of its ordinary shares, respectively. For the three and six months ended March 31, 2020, the Company repurchased and immediately retired $816 million and $1,467 million of its ordinary shares, respectively. In March 2021, the Company's Board of Directors approved a $4.0 billion increase to the Company's share repurchase authorization, adding to the $2.0 billion remaining as of December 31, 2020 under the prior share repurchase authorization approved in 2019. As of March 31, 2021, approximately $5.7 billion remains available under the Company's share repurchase authorization.

The following schedules present changes in accumulated other comprehensive income ("AOCI") attributable to Johnson Controls (in millions, net of tax):

	Three Months Ended March 31,	
	2021	2020
Foreign currency translation adjustments ("CTA")		
Balance at beginning of period	$ (506)	$ (534)
Aggregate adjustment for the period (net of tax effect of $0 and $0)	88	(471)
Balance at end of period	(418)	(1,005)
Realized and unrealized gains (losses) on derivatives		
Balance at beginning of period	3	3
Current period changes in fair value (net of tax effect of $2 and $(3))	5	(8)
Reclassification to income (net of tax effect of $0 and $0) *	1	(2)
Balance at end of period	9	(7)
Pension and postretirement plans		
Balance at beginning of period	(1)	(9)
Reclassification to income (net of tax effect of $0 and $0)	—	—
Balance at end of period	(1)	(9)
Accumulated other comprehensive loss, end of period	$ (410)	$ (1,021)

	Six Months Ended March 31, 2021	Six Months Ended March 31, 2020
CTA		
Balance at beginning of period	$ (778)	$ (785)
Aggregate adjustment for the period (net of tax effect of $0 and $0)	360	(220)
Balance at end of period	(418)	(1,005)
Realized and unrealized gains (losses) on derivatives		
Balance at beginning of period	2	(2)
Current period changes in fair value (net of tax effect of $4 and $(1))	7	(3)
Reclassification to income (net of tax effect of $0 and $0) *	—	(2)
Balance at end of period	9	(7)
Pension and postretirement plans		
Balance at beginning of period	—	(8)
Reclassification to income (net of tax effect of $0 and $0)	(1)	(1)
Balance at end of period	(1)	(9)
Accumulated other comprehensive loss, end of period	$ (410)	$ (1,021)

* Refer to Note 17, "Derivative Instruments and Hedging Activities," of the notes to consolidated financial statements for disclosure of the line items in the consolidated statements of income affected by reclassifications from AOCI into income related to derivatives.

17. Derivative Instruments and Hedging Activities

The Company selectively uses derivative instruments to reduce market risk associated with changes in foreign currency, commodities, stock-based compensation liabilities and interest rates. Under Company policy, the use of derivatives is restricted to those intended for hedging purposes; the use of any derivative instrument for speculative purposes is strictly prohibited. A description of each type of derivative utilized by the Company to manage risk is included in the following paragraphs. In addition, refer to Note 18, "Fair Value Measurements," of the notes to consolidated financial statements for information related to the fair value measurements and valuation methods utilized by the Company for each derivative type.

Cash Flow Hedges

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

The Company selectively hedges anticipated transactions that are subject to commodity price risk, primarily using commodity hedge contracts, to minimize overall price risk associated with the Company’s 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 three and six months ended March 31, 2021 and 2020.

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

	Volume Outstanding as of	
Commodity	March 31, 2021	September 30, 2020
Copper	2,783	2,497
Aluminum	3,133	3,036

Net Investment Hedges

The Company enters into foreign currency denominated debt obligations to selectively hedge portions of its net investment in non-U.S. subsidiaries. The currency effects of the debt obligations are reflected in the AOCI account within shareholders' equity attributable to Johnson Controls ordinary shareholders where they offset currency gains and losses recorded on the Company's net investments globally. At March 31, 2021 and September 30, 2020, the Company had 888 million euro, 500 million euro, 500 million euro, 423 million euro and 54 million euro in bonds designated as net investment hedges of a portion of the Company's net investment in European subsidiaries and 25 billion yen of foreign denominated debt designated as net investment hedge of a portion of the Company's net investment in Japanese subsidiaries.

Derivatives Not Designated as Hedging Instruments

The Company selectively uses equity swaps to reduce market risk associated with certain of its stock-based compensation plans, such as its deferred compensation plans. These equity compensation liabilities increase as the Company's stock price increases and decrease as the Company's stock price decreases. In contrast, the value of the swap agreement moves in the opposite direction of these liabilities, allowing the Company to fix a portion of the liabilities at a stated amount. The Company hedged approximately 1.4 million shares of its ordinary shares, which have a cost basis of $58 million, as of March 31, 2021 and 1.4 million shares, which have a cost basis of $60 million, as of September 30, 2020.

The Company also holds certain foreign currency forward and option contracts not designated as hedging instruments under ASC 815. The change in fair value of these foreign currency exchange derivatives are recorded in the consolidated statements of income in the period in which they occur.

Fair Value of Derivative Instruments

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

	Derivatives and Hedging Activities Designated as Hedging Instruments under ASC 815		Derivatives and Hedging Activities Not Designated as Hedging Instruments under ASC 815	
	March 31, 2021	September 30, 2020	March 31, 2021	September 30, 2020
Other current assets				
Foreign currency exchange derivatives	$ 20	$ 10	$ 57	$ 17
Commodity derivatives	3	2	—	—
Other noncurrent assets				
Equity swap	—	—	82	58
Total assets	$ 23	$ 12	$ 139	$ 75
Other current liabilities				
Foreign currency exchange derivatives	$ 7	$ 10	$ 3	$ —
Long-term debt				
Foreign currency denominated debt	3,002	3,010	—	—
Total liabilities	$ 3,009	$ 3,020	$ 3	$ —

Counterparty Credit Risk

The use of derivative financial instruments exposes the Company to counterparty credit risk. The Company 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 Company deals with major banks worldwide having strong investment grade long-term credit ratings. To further reduce the risk of loss, the Company generally enters into International Swaps and Derivatives Association ("ISDA") master netting agreements with substantially all of its counterparties. The Company 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 Company has not elected to offset the fair value positions of the derivative contracts recorded in the consolidated statements of financial position.

The Company'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 Company or the counterparties. The Company'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 Company 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 Company.

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

	Fair Value of Assets		Fair Value of Liabilities	
	March 31, 2021	September 30, 2020	March 31, 2021	September 30, 2020
Gross amount recognized	$ 162	$ 87	$ 3,012	$ 3,020
Gross amount eligible for offsetting	(10)	(10)	(10)	(10)
Net amount	$ 152	$ 77	$ 3,002	$ 3,010

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 for the three and six months ended March 31, 2021 and 2020 (in millions):

Derivatives in ASC 815 Cash Flow Hedging Relationships	Three Months Ended March 31, 2021	Three Months Ended March 31, 2020	Six Months Ended March 31, 2021	Six Months Ended March 31, 2020
Foreign currency exchange derivatives	$ 10	$ (7)	$ 13	$ 2
Commodity derivatives	—	(4)	1	(3)
Total	$ 10	$ (11)	$ 14	$ (1)

The following table presents the location and amount of the pre-tax gains (losses) on cash flow hedges reclassified from AOCI into the Company's consolidated statements of income for the three and six months ended March 31, 2021 and 2020 (in millions):

Derivatives in ASC 815 Cash Flow Hedging Relationships	Location of Gain (Loss) Reclassified from AOCI into Income	Three Months Ended March 31, 2021	Three Months Ended March 31, 2020	Six Months Ended March 31, 2021	Six Months Ended March 31, 2020
Foreign currency exchange derivatives	Cost of sales	$ 1	$ 2	$ 3	$ 3
Commodity derivatives	Cost of sales	(2)	—	(3)	(1)
Total		$ (1)	$ 2	$ —	$ 2

The following table presents the location and amount of pre-tax gains (losses) on derivatives not designated as hedging instruments recognized in the Company's consolidated statements of income for the three and six months ended March 31, 2021 and 2020 (in millions):

		Amount of Gain (Loss) Recognized in Income on Derivative			
Derivatives Not Designated as Hedging Instruments under ASC 815	Location of Gain (Loss) Recognized in Income on Derivative	Three Months Ended March 31, 2021	Three Months Ended March 31, 2020	Six Months Ended March 31, 2021	Six Months Ended March 31, 2020
Foreign currency exchange derivatives	Cost of sales	$ 2	$ 4	$ (4)	$ 4
Foreign currency exchange derivatives	Selling, general and administrative	3	—	1	—
Foreign currency exchange derivatives	Net financing charges	100	(10)	145	49
Equity swap	Selling, general and administrative	18	(20)	24	(24)
Total		$ 123	$ (26)	$ 166	$ 29

Pre-tax gains on net investment hedges recorded in CTA within other comprehensive income (loss) were $144 million and $46 million for the three months ended March 31, 2021 and 2020, respectively. Pre-tax gains (losses) on net investment hedges recorded in CTA within other comprehensive income (loss) were $9 million and $(12) million for the six months ended March 31, 2021 and 2020, respectively. For the three and six months ended March 31, 2021 and 2020, no gains or losses were reclassified from CTA into income.

18. Fair Value Measurements

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.

Recurring Fair Value Measurements

The following tables present the Company's fair value hierarchy for those assets and liabilities measured at fair value as of March 31, 2021 and September 30, 2020 (in millions):

		Fair Value Measurements Using:		
	Total as of March 31, 2021	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	$ 77	$ —	$ 77	$ —
Commodity derivatives	3	—	3	—
Other noncurrent assets				
Deferred compensation plan assets	72	72	—	—
Exchange traded funds (fixed income)[1]	147	147	—	—
Exchange traded funds (equity)[1]	157	157	—	—
Equity swap	82	—	82	—
Total assets	$ 538	$ 376	$ 162	$ —
Other current liabilities				
Foreign currency exchange derivatives	$ 10	$ —	$ 10	$ —
Total liabilities	$ 10	$ —	$ 10	$ —

	Fair Value Measurements Using:			
	Total as of September 30, 2020	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	$ 27	$ —	$ 27	$ —
Exchange traded funds (fixed income)[1]	19	19	—	—
Commodity derivatives	2	—	2	—
Other noncurrent assets				
Deferred compensation plan assets	63	63	—	—
Exchange traded funds (fixed income)[1]	143	143	—	—
Exchange traded funds (equity)[1]	129	129	—	—
Equity swap	58	—	58	—
Total assets	$ 441	$ 354	$ 87	$ —
Other current liabilities				
Foreign currency exchange derivatives	$ 10	$ —	$ 10	$ —
Total liabilities	$ 10	$ —	$ 10	$ —

[1] Classified as restricted investments for payment of asbestos liabilities. See Note 22, "Commitments and Contingencies," of the notes to consolidated financial statements for further details.

Valuation Methods

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

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

Equity swaps: The equity swaps are valued under a market approach as the fair value of the swaps is equal to the Company’s stock price at the reporting period date.

Deferred compensation plan assets: Assets held in the deferred compensation plans will be used to pay benefits under certain of the Company'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 statements of income where they offset unrealized gains and losses on the related deferred compensation plan liability.

Investments in exchange traded funds: Investments in exchange traded funds are valued using a market approach based on the quoted market prices, where available, or broker/dealer quotes of identical or comparable instruments. Refer to Note 22, "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 statements of income for the three and six months ended March 31, 2021 and 2020 that relate to equity securities still held at March 31, 2021 and 2020 (in millions):

	Three Months Ended March 31,		Six Months Ended March 31,	
	2021	2020	2021	2020
Deferred compensation plan assets	$ 2	$ (10)	$ 7	$ (7)
Investments in exchange traded funds	2	(32)	23	(22)

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. At March 31, 2021, the fair value of long-term debt was $8.1 billion, including public debt of $7.9 billion and other long-term debt of $0.2 billion. At September 30, 2020, the fair value of long-term debt was $8.6 billion, including public debt of $8.4 billion and other long-term debt of $0.2 billion. 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.

19. Impairment of Long-Lived Assets

The Company reviews long-lived assets, including right-of-use assets under operating leases, other tangible assets and intangible assets with definitive lives, for impairment whenever events or changes in circumstances indicate that the asset's carrying amount may not be recoverable. The Company 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."

The Company groups assets and liabilities 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 Company 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.

In the second quarter of fiscal 2021, the Company concluded it had a triggering event requiring assessment of impairment for certain of its long-lived assets in conjunction with its restructuring actions announced in fiscal 2021. As a result, the Company reviewed the long-lived assets for impairment and recorded $54 million of asset impairment charges within restructuring and impairment costs in the consolidated statements of income. Of the total impairment charges, $29 million related to the Building Solutions North America segment, $16 million related to the Global Products segment, $5 million related to Corporate assets and $4 million related to the Building Solutions Asia Pacific segment. Refer to Note 10, "Significant Restructuring and Impairment Costs," of the notes to consolidated financial statements for additional information. The impairments were measured under a market approach utilizing an appraisal to determine fair values of the impaired assets. This method is consistent with the methods the Company employed in prior periods to value other long-lived assets. 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."

In fiscal 2020, the Company concluded it had triggering events requiring assessment of impairment for certain of its long-lived assets caused by the economic impacts of the COVID-19 pandemic on the North America Retail reporting unit. The Company performed a quantitative impairment analysis and determined there was no impairment of long-lived assets as of September 30, 2020.

In the first quarter of fiscal 2020, the Company concluded it had a triggering event requiring assessment of impairment for certain of its long-lived assets in conjunction with its restructuring actions announced in fiscal 2020. As a result, the Company reviewed the long-lived assets for impairment and recorded $39 million of asset impairment charges within restructuring and impairment costs in the consolidated statements of income. Of the total impairment charges, $33 million related to the Global Products segment and $6 million related to the Building Solutions North America segment. Refer to Note 10, "Significant Restructuring and Impairment Costs," of the notes to consolidated financial statements for additional information. The impairments were measured under a market approach utilizing an appraisal to determine fair values of the impaired assets. This method is consistent with the methods the Company employed in prior periods to value other long-lived assets. 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."

In addition, in the first quarter of fiscal 2020, the Company recorded an impairment charge of $15 million to write down the carrying value of the assets held for sale to the current fair value less any costs related to the plans to dispose of a business within its Global Products segment that met the criteria to be classified as held for sale. 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."

At March 31, 2021 and 2020, the Company concluded it did not have any other triggering events requiring assessment of impairment of its long-lived assets.

Refer to Note 9, "Goodwill and Other Intangible Assets," and Note 10, "Significant Restructuring and Impairment Costs," of the notes to consolidated financial statements for further information regarding the indefinite-lived intangible and goodwill impairment charges recorded in fiscal 2020.

20. 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 Company has determined that it has four reportable segments for financial reporting purposes.

- *Building Solutions North America:* Building Solutions North America designs, sells, installs, and services HVAC, controls, refrigeration, integrated electronic security, and integrated fire detection and suppression systems for commercial, industrial, retail, small business, institutional and governmental customers in North America. Building Solutions North America also provides energy efficiency solutions and technical services, including inspection, scheduled maintenance, and repair and replacement of mechanical and control systems, as well as data-driven "smart building" solutions, to non-residential building and industrial applications in the North American marketplace.

- *Building Solutions EMEA/LA:* Building Solutions EMEA/LA designs, sells, installs, and services HVAC, controls, refrigeration, integrated electronic security, integrated fire detection and suppression systems, and provides technical services, including data-driven "smart building" solutions, to markets in Europe, the Middle East, Africa and Latin America.

- *Building Solutions Asia Pacific:* Building Solutions Asia Pacific designs, sells, installs, and services HVAC, controls, refrigeration, integrated electronic security, integrated fire detection and suppression systems, and provides technical services, including data-driven "smart building" solutions, to the Asia Pacific marketplace.

- *Global Products:* Global Products designs and produces heating and air conditioning for residential and commercial applications, and markets products and refrigeration systems to replacement and new construction market customers globally. The Global Products business also designs, manufactures and sells fire protection and security products, including intrusion security, anti-theft devices, and access control and video management systems, for commercial, industrial, retail, residential, small business, institutional and governmental customers worldwide. Global Products also includes the Johnson Controls-Hitachi joint venture.

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 the net mark-to-market adjustments related to pension and postretirement plans and restricted asbestos investments.

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

	Net Sales			
	Three Months Ended March 31,		Six Months Ended March 31,	
	2021	2020	2021	2020
Building Solutions North America	$ 2,092	$ 2,175	$ 4,126	$ 4,342
Building Solutions EMEA/LA	897	850	1,803	1,778
Building Solutions Asia Pacific	603	525	1,218	1,154
Global Products	2,002	1,894	3,788	3,746
Total net sales	$ 5,594	$ 5,444	$ 10,935	$ 11,020

	Segment EBITA			
	Three Months Ended March 31,		Six Months Ended March 31,	
	2021	2020	2021	2020
Building Solutions North America	$ 266	$ 251	$ 521	$ 509
Building Solutions EMEA/LA	86	85	181	175
Building Solutions Asia Pacific	74	65	153	137
Global Products	285	216	498	419
Total segment EBITA	$ 711	$ 617	$ 1,353	$ 1,240
Corporate expenses	$ (70)	$ (118)	$ (137)	$ (236)
Amortization of intangible assets	(104)	(97)	(208)	(193)
Restructuring and impairment costs	(96)	(62)	(96)	(173)
Net mark-to-market adjustments	209	(32)	230	(22)
Net financing charges	(44)	(59)	(103)	(111)
Income from continuing operations before income taxes	$ 606	$ 249	$ 1,039	$ 505

21. Guarantees

Certain of the Company'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 Company's financial position, results of operations or cash flows.

The Company offers warranties to its customers depending upon the specific product and terms of the customer purchase agreement. A typical warranty program requires that the Company replace defective products within a specified time period from the date of sale. The Company 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 Company's warranty provisions are adjusted as necessary. The Company monitors its warranty activity and adjusts its reserve estimates when it is probable that future warranty costs will be different than those estimates.

The Company's product warranty liability for continuing operations is recorded in the consolidated statements of financial position in other current liabilities if the warranty is less than one year and in other noncurrent liabilities if the warranty extends longer than one year.

The changes in the carrying amount of the Company's total product warranty liability for continuing operations, for the six months ended March 31, 2021 and 2020 were as follows (in millions). Extended warranty for which deferred revenue is recorded is not included in the table below, but rather included within the contract balances table in the Note 5, "Revenue Recognition," of the notes to consolidated financial statements for all periods presented.

	Six Months Ended March 31,	
	2021	2020
Balance at beginning of period	$ 167	$ 156
Accruals for warranties issued during the period	39	32
Accruals from acquisition and divestitures	(1)	—
Accruals related to pre-existing warranties	14	(3)
Settlements made (in cash or in kind) during the period	(33)	(30)
Currency translation	—	(1)
Balance at end of period	$ 186	$ 154

22. Commitments and Contingencies

Environmental Matters

The Company accrues for potential environmental liabilities when it is probable a liability has been incurred and the amount of the liability is reasonably estimable. As of March 31, 2021, reserves for environmental liabilities for continuing operations totaled $112 million, of which $46 million was recorded within other current liabilities and $66 million was recorded within other noncurrent liabilities in the consolidated statements of financial position. Reserves for environmental liabilities for continuing operations totaled $130 million at September 30, 2020, of which $61 million was recorded within other current liabilities and $69 million was recorded within other noncurrent liabilities in the consolidated statements of financial position.

Tyco Fire Products L.P. ("Tyco Fire Products"), in coordination with the Wisconsin Department of Natural Resources ("WDNR"), has been conducting an environmental assessment of its Fire Technology Center ("FTC") located in Marinette, Wisconsin and surrounding areas in the City of Marinette and Town of Peshtigo, Wisconsin. In connection with the assessment, perfluorooctane sulfonate ("PFOS") and perfluorooctanoic acid ("PFOA") and/or other per- and poly fluorinated substances ("PFAS") have been detected at the FTC and in groundwater and surface water outside of the boundaries of the FTC. Tyco Fire Products continues to investigate the extent of potential migration of these compounds and is working with WDNR to address these issues insofar as they related to this migration.

During the third quarter of 2019, the Company increased its environmental reserves, which included $140 million related to remediation efforts to be undertaken to address contamination relating to fire-fighting foams containing PFAS compounds at or near the FTC, as well as the continued remediation of arsenic and other contaminants at the Tyco Fire Products Stanton Street manufacturing facility also located in Marinette, Wisconsin (the "Stanton Street Facility"). The Company is not able to estimate a possible loss or range of loss in excess of the established accruals at this time.

A substantial portion of the increased reserves relates to remediation resulting from the use of fire-fighting foams containing PFAS at the FTC. The use of fire-fighting foams at the FTC was primarily for training and testing purposes in order to ensure that such products sold by the Company'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. The reserve was recorded in the quarter ended June 30, 2019 following a comprehensive review by independent environmental consultants related to the presence of PFAS at or near the FTC, as well as remediation discussions with the WDNR.

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. On August 22, 2019, the Governor of Wisconsin issued an executive order that, among other things, directed the WDNR to create a PFAS Coordinating Council and to work with other Wisconsin agencies (including WDHS) to establish final groundwater quality standards based on the WDHS's prior recommendation.

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. Tyco Fire Products voluntarily responded to the WDNR's letter to request additional necessary information. On October 16, 2019, the WDNR issued a "Notice of Noncompliance" to Tyco Fire Products and Johnson Controls, Inc. regarding the WDNR's July 3, 2019 letter. The letter stated that "if you fail to take the actions required by Wis. Stat. § 292.11 to address this contamination, the DNR will move forward under Wis. Stat. § 292.31 to implement the SI workplan and evaluate further environmental enforcement actions and cost recovery under Wis. Stat. § 292.31(8)." 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. 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.

In December 2020, the Company received a notice from the Wisconsin Department of Justice ("WDOJ") that the WDOJ was considering a potential civil enforcement action against the Company relating to environmental matters at the FTC including, but not limited to, the investigation and remediation of PFAS at or near the FTC as discussed in the prior paragraphs and the Company's alleged failure to timely report the presence of PFAS chemicals at the FTC. Such enforcement action could seek civil monetary penalties and/or injunctive relief. The Company is presently unable to predict the duration, scope, or results of any potential civil enforcement action that may result, the consequences of any such action, or the nature of any resolution of these potential claims with the WDOJ.

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 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 of a groundwater extraction and treatment system and the dredging and offsite disposal of treated river sediment. The increase in the reserve related to the Stanton Street Facility in the third quarter of 2019 was recorded following a further review of the Consent Order, which resulted in the identification of several structural upgrades needed to preserve the effectiveness of prior remediation efforts. In addition to ongoing remediation activities, the Company is also working with the WDNR to investigate the presence of PFAS at or near the Stanton Street Facility as part of the evaluation of PFAS in the Marinette region.

Potential environmental liabilities accrued by the Company do not take into consideration possible recoveries of future insurance proceeds. They do, however, take into account the likely share other parties will bear at remediation sites. It is difficult 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 uncertainty as to the nature and scope of the investigations and remediation to be conducted, 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 Company 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. At March 31, 2021 and September 30, 2020, the Company recorded conditional asset retirement obligations for continuing operations of $29 million and $29 million, respectively.

Asbestos Matters

The Company 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.

As of March 31, 2021, the Company's estimated asbestos-related net liability recorded on a discounted basis within the Company's consolidated statements of financial position was $93 million. The net liability within the consolidated statements of financial position was comprised of a liability for pending and future claims and related defense costs of $470 million, of which $49 million was recorded in other current liabilities and $421 million was recorded in other noncurrent liabilities. The Company also maintained separate cash, investments and receivables related to insurance recoveries within the consolidated statements of financial position of $377 million, of which $22 million was recorded in other current assets, and $355 million was recorded in other noncurrent assets. Assets included $11 million of cash and $304 million of investments, which have all been designated as restricted. In connection with the recognition of liabilities for asbestos-related matters, the Company records asbestos-related insurance recoveries that are probable; the amount of such recoveries recorded at March 31, 2021 was $62 million. As of September 30, 2020, the Company's estimated asbestos-related net liability recorded on a discounted basis within the Company's consolidated statements of financial position was $115 million. The net liability within the consolidated statements of financial position was comprised of a liability for pending and future claims and related defense costs of $483 million, of which $49 million was recorded in other current liabilities and $434 million was recorded in other noncurrent liabilities. The Company also maintained separate cash, investments and receivables related to insurance recoveries within the consolidated statements of financial position of $368 million, of which $39 million was recorded in other current assets, and $329 million was recorded in other noncurrent assets. Assets included $9 million of cash and $291 million of investments, which have all been designated as restricted. In connection with the recognition of liabilities for asbestos-related matters, the Company records asbestos-related insurance recoveries that are probable; the amount of such recoveries recorded at September 30, 2020 was $68 million.

The Company's estimate of the liability and corresponding insurance recovery for pending and future claims and defense costs is based on the Company'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 Company's reasonable best estimate of the actuarially determined time period through which asbestos-related claims will be filed against Company affiliates). Asbestos-related defense costs are included in the asbestos liability. The Company's legal strategy for resolving claims also impacts these estimates. The Company 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 Company 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 Company considers additional quantitative and qualitative factors such as changes in legislation, the legal environment, and the Company's defense strategy. The Company also evaluates the recoverability of its insurance receivable on an annual basis. The Company 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.

The amounts recorded by the Company for asbestos-related liabilities and insurance-related assets are based on the Company'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 Company's insurance carriers. Many of these factors are closely linked, such that a change in one variable or assumption will impact one or more of the others, and no single variable or assumption predominately influences the determination of the Company's asbestos-related liabilities 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 Company'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 liabilities or insurance recoveries could be significantly higher or lower than those recorded if assumptions used in the Company's calculations vary significantly from actual results.

Insurable Liabilities

The Company records liabilities for its workers' compensation, product, general, and auto liabilities. The determination of these liabilities and related expenses is dependent on claims experience. For most of these liabilities, claims incurred but not yet reported are estimated by utilizing actuarial valuations based upon historical claims experience. At March 31, 2021 and September 30, 2020, the insurable liabilities totaled $366 million and $363 million, respectively, of which $90 million and $83 million was recorded within other current liabilities, $23 million and $22 million was recorded within accrued compensation and benefits, and $253 million and $258 million was recorded within other noncurrent liabilities in the consolidated statements of financial position, respectively. The Company records receivables from third party insurers when recovery has been determined to be probable. The amount of such receivables recorded at March 31, 2021 were $21 million, of which $5 million was recorded within other current assets and $16 million was recorded within other noncurrent assets, respectively. The amount of such receivables recorded at September 30, 2020 were $21 million, of which $5 million was recorded within other current assets and $16 million was recorded within other noncurrent assets, respectively. The Company maintains captive insurance companies to manage its insurable liabilities.

Aqueous Film-Forming Foam ("AFFF") Litigation

Two of the Company'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 Company 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. PFOA, PFOS, and other PFAS compounds are being studied by the United States Environmental Protection Agency ("EPA") and other environmental and health agencies and researchers. The EPA has not issued binding regulatory limits, but had stated that it would propose regulatory standards for PFOS and PFOA in drinking water by the end of 2019, in accordance with its PFAS Action Plan released in February 2019, and issued interim recommendations for addressing PFOA and PFOS in groundwater in December 2019. While those studies continue, the EPA has issued a health advisory level for PFOA and PFOS in drinking water. In March 2021, EPA published its final determination to regulate PFOS and PFOA in drinking water. The EPA also announced in January 2021 that it will issue an advance notice of proposed rulemaking to solicit public comment on whether the agency should take additional regulatory steps to address PFAS contamination, including designating PFOA and PFOS and other PFAS as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act and seeking comment on whether PFOA and PFOS and other PFAS should be subject to regulation as hazardous waste under the Resource Conservation and Recovery Act. Both PFOA and PFOS are types of synthetic chemical compounds that have been present in firefighting foam. However, both are also present in many existing consumer products. According to EPA, PFOA and PFOS have been used to make carpets, clothing, fabrics for furniture, paper packaging for food and other materials (e.g., cookware) that are resistant to water, grease or stains.

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 a multi-district litigation ("MDL") before the United States District Court for the District of South Carolina. 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 31 putative class actions in federal courts originating from Colorado, Delaware, Florida, Massachusetts, New York, Pennsylvania, Washington, New Hampshire, South Carolina, the District of Columbia, Guam, West Virginia, Michigan, Texas and South Dakota. All of these cases have been direct-filed in or transferred to the MDL. Since the beginning of fiscal year 2021, two putative class actions (*Jackson v. 3M Company, et al*., direct filed on January 15, 2021 in the MDL pending in the United States District Court, District of South Carolina; *Ogden v. Intercontinental Terminals Company LLC, et al*., filed in the United States District Court, Southern District of Texas on January 27, 2021, and tagged to the MDL) have been filed against the Company.

AFFF Individual or Mass Actions

There are approximately 1,000 individual or "mass" actions pending that were filed in state or federal court in various states including California, Colorado, New York, Pennsylvania, New Mexico, Missouri, Arizona, Texas, and South Carolina 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, approximately 126 plaintiffs in New York, and approximately 1,000 other plaintiffs. All but five of these matters have been transferred to or directly-filed in the MDL, and it is anticipated that the remaining cases will be transferred to the MDL. Many of the additional filed actions were directly filed in South Carolina by plaintiffs who were among the 660 plaintiffs the Company had previously disclosed to have made filings in Pennsylvania state court. The Company anticipates that the remainder of the possible individual product liability claims filed in Pennsylvania state court will either soon be filed in the MDL (and that all such claims in state court will be dismissed accordingly) or will be dismissed in Pennsylvania without a corresponding filing in South Carolina.

AFFF Municipal Cases

Chemguard and Tyco Fire Products have been named as defendants in 87 cases in federal and state courts involving municipal or water provider plaintiffs in Alaska, Alabama, Arizona, California, Colorado, Florida, Idaho, Kentucky, Louisiana, Massachusetts, New Jersey, New York, Maryland, North Carolina, Ohio, Pennsylvania, Virginia, Washington, the District of Columbia and several municipalities or water providers from various states who direct-filed complaints in South Carolina. All but five of these cases have been transferred to or directly filed in the MDL, and it is anticipated that the remaining cases will be transferred to the MDL. These municipal 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, allegedly requiring remediation of public property.

In May 2018, the Company was also notified by the Widefield Water and Sanitation District in Colorado Springs, Colorado that it may assert claims regarding its remediation costs in connection with PFOS and PFOA contamination allegedly resulting from the use of those products at the Peterson Air Force Base. In May 2020, the Company was also notified by the Lakewood Water District in Pierce County, Washington that it may assert claims regarding remediation in connection with PFOA, PFOS, and other PFAS contamination allegedly resulting from the use of those products at Joint Base Lewis-McChord.

In April 2020, the Weirton Area Water Board in West Virginia filed a lawsuit in the Circuit Court of Brooke County, West Virginia against a number of PFAS chemical manufacturers, including Chemguard, with respect to PFAS contamination. This case has been removed to the United States District Court for the Northern District of West Virginia and transferred to the MDL in the District of South Carolina.

State or U.S. Territory Attorneys General Litigation related to AFFF

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 Company, 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 Company, 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 Company, 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 Company, 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 January 2019, the State of Ohio filed a lawsuit in Ohio state court (*State of Ohio v. The 3M Company et al.*, No. G-4801-CI-021804752 -000 (Court of Common Pleas of Lucas County, Ohio)) against a number of manufacturers, including affiliates of the Company, with respect to PFOS and PFOA contamination allegedly resulting from the use of firefighting foams at various specified and unspecified locations across Ohio. The lawsuit seeks to recover costs and natural resource damages associated with the contamination. This lawsuit has been removed to the United States District Court for the Northern District of Ohio and transferred to the MDL.

In addition, in May and June 2019, three other states filed lawsuits in their respective state courts against a number of manufacturers, including affiliates of the Company, with respect to PFOS and PFOA contamination allegedly resulting from the use of firefighting foams at various specified and unspecified locations across their jurisdictions (*State of New Hampshire v. The 3M Company et al.*; *State of Vermont v. The 3M Company et al*.; *State of New Jersey v. The 3M Company et al*.). All three of these suits have been removed to federal court and transferred to the MDL.

In September 2019, the government of Guam filed a lawsuit in the superior court of Guam against a number of manufacturers, including affiliates of the Company, with respect to PFOS and PFOA contamination allegedly resulting from the use of firefighting foams at various locations within its jurisdiction. This complaint has been removed to federal court and transferred to the MDL.

In November 2019, the government of the Commonwealth of the Northern Mariana Islands filed a lawsuit in the superior court of the Northern Mariana Islands against a number of manufacturers, including affiliates of the Company, with respect to PFOS and PFOA contamination allegedly resulting from the use of firefighting foams at various locations within its jurisdiction. This complaint has been removed to federal court and transferred to the MDL.

In August 2020, Attorney General of the State of Michigan filed two substantially similar lawsuits—one in federal court and one in state court—against a number of manufacturers, including affiliates of the Company, with respect to PFOS and PFOA contamination allegedly resulting from the use of firefighting foams at various locations within the State. The federal action has been transferred to the MDL, and the state court action has been removed to federal court and tagged for transfer to the MDL.

In December 2020, the State of Mississippi filed a lawsuit against a number of manufacturers and other defendants, including affiliates of the Company, 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. This complaint was direct-filed in the MDL in South Carolina.

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 Company, 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. This complaint has not yet been served.

AFFF Matters Related to the Tyco Fire Products Fire Technology Center in Marinette, Wisconsin

Tyco Fire Products and Chemguard are defendants in one lawsuit in Marinette County, Wisconsin alleging damages due to the historical use of AFFF products at Tyco's Fire Technology Center in Marinette, Wisconsin. The putative class action, *Joan & Richard Campbell for themselves and on behalf of other similarly situated v. Tyco Fire Products LP and Chemguard Inc., et al.* (Marinette County Circuit Court, filed Dec. 17, 2018) alleges PFAS (including PFOA/PFOS) contaminated groundwater migrated off Tyco's property and into residential drinking water wells causing both personal injuries and property damage to the plaintiffs; Tyco and Chemguard removed this case to the United States District Court for the Eastern District of Wisconsin and it has been transferred to the MDL. On January 7, 2021, the parties agreed to settle the lawsuit. The settlement provides that Tyco will pay up to $17.5 million to compensate Town of Peshtigo residents who live in the area affected by PFAS from the FTC for claims related to loss of real property value, exposure and/or personal injury. The settlement does not constitute an admission of wrongdoing by Tyco or Chemguard and is subject to approval by the federal court presiding over the lawsuit and other contingencies. The court is scheduled to conduct a hearing regarding the proposed settlement in May 2021. The Company does not expect the settlement to have a significant impact on its fiscal year 2021 results of operations or cash flows.

A second lawsuit, *Duane and Janell Goldsmith individually and on behalf of H.G. and K.G v. Tyco Fire Products LP and Chemguard Inc., et al.* (Marinette County Circuit Court, filed Dec. 17, 2018) was also filed by a family alleging personal injuries due to contaminated groundwater; this case has been dismissed without prejudice.

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 Company, 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.

The Company is vigorously defending the above 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. Tyco and Chemguard have insurance that has been in place for many years and the Company is pursuing this coverage for these matters. However, there are numerous factual and legal issues to be resolved in connection with these claims, and it is extremely 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.

Other Matters

The Company 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 us, it is management's opinion that none of these will have a material adverse effect on the Company's financial position, results of operations or cash flows. Costs related to such matters were not material to the periods presented.

23. Related Party Transactions

In the ordinary course of business, the Company enters into transactions with related parties, such as equity affiliates. Such transactions consist of facility management services, the sale or purchase of goods and other arrangements.

The following table presents net sales to and purchases from related parties for the three and six months ended March 31, 2021 and 2020 (in millions):

	Three Months Ended March 31,		Six Months Ended March 31,	
	2021	2020	2021	2020
Net sales to related parties	$ 53	$ 38	$ 97	$ 83
Purchases from related parties	37	10	66	22

The following table presents receivables from and payables to related parties in the consolidated statements of financial position (in millions):

	March 31, 2021	September 30, 2020
Receivable from related parties	$ 62	$ 48
Payable to related parties	19	11

ITEM 2. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Cautionary Statements for Forward-Looking Information

Unless otherwise indicated, references to "Johnson Controls," the "Company," "we," "our" and "us" in this Quarterly Report on Form 10-Q refer to Johnson Controls International plc and its consolidated subsidiaries.

The Company has made statements in this document that are forward-looking and therefore are subject to risks and uncertainties. All statements in this document other than statements of historical fact are, or could be, "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. In this document, statements regarding Johnson Controls' future financial position, sales, costs, earnings, cash flows, other measures of results of operations, synergies and integration opportunities, capital expenditures and debt levels are forward-looking statements. Words such as "may," "will," "expect," "intend," "estimate," "anticipate," "believe," "should," "forecast," "project" or "plan" and terms of similar meaning are also generally intended to identify forward-looking statements. However, the absence of these words does not mean that a statement is not forward-looking. Johnson Controls cautions that these statements are subject to numerous important risks, uncertainties, assumptions and other factors, some of which are beyond Johnson Controls’ control, that could cause Johnson Controls’ actual results to differ materially from those expressed or implied by such forward-looking statements, including, among others, risks related to: Johnson Controls’ ability to manage general economic, business, capital market and geopolitical conditions, including the impacts of natural disasters, climate change, pandemics and outbreaks of contagious diseases and other adverse public health developments, such as the COVID-19 pandemic; the strength of the U.S. or other economies; changes or uncertainty in laws, regulations, rates, policies or interpretations that impact Johnson Controls’ business operations or tax status; the ability to develop or acquire new products and technologies that achieve market acceptance; changes to laws or policies governing foreign trade, including increased tariffs or trade restrictions; maintaining the capacity, reliability and security of Johnson Controls' enterprise and product information technology infrastructure; the risk of infringement or expiration of intellectual property rights; any delay or inability of Johnson Controls to realize the expected benefits and synergies of recent portfolio transactions such as its merger with Tyco and the disposition of the Power Solutions business; the outcome of litigation and governmental proceedings; the ability to hire and retain key senior management; the tax treatment of recent portfolio transactions; significant transaction costs and/or unknown liabilities associated with such transactions; the availability of raw materials and component products; fluctuations in currency exchange rates; work stoppages, union negotiations, labor disputes and other matters associated with the labor force; and the cancellation of or changes to commercial arrangements. A detailed discussion of risks related to Johnson Controls' business is included in the section entitled "Risk Factors" in Johnson Controls' Annual Report on Form 10-K for the year ended September 30, 2020 filed with the United States Securities and Exchange Commission ("SEC") on November 16, 2020, which is available at www.sec.gov and www.johnsoncontrols.com under the "Investors" tab. The forward-looking statements included in this document are made only as of the date of this document, unless otherwise specified, and, except as required by law, Johnson Controls assumes no obligation, and disclaims any obligation, to update such statements to reflect events or circumstances occurring after the date of this document.

Overview

Johnson Controls International plc, headquartered in Cork, Ireland, is a global diversified technology and multi industrial leader serving a wide range of customers in more than 150 countries. The Company’s products and solutions enable smart, energy efficient, sustainable buildings that work seamlessly together to advance the safety, comfort and intelligence of spaces to power its customers’ mission. The Company 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. The Company was renamed to Johnson Controls, Inc. in 1974. In 2005, the Company acquired York International, a global supplier of heating, ventilating, air-conditioning ("HVAC") and refrigeration equipment and services. In 2014, the Company acquired Air Distribution Technologies, Inc., one of the largest independent providers of air distribution and ventilation products in North America. In 2015, the Company formed a joint venture with Hitachi to expand its building related product offerings. In 2016, Johnson Controls, Inc. and 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, Johnson Controls completed the spin-off of its automotive business into Adient plc, an independent, publicly traded company. In 2019, the Company sold its Power Solutions business to BCP Acquisitions LLC, an entity controlled by investment funds managed by Brookfield Capital Partners LLC, completing the Company's transformation into a pure-play building technologies and solutions provider.

The Company 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 Company further serves customers by providing technical services, including maintenance, repair, retrofit and replacement of equipment (in the HVAC, security and fire-protection space), energy-management consulting and data-driven "smart building" services and solutions powered by its digital platforms and capabilities.

The Company continues to observe trends demonstrating increased interest and demand for safe, efficient and sustainable buildings, and seeks to capitalize on these trends to drive growth by developing and delivering technologies and solutions to create healthy buildings. In 2020, the Company launched OpenBlue, a digitally driven suite of connected solutions that delivers impactful sustainability, new occupant experiences, and respectful safety and security by combining the Company's building expertise with cutting-edge technology, including AI-powered service solutions such as remote diagnostics, predictive maintenance, compliance monitoring and advanced risk assessments. In January 2021, the Company committed to invest 75 percent of its new product research and development in climate-related innovation to develop sustainable products and services.

The following information should be read in conjunction with the September 30, 2020 consolidated financial statements and notes thereto, along with management's discussion and analysis of financial condition and results of operations included in our Annual Report on Form 10-K for the year ended September 30, 2020 filed with the SEC on November 16, 2020. References in the following discussion and analysis to "Three Months" (or similar language) refer to the three months ended March 31, 2021 compared to the three months ended March 31, 2020, while "Year-to-Date" refers to the six months ended March 31, 2021 compared to the six months ended March 31, 2020.

Impact of COVID-19 pandemic

The global outbreak of COVID-19 severely restricted the level of economic activity around the world and caused a significant contraction in the global economy. The Company's affiliates, employees, suppliers, customers and others have been and may continue to be restricted or prevented from conducting normal business activities, including as a result of shutdowns, travel restrictions and other actions that may be requested or mandated by governmental authorities. Although shutdown orders and similar restrictions have been lifted in some jurisdictions, resurgences in the spread of COVID-19 have caused the reinstitution of such measures in impacted areas. While a substantial portion of the Company's businesses have been classified as an essential business in jurisdictions in which facility closures have been mandated, some of its facilities have at times nevertheless been ordered to close, and we can give no assurance that there will not be additional closures in the future or that the Company's businesses will be classified as essential in each of the jurisdictions in which it operates.

In response to the challenges presented by COVID-19, the Company has focused its efforts on preserving the health and safety of its employees and customers, as well as maintaining the continuity of its operations. The Company has modified its business practices in response to the COVID-19 outbreak, including restricting non-essential employee travel, implementation of remote work protocols, and cancellation of physical participation in meetings, events and conferences. The Company has also instituted preventive measures at its facilities, including enhanced health and safety protocols, temperature screening, requiring face coverings for all employees and encouraging employees to follow similar protocols when away from work. The Company has adopted a multifaceted framework to guide its decision making when evaluating the readiness of its facilities to safely reopen and operate, and will continue to monitor and audit its facilities to ensure that they are in compliance with the Company's COVID-19 safety requirements.

During portions of fiscal 2020, the Company experienced temporary reductions of its manufacturing and operating capacity in China, India and Mexico. Currently, the Company's facilities have been operating at normal levels. The Company has experienced, and may continue to experience, disruptions or delays in its supply chain as a result of government-mandated actions. While actions taken by the Company to mitigate manufacturing and supply chain disruptions, including redistributing manufacturing capacity, expanding supplier diversity, government outreach and supplier financing, have generally been successful, resurgences in the spread of COVID-19 could lead to further disruptions.

The Company experienced a decline in demand and volumes in its global businesses as a result of the impact of efforts to contain the spread of COVID-19. Specifically, the Company experienced lower demand due to restricted access to customer sites to perform service and installation work as well as reduced discretionary capital spending by the Company's customers. In fiscal 2021, the Company has experienced increases in demand and volumes as governments have begun to distribute vaccines and lift COVID-19-related restrictions. However, delays in vaccine distribution and a resurgence in the spread of COVID-19 could result in the reinstitution of lockdowns or other restrictive measures, which could cause a decrease in economic activity and demand for the Company's products and services.

The global pandemic has provided the Company with the opportunity to help its customers prepare to re-open by delivering solutions and support that enhance the safety and increase the efficiency of their operations. The Company has seen an increase in demand for its products and solutions that promote building health and optimize customers' infrastructure, including thermal cameras, indoor air quality, location-based services for contact tracing and touchless access control.

In fiscal 2020, the Company executed temporary and permanent cost mitigation actions to offset a portion of the impact of COVID-19 on the demand for its products and services. As a result of these and other permanent cost mitigation actions, including the Company's 2020 restructuring plan, the Company experienced a positive impact on its results of operations for the three and six months ended March 31, 2021. Although the Company has largely ceased temporary cost mitigation actions initiated in fiscal 2020, the necessity of future cost mitigation actions will depend on the continued impact of COVID-19, which is highly uncertain.

During fiscal 2020, the Company determined that it had triggering events requiring assessment of impairment for certain of its indefinite-lived intangible assets due to declines in revenue directly attributable to the COVID-19 pandemic and for certain of its indefinite-lived intangible assets, long-lived assets and goodwill due to declines in revenue and further declines in forecasted cash flows in its North America Retail reporting unit. As a result, the Company recorded an impairment charge of $62 million related primarily to the Company's retail business indefinite-lived intangible assets and an impairment charge of $424 million related to the Company's North America Retail reporting unit's goodwill. There were no triggering events requiring that an impairment assessment be conducted for indefinite-lived intangible assets or goodwill in the six months ended March 31, 2021. However, it is possible that future changes in circumstances, including a more prolonged and/or severe COVID-19 pandemic, would require the Company to record additional non-cash impairment charges.

The Company continues to actively monitor its liquidity position and working capital needs. The Company believes that, following its implementation of liquidity and cost mitigation actions in fiscal 2020, it remains in a solid overall capital resources and liquidity position that is adequate to meet its projected needs.

The extent to which the COVID-19 pandemic continues to impact the Company's results of operations and financial condition will depend on future developments that are highly uncertain and cannot be predicted, including the resurgence of COVID-19 in regions recovering from the impacts of the pandemic, the effectiveness of COVID-19 vaccines and the speed at which populations are vaccinated around the globe, the impact of COVID-19 on economic activity, and regulatory actions taken to contain its impact on public health and the global economy. See Part I, Item 1A, of the Company's Annual Report on Form 10-K for the year ended September 30, 2020 for an additional discussion of risks related to COVID-19.

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 Company has committed to various restructuring plans. In fiscal 2021, the Company announced its plans to optimize its cost structure through broad-based SG&A actions focused on simplification, standardization and centralization, with the intent to deliver annualized savings of $300 million by fiscal 2023. Additionally, the Company announced cost of sales actions to drive $250 million in annual run rate savings by fiscal 2023. For more information on the Company's restructuring plans, see "Liquidity and Capital Resources—Restructuring".

Net Sales

(in millions)	Three Months Ended March 31, 2021	Three Months Ended March 31, 2020	Change	Six Months Ended March 31, 2021	Six Months Ended March 31, 2020	Change
Net sales	$ 5,594	$ 5,444	3%	$ 10,935	$ 11,020	-1%

The increase in consolidated net sales for the three months ended March 31, 2021 was due to the favorable impact of foreign currency translation ($136 million), higher organic sales ($74 million) and incremental sales from acquisitions ($4 million), partially offset by lower sales due to business divestitures ($64 million). Excluding the impact of foreign currency translation and business acquisitions and divestitures, consolidated net sales increased 1% as compared to the prior year. Refer to the "Segment Analysis" below within this Item 2 for a discussion of net sales by segment.

The decrease in consolidated net sales for the six months ended March 31, 2021 was due to lower organic sales ($186 million) and lower sales due to business divestitures ($137 million), partially offset by the favorable impact of foreign currency translation ($225 million) and incremental sales from acquisitions ($13 million). Excluding the impact of foreign currency translation and business acquisitions and divestitures, consolidated net sales decreased 2% as compared to the prior year primarily due to the unfavorable impact of the COVID-19 pandemic on demand and volumes. Refer to the "Segment Analysis" below within this Item 2 for a discussion of net sales by segment.

Cost of Sales / Gross Profit

(in millions)	Three Months Ended March 31, 2021	Three Months Ended March 31, 2020	Change	Six Months Ended March 31, 2021	Six Months Ended March 31, 2020	Change
Cost of sales	$ 3,651	$ 3,643	—%	$ 7,264	$ 7,416	-2%
Gross profit	1,943	1,801	8%	3,671	3,604	2%
% of sales	34.7 %	33.1 %		33.6 %	32.7 %	

Cost of sales and gross profit increased for the three month period ended March 31, 2021, and gross profit as a percentage of sales increased by 160 basis points. Gross profit increased due to organic sales growth and favorable current year pension mark-to-market adjustments ($49 million), partially offset by business divestitures. Foreign currency translation had an unfavorable impact on cost of sales of approximately $95 million. Refer to the "Segment Analysis" below within this Item 2 for a discussion of segment earnings before interest, taxes and amortization ("EBITA") by segment.

Cost of sales decreased and gross profit increased for the six month period ended March 31, 2021, and gross profit as a percentage of sales increased by 90 basis points. Gross profit increased due to favorable current year pension mark-to-market adjustments ($49 million), partially offset by organic sales declines from the unfavorable impact of the COVID-19 pandemic and business divestitures. Foreign currency translation had an unfavorable impact on cost of sales of approximately $158 million. Refer to the "Segment Analysis" below within this Item 2 for a discussion of segment earnings before interest, taxes and amortization ("EBITA") by segment.

Selling, General and Administrative Expenses

(in millions)	Three Months Ended March 31, 2021	Three Months Ended March 31, 2020	Change	Six Months Ended March 31, 2021	Six Months Ended March 31, 2020	Change
Selling, general and administrative expenses	$ 1,253	$ 1,451	-14%	$ 2,547	$ 2,878	-12%
% of sales	22.4 %	26.7 %		23.3 %	26.1 %	

Selling, general and administrative expenses ("SG&A") for the three month period ended March 31, 2021 decreased $198 million, and SG&A as a percentage of sales decreased by 430 basis points. The decrease in SG&A was primarily due to favorable current year mark-to-market adjustments on pension plans ($158 million), favorable impacts of cost mitigation actions and reductions in discretionary spend in the current quarter, and the favorable year-over-year impact of net mark-to-market adjustments on restricted asbestos investments, partially offset by an unfavorable impact of foreign currency translation. Foreign currency translation had an unfavorable impact on SG&A of $32 million. Refer to the "Segment Analysis" below within this Item 2 for a discussion of segment EBITA by segment.

SG&A for the six month period ended March 31, 2021 decreased $331 million, and SG&A as a percentage of sales decreased by 280 basis points. The decrease in SG&A was primarily due to favorable current year mark-to-market adjustments on pension plans ($158 million), favorable impacts of cost mitigation actions and reductions in discretionary spend in the current year, and the favorable year-over-year impact of net mark-to-market adjustments on restricted asbestos investments, partially offset by an unfavorable impact of foreign currency translation. Foreign currency translation had an unfavorable impact on SG&A of $52 million. Refer to the "Segment Analysis" below within this Item 2 for a discussion of segment EBITA by segment.

Restructuring and Impairment Costs

	Three Months Ended March 31,			Six Months Ended March 31,		
(in millions)	2021	2020	Change	2021	2020	Change
Restructuring and impairment costs	$ 96	$ 62	55 %	$ 96	$ 173	-45%

Refer to Note 10, "Significant Restructuring and Impairment Costs," of the notes to consolidated financial statements for further disclosure related to the Company's restructuring plans and impairment costs.

Net Financing Charges

	Three Months Ended March 31,			Six Months Ended March 31,		
(in millions)	2021	2020	Change	2021	2020	Change
Net financing charges	$ 44	$ 59	-25%	$ 103	$ 111	-7%

Refer to Note 13, "Debt and Financing Arrangements," of the notes to consolidated financial statements for further disclosure related to the Company's net financing charges.

Equity Income

	Three Months Ended March 31,			Six Months Ended March 31,		
(in millions)	2021	2020	Change	2021	2020	Change
Equity income	$ 56	$ 20	*	$ 114	$ 63	81%

* Measure not meaningful

The increase in equity income for the three months ended March 31, 2021 was primarily due to higher income at certain partially-owned affiliates of the Johnson Controls - Hitachi joint venture. Foreign currency translation had a favorable impact on equity income of $1 million for the three months ended March 31, 2021. Refer to the "Segment Analysis" below within this Item 2 for a discussion of segment EBITA by segment.

The increase in equity income for the six months ended March 31, 2021 was primarily due to higher income at certain partially-owned affiliates of the Johnson Controls - Hitachi joint venture. Foreign currency translation had a favorable impact on equity income of $4 million for the six months ended March 31, 2021. Refer to the "Segment Analysis" below within this Item 2 for a discussion of segment EBITA by segment.

Income Tax Provision

(in millions)	Three Months Ended March 31, 2021	Three Months Ended March 31, 2020	Change	Six Months Ended March 31, 2021	Six Months Ended March 31, 2020	Change
Income tax provision	$ 209	$ 13	*	$ 270	$ 78	*
Effective tax rate	34%	5%		26%	15%	

* Measure not meaningful

In calculating the provision for income taxes, the Company uses an estimate of the annual effective tax rate based upon the facts and circumstances known at each interim period. On a quarterly basis, the actual effective tax rate is adjusted, as appropriate, based upon changed facts and circumstances, if any, as compared to those forecasted at the beginning of the fiscal year and each interim period thereafter.

The statutory tax rate in Ireland is being used as a comparison since the Company is domiciled in Ireland. For the three months ended March 31, 2021, the Company's effective tax rate for continuing operations was 34% and was higher than the statutory tax rate of 12.5% primarily due to valuation allowance adjustments, the income tax effects of mark-to-market adjustments and tax rate differentials, partially offset by the benefits of continuing global tax planning initiatives. For the six months ended March 31, 2021, the Company's effective tax rate for continuing operations was 26% and was higher than the statutory tax rate of 12.5% primarily due to valuation allowance adjustments, the income tax effects of mark-to-market adjustments and tax rate differentials, partially offset by the benefits of continuing global tax planning initiatives. For the three months ended March 31, 2020, the Company's effective tax rate for continuing operations was 5% and was lower than the statutory tax rate of 12.5% primarily due to tax audit reserve adjustments and the benefits of continuing global tax planning initiatives, partially offset by tax rate differentials. For the six months ended March 31, 2020, the Company's effective tax rate for continuing operations was 15% and was higher than the statutory tax rate of 12.5% primarily due to a discrete tax charge related to the remeasurement of deferred tax assets and liabilities as a result of Swiss tax reform and tax rate differentials, partially offset by tax audit reserve adjustments and the benefits of continuing global tax planning initiatives. The effective tax rate for the six months ended March 31, 2021 increased as compared to the six months ended March 31, 2020 primarily due to the discrete tax items. Refer to Note 11, "Income Taxes," of the notes to consolidated financial statements for further detail.

Income From Discontinued Operations, Net of Tax

(in millions)	Three Months Ended March 31, 2021	Three Months Ended March 31, 2020	Change	Six Months Ended March 31, 2021	Six Months Ended March 31, 2020	Change
Income from discontinued operations, net of tax	$ —	$ —	*	$ 124	$ —	*

* Measure not meaningful

Refer to Note 4, "Discontinued Operations," of the notes to consolidated financial statements for further information regarding the Company's discontinued operations.

Income Attributable to Noncontrolling Interests

(in millions)	Three Months Ended March 31, 2021	Three Months Ended March 31, 2020	Change	Six Months Ended March 31, 2021	Six Months Ended March 31, 2020	Change
Income from continuing operations attributable to noncontrolling interests	$ 54	$ 23	*	$ 99	$ 55	80%

* Measure not meaningful

The increase in income from continuing operations attributable to noncontrolling interests for the three and six months ended March 31, 2021 was primarily due to higher net income at certain partially-owned affiliates within the Global Products segment.

Net Income Attributable to Johnson Controls

	Three Months Ended March 31,			Six Months Ended March 31,		
(in millions)	2021	2020	Change	2021	2020	Change
Net income attributable to Johnson Controls	$ 343	$ 213	61%	$ 794	$ 372	*

* Measure not meaningful

The increase in net income attributable to Johnson Controls for the three months ended March 31, 2021 was primarily due to lower SG&A and higher gross profit, partially offset by higher income tax provision. The increase in net income attributable to Johnson Controls for the six months ended March 31, 2021 was primarily due to lower SG&A, the current year income from discontinued operations, higher gross profit, and lower restructuring and impairment costs, partially offset by higher income tax provision.

Diluted earnings per share attributable to Johnson Controls for the three months ended March 31, 2021 was $0.48 compared to $0.28 for the three months ended March 31, 2020. Diluted earnings per share attributable to Johnson Controls for the six months ended March 31, 2021 was $1.10 compared to $0.49 for the six months ended March 31, 2020.

Comprehensive Income (Loss) Attributable to Johnson Controls

	Three Months Ended March 31,			Six Months Ended March 31,		
(in millions)	2021	2020	Change	2021	2020	Change
Comprehensive income (loss) attributable to Johnson Controls	$ 437	$ (268)	*	$ 1,160	$ 146	*

* Measure not meaningful

The increase in comprehensive income attributable to Johnson Controls for the three months ended March 31, 2021 was due to higher net income attributable to Johnson Controls ($130 million) and an increase in other comprehensive income attributable to Johnson Controls ($575 million) resulting primarily from favorable currency translation adjustments. The year-over-year favorable foreign currency translation adjustments were primarily driven by the weakening of the British pound, Mexican peso, Canadian dollar and Brazilian real against the U.S. dollar in the prior quarter.

The increase in comprehensive income attributable to Johnson Controls for the six months ended March 31, 2021 was due to higher net income attributable to Johnson Controls ($422 million) and an increase in other comprehensive income attributable to Johnson Controls ($592 million) resulting primarily from favorable currency translation adjustments. The year-over-year favorable foreign currency translation adjustments were primarily driven by the strengthening of the British pound, Mexican peso and Canadian dollar against the U.S. dollar in the current year.

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

(in millions)	Three Months Ended March 31, 2021	Three Months Ended March 31, 2020	Change	Six Months Ended March 31, 2021	Six Months Ended March 31, 2020	Change
Building Solutions North America	$ 2,092	$ 2,175	-4%	$ 4,126	$ 4,342	-5%
Building Solutions EMEA/LA	897	850	6%	1,803	1,778	1%
Building Solutions Asia Pacific	603	525	15%	1,218	1,154	6%
Global Products	2,002	1,894	6%	3,788	3,746	1%
	$ 5,594	$ 5,444	3%	$ 10,935	$ 11,020	-1%

Three Months:

- The decrease in Building Solutions North America was due to lower volumes ($96 million), partially offset by the favorable impact of foreign currency translation ($13 million). The decrease in volumes was primarily attributable to the unfavorable impact of the COVID-19 pandemic.

- The increase in Building Solutions EMEA/LA was due to the favorable impact of foreign currency translation ($42 million), incremental sales related to business acquisitions ($4 million) and favorable volumes ($1 million).

- The increase in Building Solutions Asia Pacific was due to favorable volumes ($50 million) and the favorable impact of foreign currency translation ($30 million), partially offset by business divestitures ($2 million). The increase in volumes was primarily attributable to the COVID-19 pandemic recovery in China.

- The increase in Global Products was due to favorable volumes ($119 million) and the favorable impact of foreign currency translation ($51 million), partially offset by business divestitures ($62 million). The increase in volumes was primarily attributable to strong residential end markets as well as an inflection to growth in Commercial HVAC and Fire & Security.

Year-to-Date:

- The decrease in Building Solutions North America was due to lower volumes ($232 million), partially offset by the favorable impact of foreign currency translation ($16 million). The decrease in volumes was primarily attributable to the unfavorable impact of the COVID-19 pandemic.

- The increase in Building Solutions EMEA/LA was due to the favorable impact of foreign currency translation ($63 million) and incremental sales related to business acquisitions ($13 million), partially offset by lower volumes ($51 million). The decrease in volumes was primarily attributable to the unfavorable impact of the COVID-19 pandemic.

- The increase in Building Solutions Asia Pacific was due to the favorable impact of foreign currency translation ($58 million) and favorable volumes ($10 million), partially offset by business divestitures ($4 million)

- The increase in Global Products was due to the favorable impact of foreign currency translation ($88 million) and favorable volumes ($87 million), partially offset by business divestitures ($133 million). The increase in volumes was primarily attributable to strong residential end markets and the COVID-19 pandemic recovery in the Asia Pacific region.

Segment EBITA

(in millions)	Three Months Ended March 31, 2021	Three Months Ended March 31, 2020	Change	Six Months Ended March 31, 2021	Six Months Ended March 31, 2020	Change
Building Solutions North America	$ 266	$ 251	6%	$ 521	$ 509	2%
Building Solutions EMEA/LA	86	85	1%	181	175	3%
Building Solutions Asia Pacific	74	65	14%	153	137	12%
Global Products	285	216	32%	498	419	19%
	$ 711	$ 617	15%	$ 1,353	$ 1,240	9%

Three Months:

- The increase in Building Solutions North America was due to productivity savings and cost mitigation actions, net of unfavorable volumes ($14 million) and the favorable impact of foreign currency translation ($1 million).

- The increase in Building Solutions EMEA/LA was due to productivity savings and favorable volumes ($2 million), the favorable impact of foreign currency translation ($1 million) and higher income due to business acquisitions ($1 million), partially offset by lower equity income ($3 million).

- The increase in Building Solutions Asia Pacific was due to favorable volumes ($7 million) and the favorable impact of foreign currency translation ($3 million), partially offset by lower income due to business divestitures ($1 million).

- The increase in Global Products was due to higher equity income ($35 million) driven primarily by certain partially-owned affiliates of the Johnson Controls - Hitachi joint venture, favorable volumes, productivity savings and cost mitigation actions ($35 million) and the favorable impact of foreign currency translation ($5 million), partially offset by lower income due to business divestitures ($6 million).

Year-to-Date:

- The increase in Building Solutions North America was due to productivity savings and cost mitigation actions, net of unfavorable volumes ($10 million), prior year integration costs ($1 million) and the favorable impact of foreign currency translation ($1 million).

- The increase in Building Solutions EMEA/LA was due to productivity savings and cost mitigation actions, net of unfavorable volumes ($6 million), higher income due to business acquisitions ($2 million) and the favorable impact of foreign currency translation ($1 million), partially offset by lower equity income ($3 million).

- The increase in Building Solutions Asia Pacific was due to productivity savings, cost mitigation actions and favorable volumes ($11 million) and the favorable impact of foreign currency translation ($6 million), partially offset by lower income due to business divestitures ($1 million).

- The increase in Global Products was due to higher equity income ($45 million) driven primarily by certain partially-owned affiliates of the Johnson Controls - Hitachi joint venture, favorable volumes, productivity savings and cost mitigation actions ($34 million), the favorable impact of foreign currency translation ($11 million) and prior year integration costs ($1 million), partially offset by lower income due to business divestitures ($12 million).

Backlog

The Company's backlog is applicable to its sales of systems and services. At March 31, 2021, the backlog was $10.0 billion, of which $9.6 billion was attributable to the 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 March 31, 2021, remaining performance obligations were $15.0 billion, which is $5.0 billion higher than the Company's backlog of $10.0 billion. Differences between the Company's remaining performance obligations and backlog are primarily due to:

- Remaining performance obligations include large, multi-purpose contracts to construct hospitals, schools and other governmental buildings, which are services to be performed over the building's lifetime with initial contract terms of 25 to 35 years for the entire term of the contract versus backlog which includes only the lifecycle period of these contracts which approximates five years;
- The Company has elected to exclude from remaining performance obligations certain contracts with customers with a term of one year or less or contracts that are cancelable without substantial penalty while these contracts are included within backlog; 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 Company will continue to report backlog as it believes it is a useful measure of evaluating the Company's operational performance and relationship to total orders.

Liquidity and Capital Resources

Working Capital

(in millions)	March 31, 2021	September 30, 2020	Change
Current assets	$ 10,204	$ 10,053	
Current liabilities	(8,740)	(8,248)	
	1,464	1,805	-19%
Less: Cash	(1,883)	(1,951)	
Add: Short-term debt	248	31	
Add: Current portion of long-term debt	196	262	
Working capital (as defined)	$ 25	$ 147	-83%
Accounts receivable - net	$ 5,167	$ 5,294	-2%
Inventories	1,994	1,773	12%
Accounts payable	3,417	3,120	10%

- The Company defines working capital as current assets less current liabilities, excluding cash, short-term debt, the current portion of long-term debt, and the current portions of assets and liabilities held for sale. 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 Company's operating performance.

- The decrease in working capital at March 31, 2021 as compared to September 30, 2020, was primarily due to an increase in accounts payable and decrease in accounts receivable, partially offset by an increase in inventory to meet anticipated customer demand and the favorable resolution of certain post-closing working capital and net debt adjustments related to the Power Solutions sale.

- The Company's days sales in accounts receivable at March 31, 2021 and September 30, 2020 were 64 days and 63 days, respectively. There has been no significant adverse changes in the level of overdue receivables or significant changes in revenue recognition methods.

- The Company's inventory turns for the three months ended March 31, 2021 were lower than the comparable period ended September 30, 2020, primarily due to changes in inventory production levels.

- Days in accounts payable at March 31, 2021 were 78 days, higher than 69 days at the comparable period ended September 30, 2020, primarily due to timing.

Cash Flows From Continuing Operations

(in millions)	Six Months Ended March 31, 2021	Six Months Ended March 31, 2020
Cash provided by operating activities	$ 1,160	$ 666
Cash used by investing activities	(119)	(288)
Cash used by financing activities	(1,079)	(2,036)

- The increase in cash provided by operating activities was primarily due to favorable changes in accounts payable and accrued liabilities, partially offset by prior year income tax refunds.

- The decrease in cash used by investing activities was primarily due to lower capital expenditures, lower payments for acquisitions, higher proceeds from the sale of property, plant and equipment, and current year cash proceeds from business divestitures.

- The decrease in cash used by financing activities was primarily due to lower stock repurchases.

Capitalization

(in millions)	March 31, 2021	September 30, 2020	Change
Short-term debt	$ 248	$ 31	
Current portion of long-term debt	196	262	
Long-term debt	7,323	7,526	
Total debt	7,767	7,819	-1%
Less: cash and cash equivalents	1,883	1,951	
Total net debt	5,884	5,868	—%
Shareholders' equity attributable to Johnson Controls ordinary shareholders	17,698	17,447	1%
Total capitalization	$ 23,582	$ 23,315	1%
Total net debt as a % of total capitalization	25.0%	25.2%	

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

- The Company believes its capital resources and liquidity position at March 31, 2021 are adequate to meet projected needs. The Company believes requirements for working capital, capital expenditures, dividends, minimum pension contributions, debt maturities and any potential acquisitions or stock repurchases in the remainder of fiscal 2021 will continue to be funded from operations, supplemented by short- and long-term borrowings, if required. The Company currently manages its short-term debt position in the U.S. and euro commercial paper markets and bank loan markets. In the event the Company is unable to issue commercial paper, it would have the ability to draw on its $2.5 billion revolving credit facility which expires in December 2024 or its $0.5 billion 364-day revolving credit facility which expires in December 2021. There were no draws on the revolving credit facilities as of March 31, 2021 and September 30, 2020. In addition, the Company held cash and cash equivalents of $1.9 billion as of March 31, 2021. As such, the Company believes it has sufficient financial resources to fund operations and meet its obligations for the foreseeable future.

- Financial covenants in the Company's revolving credit facilities requires 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 Accounting Standards Codification ("ASC") 715-60, "Defined Benefit Plans - Other Postretirement," or (ii) the cumulative foreign currency translation adjustment. As of March 31, 2021, the Company was in compliance with all covenants and other requirements set forth in its credit agreements and the indentures governing its notes, and expects to remain in compliance for the foreseeable future. None of the Company's debt agreements limit access to stated borrowing levels or require accelerated repayment in the event of a decrease in the Company's credit rating.

- The key financial assumptions used in calculating the Company's pension liability are determined annually, or whenever plan assets and liabilities are re-measured as required under accounting principles generally accepted in the U.S., including the expected rate of return on its plan assets. In fiscal 2021, the Company believes the long-term rate of return will approximate 6.50%, 4.90% and 5.30% for U.S. pension, non-U.S. pension and postretirement plans, respectively. During the first six months of fiscal 2021, the Company made approximately $25 million in total pension and postretirement contributions. In total, the Company expects to contribute approximately $46 million in cash to its defined benefit pension plans in fiscal 2021. The Company expects to contribute $3 million in cash to its postretirement plans in fiscal 2021.

- The Company 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 Company 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 Company's intent is to reduce basis differences only when it would be tax efficient. The Company expects existing U.S. cash and liquidity to continue to be sufficient to fund the Company'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 Company require more capital than is generated by its operations, the Company could elect to raise capital in the U.S. through debt or equity issuances. The Company 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 Company expects existing non-U.S. cash, cash equivalents, short-term investments and cash flows from operations to continue to be sufficient to fund the Company'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 Company require more capital at the Luxembourg and Ireland holding and financing entities, other than amounts that can be provided in tax efficient methods, the Company could also elect to raise capital through debt or equity issuances. These alternatives could result in increased interest expense or other dilution of the Company's earnings.

- We may from time to time purchase our 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.

- Refer to Note 13, "Debt and Financing Arrangements," of the notes to consolidated financial statements for additional information on items impacting capitalization.

Restructuring

To better align its resources with its growth strategies and reduce the cost structure of its global operations in certain underlying markets, the Company has committed to various restructuring plans. Restructuring plans 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 Company's consolidated statements of income. The Company expects the restructuring actions to reduce cost of sales and SG&A, including reduced employee-related costs, depreciation and amortization expense.

- In fiscal 2021, the Company announced its plans to optimize its cost structure through broad-based SG&A actions focused on simplification, standardization and centralization, with the intent to deliver annualized savings of $300 million by fiscal 2023. Additionally, the Company announced cost of sales actions to drive $250 million in annual run rate savings by fiscal 2023. The one-time pre-tax costs associated with these actions are estimated to be approximately $385 million across all segments and at Corporate. During the three months ended March 31, 2021, the Company recorded $96 million of costs resulting from the 2021 restructuring plan. The Company has outstanding restructuring reserves of $37 million at March 31, 2021, all of which is expected to be paid in cash.

- In fiscal 2020, the Company recorded $297 million of costs resulting from the 2020 restructuring plan. The Company currently estimates that upon completion of the restructuring action, the fiscal 2020 restructuring plans will reduce annual operating costs for continuing operations by approximately $430 million. The Company expects the annual benefit of these actions will be substantially realized in 2021. The restructuring action is expected to be substantially complete in fiscal 2021. The Company has outstanding restructuring reserves of $60 million at March 31, 2021, all of which is expected to be paid in cash.

Co-Issued Securities: Summarized Financial Information

The following information is provided in compliance with Rule 13-01 of Regulation S-X under the Securities Exchange Act of 1934 with respect to the (i) $625 million aggregate principal amount of 1.750% Senior Notes due 2030 (the “2030 Notes”), (ii) €500 million aggregate principal amount of 0.375% Senior Notes due 2027 (the “2027 Notes”) and (iii) €500 million aggregate principal amount of 1.000% Senior Notes due 2032 (the “2032 Notes” and together with the 2030 Notes and the 2027 Notes, the “Notes”), each issued by Johnson Controls International plc ("Parent Company") and Tyco Fire & Security Finance S.C.A. (“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”).

TFSCA is a wholly-owned consolidated subsidiary of the Company that is 99.996% owned directly by the Parent Company and 0.004% owned by TFSCA’s sole general partner and manager, Tyco Fire & Security S.à r.l., which is itself wholly-owned by the Company. The Notes are the Parent Company’s and TFSCA’s unsecured, unsubordinated obligations. The Parent Company is incorporated and organized under the laws of Ireland and TFSCA is incorporated and organized under the laws of Luxembourg. The bankruptcy, insolvency, administrative, debtor relief and other laws of Luxembourg or Ireland, as applicable, may be materially different from, or in conflict with, those of the United States, including in the areas of rights of creditors, priority of governmental and other creditors, ability to obtain post-petition interest and duration of the proceeding. The application of these laws, or any conflict among them, could adversely affect noteholders’ ability to enforce their rights under the Notes in those jurisdictions or limit any amounts that they may receive.

The following tables set forth summarized financial information of the Parent Company and TFSCA (collectively, the “Obligor Group”) on a combined basis after intercompany transactions have been eliminated, including adjustments to remove the receivable and payable balances, investment in, and equity in earnings from, those subsidiaries of the Parent Company other than TFSCA (collectively, the "Non-Obligor Subsidiaries").

The following table presents summarized income statement information (in millions):

	Six Months Ended March 31, 2021	Year Ended September 30, 2020
Net sales	$ —	$ —
Gross profit	—	—
Loss from continuing operations	(100)	(450)
Net loss	(100)	(450)
Income attributable to noncontrolling interests	—	—
Net loss attributable to the entity	(100)	(450)

Excluded from the table above are the intercompany transactions between the Obligor Group and Non-Obligor Subsidiaries as follows (in millions):

	Six Months Ended March 31, 2021	Year Ended September 30, 2020
Net sales	$ —	$ —
Gross profit	—	—
Income from continuing operations	193	702
Net income	193	702
Income attributable to noncontrolling interests	—	—
Net income attributable to the entity	193	702

The following table presents summarized balance sheet information as of March 31, 2021 and September 30, 2020 (in millions):

	March 31, 2021	September 30, 2020
Current assets	$ 535	$ 522
Noncurrent assets	338	318
Current liabilities	2,734	7,612
Noncurrent liabilities	7,075	7,258
Noncontrolling interests	—	—

Excluded from the table above are the intercompany balances between the Obligor Group and Non-Obligor Subsidiaries as follows (in millions):

	March 31, 2021	September 30, 2020
Current assets	$ 545	$ 838
Noncurrent assets	2,795	7,338
Current liabilities	1,384	2,724
Noncurrent liabilities	7,019	3,406
Noncontrolling interests	—	—

The same accounting policies as described in Note 1, "Summary of Significant Accounting Policies," of the Company's Annual Report on 10-K for the year ended September 30, 2020 are used by the Parent Company and each of its subsidiaries in connection with the summarized financial information presented above.

New Accounting Standards

Refer to Note 2, "New Accounting Standards," of the notes to consolidated financial statements.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

As of March 31, 2021, the Company had not experienced any adverse changes in market risk exposures that materially affected the quantitative and qualitative disclosures presented in the Company's Annual Report on Form 10-K for the year ended September 30, 2020.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of our disclosure controls and procedures, as such term is defined under Rule 13a-15(e) promulgated under the Securities Exchange Act of 1934, as amended ("Exchange Act"). Based upon their evaluation of these disclosure controls and procedures, the principal executive officer and principal financial officer concluded that the disclosure controls and procedures were effective as of March 31, 2021 to ensure that information required to be disclosed by the Company in the reports it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time period specified in the SEC's rules and forms, and to ensure that information required to be disclosed by the Company in the reports it files or submits under the Exchange Act is accumulated and communicated to the Company's management, including its principal executive and principal financial officers, as appropriate, to allow timely decisions regarding disclosure.

Changes in Internal Control Over Financial Reporting

There have been no significant changes in the Company's internal control over financial reporting during the three months ended March 31, 2021 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

Gumm v. Molinaroli, et al.

On August 16, 2016, a putative class action lawsuit, *Gumm v. Molinaroli, et al.*, Case No. 16-cv-1093, was filed in the United States District Court for the Eastern District of Wisconsin, naming Johnson Controls, Inc., the individual members of its board of directors at the time of the merger with the Company's merger subsidiary and certain of its officers, the Company and the Company's merger subsidiary as defendants. The complaint asserted various causes of action under the federal securities laws, state law and the Taxpayer Bill of Rights, including that the individual defendants allegedly breached their fiduciary duties and unjustly enriched themselves by structuring the merger among the Company, Tyco and the merger subsidiary in a manner that would result in a United States federal income tax realization event for the putative class of certain Johnson Controls, Inc. shareholders and allegedly result in certain benefits to the defendants, as well as related claims regarding alleged misstatements in the proxy statement/prospectus distributed to the Johnson Controls, Inc. shareholders, conversion and breach of contract. The complaint also asserted that Johnson Controls, Inc., the Company and the Company's merger subsidiary aided and abetted the individual defendants in their breach of fiduciary duties and unjust enrichment. The complaint seeks, among other things, disgorgement of profits and damages. On September 30, 2016, approximately one month after the closing of the merger, plaintiffs filed a preliminary injunction motion seeking, among other items, to compel Johnson Controls, Inc. to make certain intercompany payments that plaintiffs contend will impact the United States federal income tax consequences of the merger to the putative class of certain Johnson Controls, Inc. shareholders and to enjoin Johnson Controls, Inc. from reporting to the Internal Revenue Service the capital gains taxes payable by this putative class as a result of the closing of the merger. The court held a hearing on the preliminary injunction motion on January 4, 2017, and on January 25, 2017, the judge denied the plaintiffs' motion. Plaintiffs filed an amended complaint on February 15, 2017, and the Company filed a motion to dismiss on April 3, 2017. On October 17, 2019, the court heard oral arguments on the motion to dismiss and took the matter under advisement. Although the Company believes it has substantial defenses to plaintiffs' claims, it is not able to predict the outcome of this action.

Refer to Note 22, "Commitments and Contingencies," of the notes to consolidated financial statements for discussion of environmental, asbestos, insurable liabilities and other litigation matters, which is incorporated by reference herein and is considered an integral part of Part II, Item 1, "Legal Proceedings."

ITEM 1A. RISK FACTORS

There have been no material changes to the disclosure regarding risk factors presented in Part I, Item 1A, of the Company's Annual Report on Form 10-K for the year ended September 30, 2020.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

In March 2021, the Company's Board of Directors approved a $4.0 billion increase to the Company's share repurchase authorization, adding to the $2.0 billion remaining as of December 31, 2020 under the prior share repurchase authorization approved in 2019. The share repurchase authorization does not have an expiration date and may be amended or terminated by the Board of Directors at any time without prior notice. During the three and six months ended March 31, 2021, the Company repurchased approximately $0.3 billion and $0.7 billion of its ordinary shares on an open market, respectively. As of March 31, 2021, approximately $5.7 billion remains available under the share repurchase authorization.

The following table presents information regarding the repurchase of the Company's ordinary shares by the Company as part of the publicly announced program during the three months ended March 31, 2021.

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of the Publicly Announced Program	Approximate Dollar Value of Shares that May Yet be Purchased under the Programs
1/1/21 - 1/31/21				
Purchases by Company	4,877,024	$ 50.47	4,877,024	$ 1,769,901,794
2/1/21 - 2/28/21				
Purchases by Company	1,289,124	51.08	1,289,124	1,704,049,980
3/1/21 - 3/31/21				
Purchases by Company	52,080	56.92	52,080	5,701,085,433

During the three months ended March 31, 2021, acquisitions of shares by the Company from certain employees in order to satisfy employee tax withholding requirements in connection with the vesting of restricted shares were not material.

ITEM 6. EXHIBITS

INDEX TO EXHIBITS

Exhibit No.	Description
10.1	Johnson Controls International plc 2021 Equity and Incentive Plan (incorporated by reference to Annex B to the Registrant's Definitive Proxy Statement on Schedule 14A filed on January 22, 2021) **
10.2	Form of terms and conditions for Option / SAR Awards, Restricted Stock / Unit Awards, Performance Share Awards under the Johnson Controls International plc 2021 Equity and Incentive Plan (filed herewith) **
10.3	Form of terms and conditions for Restricted Stock Units for Directors under the Johnson Controls International plc 2021 Equity and Incentive Plan (filed herewith) **
10.4	Johnson Controls International plc Severance and Change in Control Policy for Officers, as amended and restated March 11, 2021 (filed herewith) **
10.5	Johnson Controls International plc Executive Deferred Compensation Plan, as amended and restated effective March 11, 2021 (filed herewith) **
10.6	Johnson Controls International plc Senior Executive Deferred Compensation Plan, as amended and restated effective March 11, 2021 (filed herewith) **
10.7	Johnson Controls International plc Retirement Restoration Plan, as amended and restated March 11, 2021 (filed herewith) **
31.1	Certification by the Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification by the Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification of Periodic Financial Report by the Chief Executive Officer and Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101	The following materials from Johnson Controls International plc's Quarterly Report on Form 10-Q for the quarter ended March 31, 2021, formatted in iXBRL (Inline Extensible Business Reporting Language): (i) the Consolidated Statements of Financial Position, (ii) the Consolidated Statements of Income, (iii) the Consolidated Statements of Comprehensive Income (Loss), (iv) the Consolidated Statements of Cash Flows, (v) the Consolidated Statements of Shareholders' Equity Attributable to Johnson Controls Ordinary Shareholders and (vi) Notes to Consolidated Financial Statements.
104	Cover Page Interactive Data File (formatted in iXBRL and contained in Exhibit 101)
**	Management contract or compensatory plan

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

JOHNSON CONTROLS INTERNATIONAL PLC

Date: April 30, 2021

By: */s/ Olivier Leonetti*

Olivier Leonetti

Executive Vice President and
Chief Financial Officer

Exhibit 31.1

CERTIFICATIONS

I, George R. Oliver, of Johnson Controls International plc, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Johnson Controls International plc;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: April 30, 2021

/s/ George R. Oliver

George R. Oliver
Chairman and Chief Executive Officer

Exhibit 31.2

CERTIFICATIONS

I, Olivier Leonetti, of Johnson Controls International plc, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Johnson Controls International plc;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: April 30, 2021

/s/ Olivier Leonetti

Olivier Leonetti
Executive Vice President and
Chief Financial Officer

Exhibit 32.1

CERTIFICATION OF PERIODIC FINANCIAL REPORTS

We, George R. Oliver and Olivier Leonetti, of Johnson Controls International plc, certify, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

1. the Quarterly Report on Form 10-Q for the quarter ended March 31, 2021 (Periodic Report) to which this statement is an exhibit fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)) and

2. information contained in the Periodic Report fairly presents, in all material respects, the financial condition and results of operations of Johnson Controls International plc.

Date: April 30, 2021

/s/ George R. Oliver

George R. Oliver
Chairman and Chief Executive Officer

/s/ Olivier Leonetti

Olivier Leonetti
Executive Vice President and
Chief Financial Officer