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

CATERPILLAR®

FORM 10-Q

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

For the quarterly period ended June 30, 2023

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: 1-768

CATERPILLAR INC.
(Exact name of registrant as specified in its charter)

Delaware	**37-0602744**
(State or other jurisdiction of incorporation)	(IRS Employer I.D. No.)
5205 N. O'Connor Boulevard, Suite 100, Irving, Texas	**75039**
(Address of principal executive offices)	(Zip Code)

Registrant’s telephone number, including area code: **(972) 891-7700**

Former Name, Former Address and Former Fiscal Year, if Changed Since Last Report: **N/A**

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

Title of each class	Trading Symbol (s)	Name of each exchange on which registered
Common Stock ($1.00 par value)	CAT	New York Stock Exchange [1]
5.3% Debentures due September 15, 2035	CAT35	New York Stock Exchange

[1] In addition to the New York Stock Exchange, Caterpillar common stock is also listed on stock exchanges in France and Switzerland.

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

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

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

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

At June 30, 2023, 510,143,097 shares of common stock of the registrant were outstanding.

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* Item omitted because no answer is called for or item is not applicable.

Part I. FINANCIAL INFORMATION

Item 1. Financial Statements

Caterpillar Inc.
Consolidated Statement of Results of Operations
(Unaudited)
(Dollars in millions except per share data)

	Three Months Ended June 30 2023	Three Months Ended June 30 2022
Sales and revenues:		
Sales of Machinery, Energy & Transportation	$ 16,545	$ 13,539
Revenues of Financial Products	773	708
Total sales and revenues	17,318	14,247
Operating costs:		
Cost of goods sold	11,065	9,975
Selling, general and administrative expenses	1,528	1,425
Research and development expenses	528	480
Interest expense of Financial Products	245	120
Other operating (income) expenses	300	303
Total operating costs	13,666	12,303
Operating profit	3,652	1,944
Interest expense excluding Financial Products	127	108
Other income (expense)	127	260
Consolidated profit before taxes	3,652	2,096
Provision (benefit) for income taxes	752	427
Profit of consolidated companies	2,900	1,669
Equity in profit (loss) of unconsolidated affiliated companies	24	4
Profit of consolidated and affiliated companies	2,924	1,673
Less: Profit (loss) attributable to noncontrolling interests	2	—
Profit [1]	$ 2,922	$ 1,673
Profit per common share	$ 5.70	$ 3.15
Profit per common share – diluted [2]	$ 5.67	$ 3.13
Weighted-average common shares outstanding (millions)		
– Basic	512.9	531.0
– Diluted [2]	515.0	534.1

[1] Profit attributable to common shareholders.
[2] Diluted by assumed exercise of stock-based compensation awards using the treasury stock method.

See accompanying notes to Consolidated Financial Statements.

Caterpillar Inc.
Consolidated Statement of Comprehensive Income
(Unaudited)
(Dollars in millions)

	Three Months Ended June 30	
	2023	**2022**
Profit of consolidated and affiliated companies	$ 2,924	$ 1,673
Other comprehensive income (loss), net of tax (Note 13):		
Foreign currency translation:	(142)	(659)
Pension and other postretirement benefits:	(3)	(1)
Derivative financial instruments:	(41)	(86)
Available-for-sale securities:	(14)	(43)
Total other comprehensive income (loss), net of tax	(200)	(789)
Comprehensive income	2,724	884
Less: comprehensive income attributable to the noncontrolling interests	2	—
Comprehensive income attributable to shareholders	$ 2,722	$ 884

See accompanying notes to Consolidated Financial Statements.

Caterpillar Inc.
Consolidated Statement of Results of Operations
(Unaudited)
(Dollars in millions except per share data)

	Six Months Ended June 30	
	2023	**2022**
Sales and revenues:		
Sales of Machinery, Energy & Transportation	$ 31,644	$ 26,425
Revenues of Financial Products	1,536	1,411
Total sales and revenues	33,180	27,836
Operating costs:		
Cost of goods sold	21,168	19,534
Selling, general and administrative expenses	2,991	2,771
Research and development expenses	1,000	937
Interest expense of Financial Products	462	226
Other operating (income) expenses	1,176	569
Total operating costs	26,797	24,037
Operating profit	6,383	3,799
Interest expense excluding Financial Products	256	217
Other income (expense)	159	513
Consolidated profit before taxes	6,286	4,095
Provision (benefit) for income taxes	1,460	896
Profit of consolidated companies	4,826	3,199
Equity in profit (loss) of unconsolidated affiliated companies	40	11
Profit of consolidated and affiliated companies	4,866	3,210
Less: Profit (loss) attributable to noncontrolling interests	1	—
Profit [1]	$ 4,865	$ 3,210
Profit per common share	$ 9.46	$ 6.03
Profit per common share – diluted [2]	$ 9.41	$ 5.99
Weighted-average common shares outstanding (millions)		
– Basic	514.3	532.6
– Diluted [2]	517.1	536.1

[1] Profit attributable to common shareholders.
[2] Diluted by assumed exercise of stock-based compensation awards using the treasury stock method.

See accompanying notes to Consolidated Financial Statements.

Caterpillar Inc.
Consolidated Statement of Comprehensive Income
(Unaudited)
(Dollars in millions)

	Six Months Ended June 30	
	2023	**2022**
Profit of consolidated and affiliated companies	$ 4,866	$ 3,210
Other comprehensive income (loss), net of tax (Note 13):		
Foreign currency translation:	465	(774)
Pension and other postretirement benefits:	(5)	(2)
Derivative financial instruments:	43	(63)
Available-for-sale securities:	8	(107)
Total other comprehensive income (loss), net of tax	511	(946)
Comprehensive income	5,377	2,264
Less: comprehensive income attributable to the noncontrolling interests	1	—
Comprehensive income attributable to shareholders	$ 5,376	$ 2,264

See accompanying notes to Consolidated Financial Statements.

Caterpillar Inc.
Consolidated Statement of Financial Position
(Unaudited)
(Dollars in millions)

	June 30, 2023	December 31, 2022
Assets		
Current assets:		
Cash and cash equivalents	$ 7,387	$ 7,004
Receivables – trade and other	9,416	8,856
Receivables – finance	9,288	9,013
Prepaid expenses and other current assets	3,163	2,642
Inventories	17,746	16,270
Total current assets	47,000	43,785
Property, plant and equipment – net	12,124	12,028
Long-term receivables – trade and other	1,161	1,265
Long-term receivables – finance	12,022	12,013
Noncurrent deferred and refundable income taxes	2,607	2,213
Intangible assets	630	758
Goodwill	5,293	5,288
Other assets	4,590	4,593
Total assets	$ 85,427	$ 81,943
Liabilities		
Current liabilities:		
Short-term borrowings:		
Machinery, Energy & Transportation	$ —	$ 3
Financial Products	5,548	5,954
Accounts payable	8,443	8,689
Accrued expenses	4,493	4,080
Accrued wages, salaries and employee benefits	1,755	2,313
Customer advances	2,137	1,860
Dividends payable	663	620
Other current liabilities	3,109	2,690
Long-term debt due within one year:		
Machinery, Energy & Transportation	1,043	120
Financial Products	8,123	5,202
Total current liabilities	35,314	31,531
Long-term debt due after one year:		
Machinery, Energy & Transportation	8,535	9,498
Financial Products	14,450	16,216
Liability for postemployment benefits	4,084	4,203
Other liabilities	4,788	4,604
Total liabilities	67,171	66,052
Commitments and contingencies (Notes 11 and 14)		
Shareholders' equity		
Common stock of $1.00 par value:		
Authorized shares: 2,000,000,000 Issued shares: (6/30/23 and 12/31/22 – 814,894,624) at paid-in amount	6,478	6,560
Treasury stock: (6/30/23 – 304,751,527 shares; 12/31/22 – 298,549,134 shares) at cost	(33,391)	(31,748)
Profit employed in the business	47,094	43,514
Accumulated other comprehensive income (loss)	(1,946)	(2,457)
Noncontrolling interests	21	22
Total shareholders' equity	18,256	15,891
Total liabilities and shareholders' equity	$ 85,427	$ 81,943

See accompanying notes to Consolidated Financial Statements.

Caterpillar Inc.
Consolidated Statement of Changes in Shareholders' Equity
(Unaudited)
(Dollars in millions)

	Common stock	Treasury stock	Profit employed in the business	Accumulated other comprehensive income (loss)	Noncontrolling interests	Total
Three Months Ended June 30, 2022						
Balance at March 31, 2022	$ 6,281	$ (28,326)	$ 40,820	$ (1,710)	$ 32	$ 17,097
Profit of consolidated and affiliated companies	—	—	1,673	—	—	1,673
Foreign currency translation, net of tax	—	—	—	(659)	—	(659)
Pension and other postretirement benefits, net of tax	—	—	—	(1)	—	(1)
Derivative financial instruments, net of tax	—	—	—	(86)	—	(86)
Available-for-sale securities, net of tax	—	—	—	(43)	—	(43)
Dividends declared [1]	—	—	(1,230)	—	—	(1,230)
Common shares issued from treasury stock for stock-based compensation: 416,751	4	28	—	—	—	32
Stock-based compensation expense	67	—	—	—	—	67
Common shares repurchased: 5,860,813 [2]	—	(1,204)	—	—	—	(1,204)
Other	112	1	—	—	—	113
Balance at June 30, 2022	**$ 6,464**	**$ (29,501)**	**$ 41,263**	**$ (2,499)**	**$ 32**	**$ 15,759**
Three Months Ended June 30, 2023						
Balance at March 31, 2023	$ 6,546	$ (32,108)	$ 45,457	$ (1,746)	$ 21	$ 18,170
Profit of consolidated and affiliated companies	—	—	2,922	—	2	2,924
Foreign currency translation, net of tax	—	—	—	(142)	—	(142)
Pension and other postretirement benefits, net of tax	—	—	—	(3)	—	(3)
Derivative financial instruments, net of tax	—	—	—	(41)	—	(41)
Available-for-sale securities, net of tax	—	—	—	(14)	—	(14)
Dividends declared [1]	—	—	(1,285)	—	—	(1,285)
Common shares issued from treasury stock for stock-based compensation: 137,444	(5)	8	—	—	—	3
Stock-based compensation expense	74	—	—	—	—	74
Common shares repurchased: 5,914,408 [2]	—	(1,279)	—	—	—	(1,279)
Outstanding authorized accelerated share repurchase	(150)	—	—	—	—	(150)
Other	13	(12)	—	—	(2)	(1)
Balance at June 30, 2023	**$ 6,478**	**$ (33,391)**	**$ 47,094**	**$ (1,946)**	**$ 21**	**$ 18,256**

[1] Dividends per share of common stock of $2.50 and $2.31 were declared in the three months ended June 30, 2023 and 2022, respectively.
[2] See Note 12 for additional information.

See accompanying notes to Consolidated Financial Statements.

Caterpillar Inc.
Consolidated Statement of Changes in Shareholders' Equity
(Unaudited)
(Dollars in millions)

	Common stock	Treasury stock	Profit employed in the business	Accumulated other comprehensive income (loss)	Noncontrolling interests	Total
Six Months Ended June 30, 2022						
Balance at December 31, 2021	6,398	(27,643)	39,282	(1,553)	32	16,516
Profit of consolidated and affiliated companies	—	—	3,210	—	—	3,210
Foreign currency translation, net of tax	—	—	—	(774)	—	(774)
Pension and other postretirement benefits, net of tax	—	—	—	(2)	—	(2)
Derivative financial instruments, net of tax	—	—	—	(63)	—	(63)
Available-for-sale securities, net of tax	—	—	—	(107)	—	(107)
Dividends declared [1]	—	—	(1,229)	—	—	(1,229)
Common shares issued from treasury stock for stock-based compensation: 1,454,219	(61)	65	—	—	—	4
Stock-based compensation expense	107	—	—	—	—	107
Common shares repurchased: 9,432,497 [2]	—	(1,924)	—	—	—	(1,924)
Other	20	1	—	—	—	21
Balance at June 30, 2022	**$ 6,464**	**$ (29,501)**	**$ 41,263**	**$ (2,499)**	**$ 32**	**$ 15,759**
Six Months Ended June 30, 2023						
Balance at December 31, 2022	6,560	(31,748)	43,514	(2,457)	22	15,891
Profit of consolidated and affiliated companies	—	—	4,865	—	1	4,866
Foreign currency translation, net of tax	—	—	—	465	—	465
Pension and other postretirement benefits, net of tax	—	—	—	(5)	—	(5)
Derivative financial instruments, net of tax	—	—	—	43	—	43
Available-for-sale securities, net of tax	—	—	—	8	—	8
Dividends declared [1]	—	—	(1,285)	—	—	(1,285)
Common shares issued from treasury stock for stock-based compensation: 1,413,775	(71)	49	—	—	—	(22)
Stock-based compensation expense	118	—	—	—	—	118
Outstanding authorized accelerated stock repurchases	(150)	—	—	—	—	(150)
Common shares repurchased: 7,616,168 [2]	—	(1,679)	—	—	—	(1,679)
Other	21	(13)	—	—	(2)	6
Balance at June 30, 2023	**$ 6,478**	**$ (33,391)**	**$ 47,094**	**$ (1,946)**	**$ 21**	**$ 18,256**

[1] Dividends per share of common stock of $2.50 and $2.31 were declared in the six months ended June 30, 2023 and 2022, respectively.
[2] See Note 12 for additional information.

See accompanying notes to Consolidated Financial Statements.

Caterpillar Inc.
Consolidated Statement of Cash Flow
(Unaudited)
(Millions of dollars)

	Six Months Ended June 30	
	2023	**2022**
Cash flow from operating activities:		
Profit of consolidated and affiliated companies	$ 4,866	$ 3,210
Adjustments for non-cash items:		
Depreciation and amortization	1,074	1,110
Provision (benefit) for deferred income taxes	(355)	(283)
Loss on divestiture	572	—
Other	106	49
Changes in assets and liabilities, net of acquisitions and divestitures:		
Receivables – trade and other	(465)	283
Inventories	(1,560)	(2,003)
Accounts payable	34	427
Accrued expenses	381	(80)
Accrued wages, salaries and employee benefits	(562)	(445)
Customer advances	284	514
Other assets – net	81	86
Other liabilities – net	366	(322)
Net cash provided by (used for) operating activities	4,822	2,546
Cash flow from investing activities:		
Capital expenditures – excluding equipment leased to others	(683)	(586)
Expenditures for equipment leased to others	(774)	(688)
Proceeds from disposals of leased assets and property, plant and equipment	368	468
Additions to finance receivables	(6,973)	(6,705)
Collections of finance receivables	6,759	6,519
Proceeds from sale of finance receivables	29	21
Investments and acquisitions (net of cash acquired)	(20)	(36)
Proceeds from sale of businesses and investments (net of cash sold)	(14)	1
Proceeds from sale of securities	463	1,204
Investments in securities	(1,078)	(2,118)
Other – net	41	32
Net cash provided by (used for) investing activities	(1,882)	(1,888)
Cash flow from financing activities:		
Dividends paid	(1,238)	(1,187)
Common stock issued, including treasury shares reissued	(22)	4
Common shares repurchased	(1,829)	(1,924)
Proceeds from debt issued (original maturities greater than three months):		
Financial Products	3,299	4,015
Payments on debt (original maturities greater than three months):		
Machinery, Energy & Transportation	(95)	(13)
Financial Products	(2,208)	(4,233)
Short-term borrowings – net (original maturities three months or less)	(406)	(553)
Net cash provided by (used for) financing activities	(2,499)	(3,891)
Effect of exchange rate changes on cash	(60)	(7)
Increase (decrease) in cash, cash equivalents and restricted cash	381	(3,240)
Cash, cash equivalents and restricted cash at beginning of period	7,013	9,263
Cash, cash equivalents and restricted cash at end of period	$ 7,394	$ 6,023

Cash equivalents primarily represent short-term, highly liquid investments with original maturities of generally three months or less.

See accompanying notes to Consolidated Financial Statements.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

1. A. Nature of operations

Information in our financial statements and related commentary are presented in the following categories:

Machinery, Energy & Transportation (ME&T) – We define ME&T as Caterpillar Inc. and its subsidiaries, excluding Financial Products. ME&T's information relates to the design, manufacturing and marketing of our products.

Financial Products – We define Financial Products as our finance and insurance subsidiaries, primarily Caterpillar Financial Services Corporation (Cat Financial) and Caterpillar Insurance Holdings Inc. (Insurance Services). Financial Products' information relates to the financing to customers and dealers for the purchase and lease of Caterpillar and other equipment.

B. Basis of presentation

In the opinion of management, the accompanying unaudited financial statements include all adjustments, consisting only of normal recurring adjustments, necessary for a fair statement of (a) the consolidated results of operations for the three and six months ended June 30, 2023 and 2022, (b) the consolidated comprehensive income for the three and six months ended June 30, 2023 and 2022, (c) the consolidated financial position at June 30, 2023 and December 31, 2022, (d) the consolidated changes in shareholders' equity for the three and six months ended June 30, 2023 and 2022 and (e) the consolidated cash flow for the six months ended June 30, 2023 and 2022. The financial statements have been prepared in conformity with generally accepted accounting principles in the United States of America (U.S. GAAP) and pursuant to the rules and regulations of the Securities and Exchange Commission (SEC).

Interim results are not necessarily indicative of results for a full year. The information included in this Form 10-Q should be read in conjunction with the audited financial statements and notes thereto included in our company's annual report on Form 10-K for the year ended December 31, 2022 (2022 Form 10-K).

The December 31, 2022 financial position data included herein is derived from the audited consolidated financial statements included in the 2022 Form 10-K but does not include all disclosures required by U.S. GAAP. Certain amounts for prior periods have been reclassified to conform to the current period financial statement presentation.

Cat Financial has end-user customers and dealers that are variable interest entities (VIEs) of which we are not the primary beneficiary. Our maximum exposure to loss from our involvement with these VIEs is limited to the credit risk inherently present in the financial support that we have provided. Credit risk was evaluated and reflected in our financial statements as part of our overall portfolio of finance receivables and related allowance for credit losses. See Note 11 for further discussions on a consolidated VIE.

2. New accounting guidance

A. Adoption of new accounting standards

Supplier finance programs (ASU 2022-04) - In September 2022, the Financial Accounting Standards Board (FASB) issued guidance to enhance the transparency of supplier finance programs. The new standard requires annual disclosure of the key terms of the program, a description of where in the financial statements amounts outstanding under the program are presented, a rollforward of such amounts, and interim disclosure of amounts outstanding as of the end of each period. The guidance does not affect recognition, measurement, or financial statement presentation of supplier finance programs. The ASU was effective on January 1, 2023, except for the rollforward, which is effective on January 1, 2024. Our adoption of this guidance results in the following disclosures relating to our supplier finance programs and related obligations.

We facilitate voluntary supplier finance programs (the “Programs”) through participating financial institutions. The Programs are available to a wide range of suppliers and allow them the option to manage their cash flow. We are not a party to the agreements between the participating financial institutions and the suppliers in connection with the Programs. The range of payment terms, typically 60-90 days, we negotiate with our suppliers is consistent, irrespective of whether a supplier participates in the Programs. The amount of obligations outstanding that are confirmed as valid to the participating financial institutions for suppliers who voluntarily participate in the Programs, included in Accounts payable in the Consolidated Statement of Financial Position, were $901 million and $862 million at June 30, 2023 and December 31, 2022, respectively.

We consider the applicability and impact of all ASUs. We adopted the following ASUs effective January 1, 2023, none of which had a material impact on our financial statements:

ASU	Description
2021-08	Business combinations
2022-02	Financial instruments - Credit losses
2022-06	Reference rate reform

B. Accounting standards issued but not yet adopted

We consider the applicability and impact of all ASUs. We assessed the ASUs and determined that they either were not applicable or were not expected to have a material impact on our financial statements.

3. Sales and revenue contract information

Trade receivables represent amounts due from dealers and end users for the sale of our products, and include amounts due from wholesale inventory financing provided by Cat Financial for a dealer’s purchase of inventory. We recognize trade receivables from dealers and end users in Receivables – trade and other and Long-term receivables – trade and other in the Consolidated Statement of Financial Position. Trade receivables from dealers and end users were $8,079 million, $7,551 million and $7,267 million as of June 30, 2023, December 31, 2022 and December 31, 2021, respectively. Long-term trade receivables from dealers and end users were $482 million, $506 million and $624 million as of June 30, 2023, December 31, 2022 and December 31, 2021, respectively.

For certain contracts, we invoice for payment when contractual milestones are achieved. We recognize a contract asset when a sale is recognized before achieving the contractual milestones for invoicing. We reduce the contract asset when we invoice for payment and recognize a corresponding trade receivable. Contract assets are included in Prepaid expenses and other current assets in the Consolidated Statement of Financial Position. Contract assets were $225 million, $247 million and $187 million as of June 30, 2023, December 31, 2022 and December 31, 2021, respectively.

We invoice in advance of recognizing the sale of certain products. We recognize advanced customer payments as a contract liability in Customer advances and Other liabilities in the Consolidated Statement of Financial Position. Contract liabilities were $2,592 million, $2,314 million and $1,557 million as of June 30, 2023, December 31, 2022 and December 31, 2021, respectively. We reduce the contract liability when revenue is recognized. During the three and six months ended June 30, 2023, we recognized $398 million and $1,135 million, respectively, of revenue that was recorded as a contract liability at the beginning of 2023. During the three and six months ended June 30, 2022, we recognized $220 million and $657 million, respectively.

As of June 30, 2023, we have entered into contracts with dealers and end users for which sales have not been recognized as we have not satisfied our performance obligations and transferred control of the products. The dollar amount of unsatisfied performance obligations for contracts with an original duration greater than one year is $13.2 billion, with about one-half of the amount expected to be completed and revenue recognized in the twelve months following June 30, 2023. We have elected the practical expedient not to disclose unsatisfied performance obligations with an original contract duration of one year or less. Contracts with an original duration of one year or less are primarily sales to dealers for machinery, engines and replacement parts.

See Note 16 for further disaggregated sales and revenues information.

4. Stock-based compensation

Accounting for stock-based compensation requires that the cost resulting from all stock-based payments be recognized in the financial statements based on the grant date fair value of the award. Our stock-based compensation consists of stock options, restricted stock units (RSUs) and performance-based restricted stock units (PRSUs).

We recognized pretax stock-based compensation expense of $74 million and $118 million for the three and six months ended June 30, 2023, respectively, and $67 million and $107 million for the three and six months ended June 30, 2022, respectively.

The following table illustrates the type and fair value of the stock-based compensation awards granted during the six months ended June 30, 2023 and 2022, respectively:

	Six Months Ended June 30, 2023			Six Months Ended June 30, 2022		
	Shares Granted	Weighted-Average Fair Value Per Share	Weighted-Average Grant Date Stock Price	Shares Granted	Weighted-Average Fair Value Per Share	Weighted-Average Grant Date Stock Price
Stock options	777,275	$ 75.79	$ 253.98	1,029,202	$ 51.69	$ 196.70
RSUs	379,426	$ 253.98	$ 253.98	484,025	$ 196.70	$ 196.70
PRSUs	221,869	$ 253.98	$ 253.98	258,900	$ 196.70	$ 196.70

The following table provides the assumptions used in determining the fair value of the stock-based awards for the six months ended June 30, 2023 and 2022, respectively:

	Grant Year	
	2023	2022
Weighted-average dividend yield	2.60%	2.60%
Weighted-average volatility	31.0%	31.7%
Range of volatilities	28.5% - 35.5%	25.3% - 36.8%
Range of risk-free interest rates	3.92% - 5.03%	1.03% - 2.00%
Weighted-average expected lives	7 years	8 years

As of June 30, 2023, the total remaining unrecognized compensation expense related to nonvested stock-based compensation awards was $229 million, which will be amortized over the weighted-average remaining requisite service periods of approximately 1.8 years.

5. Derivative financial instruments and risk management

Our earnings and cash flow are subject to fluctuations due to changes in foreign currency exchange rates, interest rates and commodity prices. Our Risk Management Policy (policy) allows for the use of derivative financial instruments to prudently manage foreign currency exchange rate, interest rate and commodity price exposures. Our policy specifies that derivatives are not to be used for speculative purposes. Derivatives that we use are primarily foreign currency forward, option and cross currency contracts, interest rate contracts and commodity forward and option contracts. Our derivative activities are subject to the management, direction and control of our senior financial officers. We present at least annually to the Audit Committee of the Board of Directors on our risk management practices, including our use of financial derivative instruments.

We recognize all derivatives at their fair value on the Consolidated Statement of Financial Position. On the date the derivative contract is entered into, we designate the derivative as (1) a hedge of the fair value of a recognized asset or liability (fair value hedge), (2) a hedge of a forecasted transaction or the variability of cash flow (cash flow hedge) or (3) an undesignated instrument. We record in current earnings changes in the fair value of a derivative that is qualified, designated and highly effective as a fair value hedge, along with the gain or loss on the hedged recognized asset or liability that is attributable to the hedged risk. We record in AOCI changes in the fair value of a derivative that is qualified, designated and highly effective as a cash flow hedge, to the extent effective, on the Consolidated Statement of Financial Position until we reclassify them to earnings in the same period or periods during which the hedged transaction affects earnings. We report changes in the fair value of undesignated derivative instruments in current earnings. We classify cash flows from designated derivative financial instruments within the same category as the item being hedged on the Consolidated Statement of Cash Flow. We include cash flows from undesignated derivative financial instruments in the investing category on the Consolidated Statement of Cash Flow.

We formally document all relationships between hedging instruments and hedged items, as well as the risk-management objective and strategy for undertaking various hedge transactions. This process includes linking all derivatives that are designated as fair value hedges to specific assets and liabilities on the Consolidated Statement of Financial Position and linking cash flow hedges to specific forecasted transactions or variability of cash flow.

We also formally assess, both at the hedge's inception and on an ongoing basis, whether the designated derivatives that are used in hedging transactions are highly effective in offsetting changes in fair values or cash flow of hedged items. When a derivative is determined not to be highly effective as a hedge or the underlying hedged transaction is no longer probable, we discontinue hedge accounting prospectively, in accordance with the derecognition criteria for hedge accounting.

Foreign Currency Exchange Rate Risk

Foreign currency exchange rate movements create a degree of risk by affecting the U.S. dollar value of sales made and costs incurred in foreign currencies. Movements in foreign currency rates also affect our competitive position as these changes may affect business practices and/or pricing strategies of non-U.S.-based competitors. Additionally, we have balance sheet positions denominated in foreign currencies, thereby creating exposure to movements in exchange rates.

Our ME&T operations purchase, manufacture and sell products in many locations around the world. As we have a diversified revenue and cost base, we manage our future foreign currency cash flow exposure on a net basis. We use foreign currency forward and option contracts to manage unmatched foreign currency cash inflow and outflow. Our objective is to minimize the risk of exchange rate movements that would reduce the U.S. dollar value of our foreign currency cash flow. Our policy allows for managing anticipated foreign currency cash flow for up to approximately five years. As of June 30, 2023, the maximum term of these outstanding contracts at inception was approximately 60 months.

We generally designate as cash flow hedges at inception of the contract any foreign currency forward or option contracts that meet the requirements for hedge accounting and the maturity extends beyond the current quarter-end. We perform designation on a specific exposure basis to support hedge accounting. The remainder of ME&T foreign currency contracts are undesignated.

In managing foreign currency risk for our Financial Products operations, our objective is to minimize earnings volatility resulting from conversion and the remeasurement of net foreign currency balance sheet positions and future transactions denominated in foreign currencies. Our policy allows the use of foreign currency forward, option and cross currency contracts to offset the risk of currency mismatch between our assets and liabilities and exchange rate risk associated with future transactions denominated in foreign currencies. Our foreign currency forward and option contracts are primarily undesignated. We designate fixed-to-fixed cross currency contracts as cash flow hedges to protect against movements in exchange rates on foreign currency fixed-rate assets and liabilities.

Interest Rate Risk

Interest rate movements create a degree of risk by affecting the amount of our interest payments and the value of our fixed-rate debt. Our practice is to use interest rate contracts to manage our exposure to interest rate changes.

Our ME&T operations generally use fixed-rate debt as a source of funding. Our objective is to minimize the cost of borrowed funds. Our policy allows us to enter into fixed-to-floating interest rate contracts and forward rate agreements to meet that objective. We designate fixed-to-floating interest rate contracts as fair value hedges at inception of the contract, and we designate certain forward rate agreements as cash flow hedges at inception of the contract.

Financial Products operations has a match-funding policy that addresses interest rate risk by aligning the interest rate profile (fixed or floating rate and duration) of Cat Financial's debt portfolio with the interest rate profile of our receivables portfolio within predetermined ranges on an ongoing basis. In connection with that policy, we use interest rate derivative instruments to modify the debt structure to match assets within the receivables portfolio. This matched funding reduces the volatility of margins between interest-bearing assets and interest-bearing liabilities, regardless of which direction interest rates move.

Our policy allows us to use fixed-to-floating, floating-to-fixed and floating-to-floating interest rate contracts to meet the match-funding objective. We designate fixed-to-floating interest rate contracts as fair value hedges to protect debt against changes in fair value due to changes in the benchmark interest rate. We designate most floating-to-fixed interest rate contracts as cash flow hedges to protect against the variability of cash flows due to changes in the benchmark interest rate.

We have, at certain times, liquidated fixed-to-floating and floating-to-fixed interest rate contracts at both ME&T and Financial Products. We amortize the gains or losses associated with these contracts at the time of liquidation into earnings over the original term of the previously designated hedged item.

Commodity Price Risk

Commodity price movements create a degree of risk by affecting the price we must pay for certain raw materials. Our policy is to use commodity forward and option contracts to manage the commodity risk and reduce the cost of purchased materials.

Our ME&T operations purchase base and precious metals embedded in the components we purchase from suppliers. Our suppliers pass on to us price changes in the commodity portion of the component cost. In addition, we are subject to price changes on energy products such as natural gas and diesel fuel purchased for operational use.

Our objective is to minimize volatility in the price of these commodities. Our policy allows us to enter into commodity forward and option contracts to lock in the purchase price of a portion of these commodities within a five-year horizon. All such commodity forward and option contracts are undesignated.

The location and fair value of derivative instruments reported in the Consolidated Statement of Financial Position were as follows:

(Millions of dollars)	Fair Value			
	June 30, 2023		December 31, 2022	
	Assets [1]	Liabilities [2]	Assets [1]	Liabilities [2]
Designated derivatives				
Foreign exchange contracts	$ 460	$ (159)	$ 462	$ (152)
Interest rate contracts	71	(284)	93	(288)
Total	$ 531	$ (443)	$ 555	$ (440)
Undesignated derivatives				
Foreign exchange contracts	$ 42	$ (62)	$ 65	$ (47)
Commodity contracts	11	(10)	24	(9)
Total	$ 53	$ (72)	$ 89	$ (56)

[1] Assets are classified on the Consolidated Statement of Financial Position as Receivables - trade and other or Long-term receivables - trade and other.
[2] Liabilities are classified on the Consolidated Statement of Financial Position as Accrued expenses or Other liabilities.

The total notional amounts of the derivative instruments as of June 30, 2023 and December 31, 2022 were $21.9 billion and $24.3 billion, respectively. The notional amounts of the derivative financial instruments do not represent amounts exchanged by the parties. We calculate the amounts exchanged by the parties by referencing the notional amounts and by other terms of the derivatives, such as foreign currency exchange rates, interest rates or commodity prices.

Gains (Losses) on derivative instruments are categorized as follows:

(Millions of dollars)	Three Months Ended June 30					
	Fair Value / Undesignated Hedges		Cash Flow Hedges			
	Gains (Losses) Recognized on the Consolidated Statement of Results of Operations[1]		Gains (Losses) Recognized in AOCI		Gains (Losses) Reclassified from AOCI[2]	
	2023	2022	2023	2022	2023	2022
Foreign exchange contracts	$ 31	$ 33	$ (26)	$ 186	$ 28	$ 323
Interest rate contracts	(34)	9	14	21	14	(2)
Commodity contracts	(20)	(48)	—	—	—	—
Total	$ (23)	$ (6)	$ (12)	$ 207	$ 42	$ 321

[1] Foreign exchange contract and Commodity contract gains (losses) are included in Other income (expense). Interest rate contract gains (losses) are included in Interest expense of Financial Products and Interest expense excluding Financial Products.
[2] Foreign exchange contract gains (losses) are primarily included in Other income (expense). Interest rate contract gains (losses) are primarily included in Interest expense of Financial Products.

(Millions of dollars)	Six Months Ended June 30					
	Fair Value / Undesignated Hedges		Cash Flow Hedges			
	Gains (Losses) Recognized on the Consolidated Statement of Results of Operations [1]		Gains (Losses) Recognized in AOCI		Gains (Losses) Reclassified from AOCI [2]	
	2023	2022	2023	2022	2023	2022
Foreign exchange contracts	$ 3	$ (30)	$ 32	$ 177	$ (37)	$ 349
Interest rate contracts	(60)	17	12	77	27	(9)
Commodity contract	(12)	45	—	—	—	—
Total	$ (69)	$ 32	$ 44	$ 254	$ (10)	$ 340

[1] Foreign exchange contract and Commodity contract gains (losses) are included in Other income (expense). Interest rate contract gains (losses) are primarily included in Interest expense of Financial Products.

[2] Foreign exchange contract gains (losses) are primarily included in Other income (expense). Interest rate contract gains (losses) are primarily included in Interest expense of Financial Products.

The following amounts were recorded on the Consolidated Statement of Financial Position related to cumulative basis adjustments for fair value hedges:

(Millions of dollars)	Carrying Value of the Hedged Liabilities		Cumulative Amount of Fair Value Hedging Adjustment Included in the Carrying Value of the Hedged Liabilities	
	June 30, 2023	December 31, 2022	June 30, 2023	December 31, 2022
Long-term debt due within one year	$ 195	$ —	$ (5)	$ —
Long-term debt due after one year	4,033	4,173	(271)	(280)
Total	$ 4,228	$ 4,173	$ (276)	$ (280)

We enter into International Swaps and Derivatives Association (ISDA) master netting agreements within ME&T and Financial Products that permit the net settlement of amounts owed under their respective derivative contracts. Under these master netting agreements, net settlement generally permits the company or the counterparty to determine the net amount payable for contracts due on the same date and in the same currency for similar types of derivative transactions. The master netting agreements may also provide for net settlement of all outstanding contracts with a counterparty in the case of an event of default or a termination event.

Collateral is typically not required of the counterparties or of our company under the master netting agreements. As of June 30, 2023 and December 31, 2022, no cash collateral was received or pledged under the master netting agreements.

The effect of the net settlement provisions of the master netting agreements on our derivative balances upon an event of default or termination event was as follows:

(Millions of dollars)	June 30, 2023		December 31, 2022	
	Assets	Liabilities	Assets	Liabilities
Gross Amounts Recognized	$ 584	$ (515)	$ 644	$ (496)
Financial Instruments Not Offset	(224)	224	(233)	233
Net Amount	$ 360	$ (291)	$ 411	$ (263)

6. Inventories

Inventories (principally using the last-in, first-out (LIFO) method) were comprised of the following:

(Millions of dollars)	June 30, 2023	December 31, 2022
Raw materials	$ 6,783	$ 6,370
Work-in-process	1,640	1,452
Finished goods	8,979	8,138
Supplies	344	310
Total inventories	$ 17,746	$ 16,270

7. Intangible assets and goodwill

A. Intangible assets

Intangible assets were comprised of the following:

(Millions of dollars)		June 30, 2023		
	Weighted Amortizable Life (Years)	Gross Carrying Amount [1]	Accumulated Amortization [1]	Net
Customer relationships	16	$ 2,233	$ (1,744)	$ 489
Intellectual property	14	650	(551)	99
Other	17	120	(78)	42
Total finite-lived intangible assets	15	$ 3,003	$ (2,373)	$ 630

		December 31, 2022		
	Weighted Amortizable Life (Years)	Gross Carrying Amount	Accumulated Amortization	Net
Customer relationships	16	$ 2,233	$ (1,675)	$ 558
Intellectual property	12	1,473	(1,320)	153
Other	16	132	(85)	47
Total finite-lived intangible assets	14	$ 3,838	$ (3,080)	$ 758

[1] For the six months ended June 30, 2023, $829 million of intangible assets were fully amortized and have been removed.

Amortization expense for the three and six months ended June 30, 2023 was $64 million and $130 million, respectively. Amortization expense for the three and six months ended June 30, 2022 was $71 million and $143 million, respectively. Amortization expense related to intangible assets is expected to be:

(Millions of dollars)

Remaining Six Months of 2023	2024	2025	2026	2027	Thereafter
$87	$171	$161	$91	$27	$93

B. Goodwill

No goodwill was impaired during the six months ended June 30, 2023 or 2022.

The changes in carrying amount of goodwill by reportable segment for the six months ended June 30, 2023 were as follows:

(Millions of dollars)	December 31, 2022	Other Adjustments [1]	June 30, 2023
Construction Industries			
Goodwill	$ 287	$ (13)	$ 274
Impairments	(22)	—	(22)
Net goodwill	265	(13)	252
Resource Industries			
Goodwill	4,130	16	4,146
Impairments	(1,175)	—	(1,175)
Net goodwill	2,955	16	2,971
Energy & Transportation			
Goodwill	2,947	6	2,953
Impairments	(925)	—	(925)
Net goodwill	2,022	6	2,028
All Other [2]			
Goodwill	46	(4)	42
Impairments	—	—	—
Net goodwill	46	(4)	42
Consolidated total			
Goodwill	7,410	5	7,415
Impairments	(2,122)	—	(2,122)
Net goodwill	$ 5,288	$ 5	$ 5,293

[1] Other adjustments are comprised primarily of foreign currency translation.
[2] Includes All Other operating segment (See Note 16).

8. Investments in debt and equity securities

We have investments in certain debt and equity securities, which we record at fair value and primarily include in Other assets in the Consolidated Statement of Financial Position.

We classify debt securities primarily as available-for-sale. We include the unrealized gains and losses arising from the revaluation of available-for-sale debt securities, net of applicable deferred income taxes, in equity (AOCI in the Consolidated Statement of Financial Position). We include the unrealized gains and losses arising from the revaluation of the equity securities in Other income (expense) in the Consolidated Statement of Results of Operations. We generally determine realized gains and losses on sales of investments using the specific identification method for available-for-sale debt and equity securities and include them in Other income (expense) in the Consolidated Statement of Results of Operations.

The cost basis and fair value of available-for-sale debt securities with unrealized gains and losses included in equity (AOCI in the Consolidated Statement of Financial Position) were as follows:

Available-for-sale debt securities	June 30, 2023			December 31, 2022		
(Millions of dollars)	Cost Basis	Unrealized Pretax Net Gains (Losses)	Fair Value	Cost Basis	Unrealized Pretax Net Gains (Losses)	Fair Value
Government debt securities						
U.S. treasury bonds	$ 10	$ —	$ 10	$ 9	$ —	$ 9
Other U.S. and non-U.S. government bonds	60	(4)	56	60	(5)	55
Corporate debt securities						
Corporate bonds and other debt securities	2,585	(85)	2,500	2,561	(95)	2,466
Asset-backed securities	191	(5)	186	187	(5)	182
Mortgage-backed debt securities						
U.S. governmental agency	390	(31)	359	364	(31)	333
Residential	3	(1)	2	3	(1)	2
Commercial	138	(11)	127	127	(10)	117
Total available-for-sale debt securities	$ 3,377	$ (137)	$ 3,240	$ 3,311	$ (147)	$ 3,164

Available-for-sale debt securities in an unrealized loss position:

	June 30, 2023					
	Less than 12 months [1]		12 months or more [1]		Total	
(Millions of dollars)	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
Government debt securities						
Other U.S. and non-U.S. government bonds	$ 13	$ —	$ 26	$ 4	$ 39	$ 4
Corporate debt securities						
Corporate bonds	1,414	26	947	62	2,361	88
Asset-backed securities	57	1	92	4	149	5
Mortgage-backed debt securities						
U.S. governmental agency	131	5	218	26	349	31
Residential	—	—	2	1	2	1
Commercial	41	2	86	9	127	11
	$ 1,656	$ 34	$ 1,371	$ 106	$ 3,027	$ 140

	December 31, 2022					
	Less than 12 months [1]		12 months or more [1]		Total	
(Millions of dollars)	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
Government debt securities						
Other U.S. and non-U.S. government bonds	$ 19	$ 1	$ 20	$ 4	$ 39	$ 5
Corporate debt securities						
Corporate bonds	1,815	46	357	50	2,172	96
Asset-backed securities	75	2	55	3	130	5
Mortgage-backed debt securities						
U.S. governmental agency	229	16	98	15	327	31
Residential	2	—	1	1	3	1
Commercial	63	5	54	5	117	10
Total	$ 2,203	$ 70	$ 585	$ 78	$ 2,788	$ 148

[1] Indicates the length of time that individual securities have been in a continuous unrealized loss position.

The unrealized losses on our investments in government debt securities, corporate debt securities, and mortgage-backed debt securities relate to changes in underlying interest rates and credit spreads since time of purchase. We do not intend to sell the investments, and it is not likely that we will be required to sell the investments before recovery of their respective amortized cost basis. In addition, we did not expect credit-related losses on these investments as of June 30, 2023.

The cost basis and fair value of available-for-sale debt securities at June 30, 2023, by contractual maturity, are shown below. Expected maturities will differ from contractual maturities because borrowers may have the right to prepay and creditors may have the right to call obligations.

	June 30, 2023	
(Millions of dollars)	**Cost Basis**	**Fair Value**
Due in one year or less	$ 973	$ 963
Due after one year through five years	1,539	1,470
Due after five years through ten years	270	257
Due after ten years	64	62
U.S. governmental agency mortgage-backed securities	390	359
Residential mortgage-backed securities	3	2
Commercial mortgage-backed securities	138	127
Total debt securities – available-for-sale	$ 3,377	$ 3,240

Sales of available-for-sale debt securities:

	Three Months Ended June 30		Six Months Ended June 30	
(Millions of dollars)	**2023**	**2022**	**2023**	**2022**
Proceeds from the sale of available-for-sale securities	$ 216	$ 174	$ 439	$ 270
Gross gains from the sale of available-for-sale securities	—	—	—	1
Gross losses from the sale of available-for-sale securities	—	—	—	1

In addition, we had $500 million of investments in time deposits classified as held-to-maturity debt securities as of June 30, 2023. We did not have any investments classified as held-to-maturity debt securities as of December 31, 2022. All these investments mature within one year and we include them in Prepaid expenses and other current assets in the Consolidated Statement of Financial Position. We record held-to-maturity debt securities at amortized cost, which approximates fair value.

For the three months ended June 30, 2023 and 2022, the net unrealized gains (losses) for equity securities held at June 30, 2023 and 2022 were $(4) million and $(48) million, respectively. For the six months ended June 30, 2023 and 2022, the net unrealized gains (losses) for equity securities held at June 30, 2023 and 2022 were $(14) million and $(59) million, respectively.

9. Postretirement benefits

A. Pension and postretirement benefit costs

(Millions of dollars)	U.S. Pension Benefits June 30 2023	U.S. Pension Benefits June 30 2022	Non-U.S. Pension Benefits June 30 2023	Non-U.S. Pension Benefits June 30 2022	Other Postretirement Benefits June 30 2023	Other Postretirement Benefits June 30 2022
For the three months ended:						
Components of net periodic benefit cost:						
Service cost	$ —	$ —	$ 10	$ 12	$ 17	$ 25
Interest cost	164	101	30	18	36	20
Expected return on plan assets	(172)	(168)	(40)	(33)	(3)	(2)
Amortization of prior service cost (credit)	—	—	—	—	(3)	(2)
Net periodic benefit cost (benefit) [1]	$ (8)	$ (67)	$ —	$ (3)	$ 47	$ 41
For the six months ended:						
Components of net periodic benefit cost:						
Service cost	$ —	$ —	$ 20	$ 25	$ 34	$ 50
Interest cost	328	201	61	36	72	40
Expected return on plan assets	(344)	(335)	(80)	(67)	(6)	(6)
Amortization of prior service cost (credit)	—	—	—	—	(6)	(3)
Net periodic benefit cost (benefit) [1]	$ (16)	$ (134)	$ 1	$ (6)	$ 94	$ 81

[1] The service cost component is included in Operating costs in the Consolidated Statement of Results of Operations. All other components are included in Other income (expense) in the Consolidated Statement of Results of Operations.

We made $56 million and $264 million of contributions to our pension and other postretirement plans during the three and six months ended June 30, 2023, respectively. We currently anticipate full-year 2023 contributions of approximately $372 million.

B. Defined contribution benefit costs

Total company costs related to our defined contribution plans, which are included in Operating Costs in the Consolidated Statement of Results of Operations, were as follows:

(Millions of dollars)	Three Months Ended June 30 2023	Three Months Ended June 30 2022	Six Months Ended June 30 2023	Six Months Ended June 30 2022
U.S. Plans	$ 136	$ 34	$ 285	$ 149
Non-U.S. Plans	29	27	58	56
	$ 165	$ 61	$ 343	$ 205

The increase in the U.S. defined contribution benefit costs for the three and six months ended June 30, 2023 was primarily due to the fair value adjustments related to our non-qualified deferred compensation plans.

10. Leases

Revenues from finance and operating leases, primarily included in Revenues of Financial Products on the Consolidated Statement of Results of Operations, were as follows:

	Three Months Ended June 30		Six Months Ended June 30	
(Millions of dollars)	**2023**	**2022**	**2023**	**2022**
Finance lease revenue	$ 105	$ 109	$ 209	$ 221
Operating lease revenue	275	271	550	549
Total	$ 380	$ 380	$ 759	$ 770

We present revenues net of sales and other related taxes.

11. Guarantees and product warranty

Caterpillar dealer performance guarantees
Dealer performance guarantees mainly consists of an indemnity to a third-party insurance company for potential losses related to performance bonds issued on behalf of Caterpillar dealers. The bonds have varying terms and are issued to insure governmental agencies against nonperformance by certain dealers.

We have dealer performance guarantees and third-party performance guarantees that do not limit potential payment to end users related to indemnities and other commercial contractual obligations. In addition, we have entered into contracts involving industry standard indemnifications that do not limit potential payment. For these unlimited guarantees, we are unable to estimate a maximum potential amount of future payments that could result from claims made.

No significant loss has been experienced or is anticipated under any of these guarantees. At June 30, 2023 and December 31, 2022, the related recorded liability was $5 million and $2 million, respectively. The maximum potential amount of future payments that we can estimate (undiscounted and without reduction for any amounts that may possibly be recovered under recourse or collateralized provisions) and we could be required to make under the guarantees was as follows:

(Millions of dollars)	**June 30, 2023**	**December 31, 2022**
Caterpillar dealer performance guarantees	$ 177	$ 188
Other guarantees	390	323
Total guarantees	$ 567	$ 511

Cat Financial provides guarantees to purchase certain loans of Caterpillar dealers from a special-purpose corporation (SPC) that qualifies as a variable interest entity. The purpose of the SPC is to provide short-term working capital loans to Caterpillar dealers. This SPC issues commercial paper and uses the proceeds to fund its loan program. Cat Financial receives a fee for providing this guarantee. Cat Financial is the primary beneficiary of the SPC as its guarantees result in Cat Financial having both the power to direct the activities that most significantly impact the SPC's economic performance and the obligation to absorb losses, and therefore Cat Financial has consolidated the financial statements of the SPC. As of June 30, 2023 and December 31, 2022, the SPC's assets of $1.24 billion and $971 million, respectively, were primarily comprised of loans to dealers, and the SPC's liabilities of $1.24 billion and $970 million, respectively, were primarily comprised of commercial paper. The assets of the SPC are not available to pay Cat Financial's creditors. Cat Financial may be obligated to perform under the guarantee if the SPC experiences losses. No loss has been experienced or is anticipated under this loan purchase agreement.

We determine our product warranty liability by applying historical claim rate experience to the current field population and dealer inventory. Generally, we base historical claim rates on actual warranty experience for each product by machine model/engine size by customer or dealer location (inside or outside North America). We develop specific rates for each product shipment month and update them monthly based on actual warranty claim experience.

The reconciliation of the change in our product warranty liability balances for the six months ended June 30 was as follows:

	First Six Months	
(Millions of dollars)	**2023**	**2022**
Warranty liability, beginning of period	$ 1,761	$ 1,689
Reduction in liability (payments)	(410)	(388)
Increase in liability (new warranties)	471	350
Warranty liability, end of period	$ 1,822	$ 1,651

12. Profit per share

Computations of profit per share:	**Three Months Ended June 30**		**Six Months Ended June 30**	
(Dollars in millions except per share data)	**2023**	**2022**	**2023**	**2022**
Profit for the period (A) [1]	$ 2,922	$ 1,673	$ 4,865	$ 3,210
Determination of shares (in millions):				
Weighted-average number of common shares outstanding (B)	512.9	531.0	514.3	532.6
Shares issuable on exercise of stock awards, net of shares assumed to be purchased out of proceeds at average market price	2.1	3.1	2.8	3.5
Average common shares outstanding for fully diluted computation (C) [2]	515.0	534.1	517.1	536.1
Profit per share of common stock:				
Assuming no dilution (A/B)	$ 5.70	$ 3.15	$ 9.46	$ 6.03
Assuming full dilution (A/C) [2]	$ 5.67	$ 3.13	$ 9.41	$ 5.99
Shares outstanding as of June 30 (in millions)			510.1	527.9

[1] Profit attributable to common shareholders.
[2] Diluted by assumed exercise of stock-based compensation awards using the treasury stock method.

For the three and six months ended June 30, 2023 and 2022, we excluded 0.8 million and 2.1 million of outstanding stock options, respectively, from the computation of diluted earnings per share because the effect would have been antidilutive.

For the three and six months ended June 30, 2023, we repurchased 5.9 million and 7.6 million shares of Caterpillar common stock, respectively, at an aggregate cost of $1.3 billion and $1.7 billion, respectively. For the three and six months ended June 30, 2022, we repurchased 5.9 million and 9.4 million shares of Caterpillar common stock, respectively, at an aggregate cost of $1.2 billion and $1.9 billion, respectively. We made these purchases through the combination of accelerated stock repurchase agreements with a third-party financial institution and open market transactions in 2023 and 2022.

13. Accumulated other comprehensive income (loss)

We present comprehensive income and its components in the Consolidated Statement of Comprehensive Income. Changes in the balances for each component of AOCI were as follows:

	Three Months Ended June 30		Six Months Ended June 30	
(Millions of dollars)	**2023**	**2022**	**2023**	**2022**
Foreign currency translation:				
Beginning balance	$ (1,721)	$ (1,623)	$ (2,328)	$ (1,508)
Gains (losses) on foreign currency translation	(144)	(632)	(41)	(736)
Less: Tax provision /(benefit)	(2)	27	(12)	38
Net gains (losses) on foreign currency translation	(142)	(659)	(29)	(774)
(Gains) losses reclassified to earnings	—	—	494	—
Less: Tax provision /(benefit)	—	—	—	—
Net (gains) losses reclassified to earnings	—	—	494	—
Other comprehensive income (loss), net of tax	(142)	(659)	465	(774)
Ending balance	$ (1,863)	$ (2,282)	$ (1,863)	$ (2,282)
Pension and other postretirement benefits				
Beginning balance	$ (41)	$ (63)	$ (39)	$ (62)
Current year prior service credit (cost)	—	—	—	—
Less: Tax provision /(benefit)	—	—	—	—
Net current year prior service credit (cost)	—	—	—	—
Amortization of prior service (credit) cost	(3)	(2)	(6)	(3)
Less: Tax provision /(benefit)	—	(1)	(1)	(1)
Net amortization of prior service (credit) cost	(3)	(1)	(5)	(2)
Other comprehensive income (loss), net of tax	(3)	(1)	(5)	(2)
Ending balance	$ (44)	$ (64)	$ (44)	$ (64)
Derivative financial instruments				
Beginning balance	$ 112	$ 20	$ 28	$ (3)
Gains (losses) deferred	(12)	207	44	254
Less: Tax provision /(benefit)	(3)	26	9	36
Net gains (losses) deferred	(9)	181	35	218
(Gains) losses reclassified to earnings	(42)	(321)	10	(340)
Less: Tax provision /(benefit)	(10)	(54)	2	(59)
Net (gains) losses reclassified to earnings	(32)	(267)	8	(281)
Other comprehensive income (loss), net of tax	(41)	(86)	43	(63)
Ending balance	$ 71	$ (66)	$ 71	$ (66)
Available-for-sale securities				
Beginning balance	$ (96)	$ (44)	$ (118)	$ 20
Gains (losses) deferred	(16)	(54)	10	(133)
Less: Tax provision /(benefit)	(2)	(11)	2	(26)
Net gains (losses) deferred	(14)	(43)	8	(107)
(Gains) losses reclassified to earnings	—	—	—	—
Less: Tax provision /(benefit)	—	—	—	—
Net (gains) losses reclassified to earnings	—	—	—	—
Other comprehensive income (loss), net of tax	(14)	(43)	8	(107)
Ending balance	$ (110)	$ (87)	$ (110)	$ (87)
Total AOCI Ending Balance at June 30	$ (1,946)	$ (2,499)	$ (1,946)	$ (2,499)

14. Environmental and legal matters

The Company is regulated by federal, state and international environmental laws governing its use, transport and disposal of substances and control of emissions. In addition to governing our manufacturing and other operations, these laws often impact the development of our products, including, but not limited to, required compliance with air emissions standards applicable to internal combustion engines. We have made, and will continue to make, significant research and development and capital expenditures to comply with these emissions standards.

We are engaged in remedial activities at a number of locations, often with other companies, pursuant to federal and state laws. When it is probable we will pay remedial costs at a site, and those costs can be reasonably estimated, we accrue the investigation, remediation, and operating and maintenance costs against our earnings. We accrue costs based on consideration of currently available data and information with respect to each individual site, including available technologies, current applicable laws and regulations, and prior remediation experience. Where no amount within a range of estimates is more likely, we accrue the minimum. Where multiple potentially responsible parties are involved, we consider our proportionate share of the probable costs. In formulating the estimate of probable costs, we do not consider amounts expected to be recovered from insurance companies or others. We reassess these accrued amounts on a quarterly basis. The amount recorded for environmental remediation is not material and is included in Accrued expenses. We believe there is no more than a remote chance that a material amount for remedial activities at any individual site, or at all the sites in the aggregate, will be required.

In addition, we are involved in other unresolved legal actions that arise in the normal course of business. The most prevalent of these unresolved actions involve disputes related to product design, manufacture and performance liability (including claimed asbestos exposure), contracts, employment issues, environmental matters, intellectual property rights, taxes (other than income taxes) and securities laws. The aggregate range of reasonably possible losses in excess of accrued liabilities, if any, associated with these unresolved legal actions is not material. In some cases, we cannot reasonably estimate a range of loss because there is insufficient information regarding the matter. However, we believe there is no more than a remote chance that any liability arising from these matters would be material. Although it is not possible to predict with certainty the outcome of these unresolved legal actions, we believe that these actions will not individually or in the aggregate have a material adverse effect on our consolidated results of operations, financial position or liquidity.

15. Income taxes

The effective tax rate for the six months ended June 30, 2023 was 23.2 percent compared to 21.9 percent for the six months ended June 30, 2022. The effective tax rate for the three months ended June 30, 2023 was 20.6 percent compared to 20.4 percent for the three months ended June 30, 2022.

The provision for income taxes for the six months ended June 30, 2023, reflected an estimated annual tax rate of 23 percent, compared with 23.5 percent for the six months ended June 30, 2022, excluding the discrete items discussed below. The comparative tax rate for full-year 2022 was 23.2 percent.

The 2023 estimated annual tax rate excludes the impact of the nondeductible loss of $586 million related to the divestiture of the company's Longwall business. In the six months ended June 30, 2023, the company recorded discrete tax benefits of $88 million due to a change in the valuation allowance for certain deferred tax assets. In addition, the company recorded a discrete tax benefit of $32 million for the settlement of stock-based compensation awards with associated tax deductions in excess of cumulative U.S. GAAP compensation expense, compared with a $18 million benefit for the six months ended June 30, 2022. In the six months ended June 30, 2022, the company also recorded discrete tax benefits of $49 million for a prior year tax adjustment due to a change in estimate.

16. Segment information

A. Basis for segment information

Our Executive Office is comprised of a Chief Executive Officer (CEO), four Group Presidents, a Chief Financial Officer (CFO), a Chief Legal Officer and a Chief Human Resources Officer. The Group Presidents and CFO are accountable for a related set of end-to-end businesses that they manage. The Chief Legal Officer leads the Law, Security and Public Policy Division. The Chief Human Resources Officer leads the Human Resources Organization. The CEO allocates resources and manages performance at the Group President/CFO level. As such, the CEO serves as our Chief Operating Decision Maker, and operating segments are primarily based on the Group President/CFO reporting structure.

Three of our operating segments, Construction Industries, Resource Industries and Energy & Transportation are led by Group Presidents. One operating segment, Financial Products, is led by the CFO who also has responsibility for Corporate Services. Corporate Services is a cost center primarily responsible for the performance of certain support functions globally and to provide centralized services; it does not meet the definition of an operating segment. One Group President leads one smaller operating segment that is included in the All Other operating segment. The Law, Security and Public Policy Division and the Human Resources Organization are cost centers and do not meet the definition of an operating segment.

B. Description of segments

We have five operating segments, of which four are reportable segments. Following is a brief description of our reportable segments and the business activities included in the All Other operating segment:

Construction Industries: A segment primarily responsible for supporting customers using machinery in infrastructure and building construction applications. Responsibilities include business strategy, product design, product management and development, manufacturing, marketing and sales and product support. The product portfolio includes asphalt pavers; backhoe loaders; cold planers; compactors; compact track loaders; forestry machines; material handlers; motor graders; pipelayers; road reclaimers; skid steer loaders; telehandlers; track-type loaders; track-type tractors (small, medium); track excavators (mini, small, medium, large); wheel excavators; wheel loaders (compact, small, medium); and related parts and work tools. Inter-segment sales are a source of revenue for this segment.

Resource Industries: A segment primarily responsible for supporting customers using machinery in mining, heavy construction and quarry and aggregates. Responsibilities include business strategy, product design, product management and development, manufacturing, marketing and sales and product support. The product portfolio includes large track-type tractors; large mining trucks; hard rock vehicles; electric rope shovels; draglines; hydraulic shovels; rotary drills; large wheel loaders; off-highway trucks; articulated trucks; wheel tractor scrapers; wheel dozers; landfill compactors; soil compactors; select work tools; machinery components; electronics and control systems and related parts. In addition to equipment, Resource Industries also develops and sells technology products and services to provide customers fleet management, equipment management analytics, autonomous machine capabilities, safety services and mining performance solutions. Resource Industries also manages areas that provide services to other parts of the company, including strategic procurement, lean center of excellence, integrated manufacturing, research and development for hydraulic systems, automation, electronics and software for Cat machines and engines. Inter-segment sales are a source of revenue for this segment.

Energy & Transportation: A segment primarily responsible for supporting customers using reciprocating engines, turbines, diesel-electric locomotives and related services across industries serving Oil and Gas, Power Generation, Industrial and Transportation applications, including marine- and rail-related businesses. Responsibilities include business strategy, product design, product management, development and testing, manufacturing, marketing and sales and product support. The product and services portfolio includes turbines, centrifugal gas compressors, and turbine-related services; reciprocating engine-powered generator sets; integrated systems and solutions used in the electric power generation industry; reciprocating engines, drivetrain and integrated systems and solutions for the marine and oil and gas industries; reciprocating engines, drivetrain and integrated systems and solutions supplied to the industrial industry as well as Cat machinery; electrified powertrain and zero-emission power sources and service solutions development; and diesel-electric locomotives and components and other rail-related products and services, including remanufacturing and leasing. Responsibilities also include the remanufacturing of Caterpillar reciprocating engines and components and remanufacturing services for other companies; and product support of on-highway vocational trucks for North America. Inter-segment sales are a source of revenue for this segment.

Financial Products Segment: Provides financing alternatives to customers and dealers around the world for Caterpillar products and services, as well as financing for power generation facilities that, in most cases, incorporate Caterpillar products. Financing plans include operating and finance leases, revolving charge accounts, installment sale contracts, repair/rebuild financing, working capital loans and wholesale financing plans. The segment also provides insurance and risk management products and services that help customers and dealers manage their business risk. Insurance and risk management products offered include physical damage insurance, inventory protection plans, extended service coverage and maintenance plans for machines and engines, and dealer property and casualty insurance. The various forms of financing, insurance and risk management products offered to customers and dealers help support the purchase and lease of Caterpillar equipment. The segment also earns revenues from ME&T, but the related costs are not allocated to operating segments. Financial Products' segment profit is determined on a pretax basis and includes other income/expense items.

All Other operating segment: Primarily includes activities such as: business strategy; product management and development; manufacturing and sourcing of filters and fluids, undercarriage, ground-engaging tools, fluid transfer products, precision seals, rubber sealing and connecting components primarily for Cat® products; parts distribution; integrated logistics solutions; distribution services responsible for dealer development and administration, including a wholly owned dealer in Japan; dealer portfolio management and ensuring the most efficient and effective distribution of machines, engines and parts; brand management and marketing strategy; and digital investments for new customer and dealer solutions that integrate data analytics with state-of-the-art digital technologies while transforming the buying experience. Results for the All Other operating segment are included as a reconciling item between reportable segments and consolidated external reporting.

C. Segment measurement and reconciliations

There are several methodology differences between our segment reporting and our external reporting. The following is a list of the more significant methodology differences:

- ME&T segment net assets generally include inventories, receivables, property, plant and equipment, goodwill, intangibles, accounts payable and customer advances. We generally manage at the corporate level liabilities other than accounts payable and customer advances, and we do not include these in segment operations. Financial Products Segment assets generally include all categories of assets.

- We value segment inventories and cost of sales using a current cost methodology.

- We amortize goodwill allocated to segments using a fixed amount based on a 20-year useful life. This methodology difference only impacts segment assets. We do not include goodwill amortization expense in segment profit. In addition, we have allocated to segments only a portion of goodwill for certain acquisitions made in 2011 or later.

- We generally manage currency exposures for ME&T at the corporate level and do not include in segment profit the effects of changes in exchange rates on results of operations within the year. We report the net difference created in the translation of revenues and costs between exchange rates used for U.S. GAAP reporting and exchange rates used for segment reporting as a methodology difference.

- We do not include stock-based compensation expense in segment profit.

- Postretirement benefit expenses are split; segments are generally responsible for service costs, with the remaining elements of net periodic benefit cost included as a methodology difference.

- We determine ME&T segment profit on a pretax basis and exclude interest expense and most other income/expense items. We determine Financial Products Segment profit on a pretax basis and include other income/expense items.

Reconciling items are created based on accounting differences between segment reporting and our consolidated external reporting. Please refer to pages 30 to 33 for financial information regarding significant reconciling items. Most of our reconciling items are self-explanatory given the above explanations. For the reconciliation of profit, we have grouped the reconciling items as follows:

- **Corporate costs:** These costs are related to corporate requirements primarily for compliance and legal functions for the benefit of the entire organization.

- **Restructuring costs:** May include costs for employee separation, long-lived asset impairments, contract terminations and divestiture impacts. These costs are included in Other operating (income) expenses except for defined-benefit plan curtailment losses and special termination benefits, which are included in Other income (expense). Restructuring costs also include other exit-related costs, which may consist of accelerated depreciation, inventory write-downs, building demolition, equipment relocation and project management costs and LIFO inventory decrement benefits from inventory liquidations at closed facilities, all of which are primarily included in Cost of goods sold. See Note 20 for more information.

- **Methodology differences:** See previous discussion of significant accounting differences between segment reporting and consolidated external reporting.

- **Timing:** Timing differences in the recognition of costs between segment reporting and consolidated external reporting. For example, we report certain costs on the cash basis for segment reporting and the accrual basis for consolidated external reporting.

For the three and six months ended June 30, 2023 and 2022, sales and revenues by geographic region reconciled to consolidated sales and revenues were as follows:

Sales and Revenues by Geographic Region (Millions of dollars)	North America	Latin America	EAME	Asia/ Pacific	External Sales and Revenues	Intersegment Sales and Revenues	Total Sales and Revenues
Three Months Ended June 30, 2023							
Construction Industries	$ 3,968	$ 566	$ 1,438	$ 1,149	$ 7,121	$ 33	$ 7,154
Resource Industries	1,342	538	517	1,076	3,473	90	3,563
Energy & Transportation	3,120	459	1,479	899	5,957	1,262	7,219
Financial Products Segment	593	102	118	110	923 [1]	—	923
Total sales and revenues from reportable segments	9,023	1,665	3,552	3,234	17,474	1,385	18,859
All Other operating segment	16	—	4	14	34	82	116
Corporate Items and Eliminations	(117)	(23)	(23)	(27)	(190)	(1,467)	(1,657)
Total Sales and Revenues	$ 8,922	$ 1,642	$ 3,533	$ 3,221	$ 17,318	$ —	$ 17,318
Three Months Ended June 30, 2022							
Construction Industries	$ 3,006	$ 635	$ 1,202	$ 1,148	$ 5,991	$ 42	$ 6,033
Resource Industries	1,027	466	489	913	2,895	66	2,961
Energy & Transportation	2,277	382	1,215	766	4,640	1,065	5,705
Financial Products Segment	505	87	97	109	798 [1]	—	798
Total sales and revenues from reportable segments	6,815	1,570	3,003	2,936	14,324	1,173	15,497
All Other operating segment	18	—	5	15	38	80	118
Corporate Items and Eliminations	(62)	(23)	(10)	(20)	(115)	(1,253)	(1,368)
Total Sales and Revenues	$ 6,771	$ 1,547	$ 2,998	$ 2,931	$ 14,247	$ —	$ 14,247

[1] Includes revenues from Construction Industries, Resource Industries, Energy & Transportation and All Other operating segment of $172 million and $108 million in the three months ended June 30, 2023 and 2022, respectively.

Sales and Revenues by Geographic Region

(Millions of dollars)	North America	Latin America	EAME	Asia/ Pacific	External Sales and Revenues	Intersegment Sales and Revenues	Total Sales and Revenues
Six Months Ended June 30, 2023							
Construction Industries	$ 7,576	$ 1,165	$ 2,774	$ 2,310	$ 13,825	$ 75	$ 13,900
Resource Industries	2,650	1,012	1,116	2,054	6,832	158	6,990
Energy & Transportation	5,692	839	2,863	1,618	11,012	2,461	13,473
Financial Products Segment	1,168	206	232	219	1,825 [1]	—	1,825
Total sales and revenues from reportable segments	17,086	3,222	6,985	6,201	33,494	2,694	36,188
All Other operating segment	34	—	8	27	69	158	227
Corporate Items and Eliminations	(248)	(41)	(42)	(52)	(383)	(2,852)	(3,235)
Total Sales and Revenues	$ 16,872	$ 3,181	$ 6,951	$ 6,176	$ 33,180	$ —	$ 33,180
Six Months Ended June 30, 2022							
Construction Industries	$ 5,726	$ 1,262	$ 2,479	$ 2,610	$ 12,077	$ 71	$ 12,148
Resource Industries	2,045	865	1,083	1,661	5,654	137	5,791
Energy & Transportation	4,215	692	2,399	1,366	8,672	2,071	10,743
Financial Products Segment	1,008	160	193	220	1,581 [1]	—	1,581
Total sales and revenues from reportable segments	12,994	2,979	6,154	5,857	27,984	2,279	30,263
All Other operating segment	36	—	10	31	77	159	236
Corporate Items and Eliminations	(122)	(39)	(21)	(43)	(225)	(2,438)	(2,663)
Total Sales and Revenues	$ 12,908	$ 2,940	$ 6,143	$ 5,845	$ 27,836	$ —	$ 27,836

[1] Includes revenues from Construction Industries, Resource Industries, Energy & Transportation and All Other operating segment of $334 million and $208 million in the six months ended June 30, 2023 and 2022, respectively.

For the three and six months ended June 30, 2023 and 2022, Energy & Transportation segment sales by end user application were as follows:

Energy & Transportation External Sales

(Millions of dollars)	Three Months Ended June 30		Six Months Ended June 30	
	2023	2022	2023	2022
Oil and gas	$ 1,760	$ 1,232	$ 3,074	$ 2,180
Power generation	1,645	1,186	2,929	2,198
Industrial	1,318	1,117	2,573	2,137
Transportation	1,234	1,105	2,436	2,157
Energy & Transportation External Sales	$ 5,957	$ 4,640	$ 11,012	$ 8,672

Reconciliation of Consolidated profit before taxes:

(Millions of dollars)	Three Months Ended June 30		Six Months Ended June 30	
	2023	2022	2023	2022
Profit from reportable segments:				
Construction Industries	$ 1,803	$ 989	$ 3,593	$ 2,046
Resource Industries	740	355	1,504	716
Energy & Transportation	1,269	659	2,326	1,197
Financial Products Segment	240	217	472	455
Total profit from reportable segments	4,052	2,220	7,895	4,414
Profit from All Other operating segment	10	31	21	34
Cost centers	13	28	43	38
Corporate costs	(211)	(304)	(449)	(502)
Timing	95	53	(111)	(45)
Restructuring costs	(31)	(28)	(642)	(41)
Methodology differences:				
Inventory/cost of sales	13	101	139	269
Postretirement benefit expense	(40)	130	(71)	211
Stock-based compensation expense	(74)	(67)	(118)	(107)
Financing costs	(52)	(94)	(102)	(194)
Currency	54	156	28	262
Other income/expense methodology differences	(158)	(97)	(304)	(178)
Other methodology differences	(19)	(33)	(43)	(66)
Total consolidated profit before taxes	$ 3,652	$ 2,096	$ 6,286	$ 4,095

Reconciliation of Assets:

(Millions of dollars)	June 30, 2023	December 31, 2022
Assets from reportable segments:		
Construction Industries	$ 5,619	$ 5,168
Resource Industries	5,648	5,775
Energy & Transportation	9,909	9,455
Financial Products Segment	35,445	34,269
Total assets from reportable segments	56,621	54,667
Assets from All Other operating segment	1,820	1,828
Items not included in segment assets:		
Cash and cash equivalents	6,323	6,042
Deferred income taxes	2,491	2,098
Goodwill and intangible assets	4,440	4,248
Property, plant and equipment – net and other assets	4,862	4,234
Inventory methodology differences	(3,311)	(3,063)
Liabilities included in segment assets	12,579	12,519
Other	(398)	(630)
Total assets	$ 85,427	$ 81,943

Reconciliation of Depreciation and amortization:
(Millions of dollars)

	Three Months Ended June 30		Six Months Ended June 30	
	2023	2022	2023	2022
Depreciation and amortization from reportable segments:				
Construction Industries	$ 54	$ 57	$ 108	$ 115
Resource Industries	82	91	169	183
Energy & Transportation	133	135	262	269
Financial Products Segment	181	185	359	373
Total depreciation and amortization from reportable segments	450	468	898	940
Items not included in segment depreciation and amortization:				
All Other operating segment	60	58	117	116
Cost centers	22	22	42	43
Other	10	5	17	11
Total depreciation and amortization	$ 542	$ 553	$ 1,074	$ 1,110

Reconciliation of Capital expenditures:
(Millions of dollars)

	Three Months Ended June 30		Six Months Ended June 30	
	2023	2022	2023	2022
Capital expenditures from reportable segments:				
Construction Industries	$ 51	$ 43	$ 83	$ 75
Resource Industries	44	42	70	64
Energy & Transportation	177	100	346	277
Financial Products Segment	410	334	689	575
Total capital expenditures from reportable segments	682	519	1,188	991
Items not included in segment capital expenditures:				
All Other operating segment	49	46	75	62
Cost centers	22	16	44	25
Timing	(27)	16	185	208
Other	(19)	(2)	(35)	(12)
Total capital expenditures	$ 707	$ 595	$ 1,457	$ 1,274

17. Cat Financial financing activities

Allowance for credit losses

Portfolio segments
A portfolio segment is the level at which Cat Financial develops a systematic methodology for determining its allowance for credit losses. Cat Financial's portfolio segments and related methods for estimating expected credit losses are as follows:

Customer
Cat Financial provides loans and finance leases to end-user customers primarily for the purpose of financing new and used Caterpillar machinery, engines and equipment for commercial use. Cat Financial also provides financing for power generation facilities that, in most cases, incorporate Caterpillar products. The average original term of Cat Financial's customer finance receivable portfolio was approximately 51 months with an average remaining term of approximately 27 months as of June 30, 2023.

Cat Financial typically maintains a security interest in financed equipment and requires physical damage insurance coverage on the financed equipment, both of which provide Cat Financial with certain rights and protections. If Cat Financial's collection efforts fail to bring a defaulted account current, Cat Financial generally can repossess the financed equipment, after satisfying local legal requirements, and sell it within the Caterpillar dealer network or through third-party auctions.

Cat Financial estimates the allowance for credit losses related to its customer finance receivables based on loss forecast models utilizing probabilities of default and the estimated loss given default based on past loss experience adjusted for current conditions and reasonable and supportable forecasts capturing country and industry-specific economic factors.

During the three and six months ended June 30, 2023, Cat Financial's forecasts reflected a continuation of the trend of relatively low unemployment rates and delinquencies within their portfolio. However, industry delinquencies show an increasing trend as persistently high inflation rates and consequent central bank actions are weakening global economic growth. The company believes the economic forecasts employed represent reasonable and supportable forecasts, followed by a reversion to long-term trends.

Dealer

Cat Financial provides financing to Caterpillar dealers in the form of wholesale financing plans. Cat Financial's wholesale financing plans provide assistance to dealers by financing their mostly new Caterpillar equipment inventory and rental fleets on a secured and unsecured basis. In addition, Cat Financial provides a variety of secured and unsecured loans to Caterpillar dealers.

Cat Financial estimates the allowance for credit losses for dealer finance receivables based on historical loss rates with consideration of current economic conditions and reasonable and supportable forecasts.

In general, Cat Financial's Dealer portfolio segment has not historically experienced large increases or decreases in credit losses based on changes in economic conditions due to its close working relationships with the dealers and their financial strength. Therefore, Cat Financial made no adjustments to historical loss rates during the three and six months ended June 30, 2023.

Classes of finance receivables

Cat Financial further evaluates portfolio segments by the class of finance receivables, which is defined as a level of information (below a portfolio segment) in which the finance receivables have the same initial measurement attribute and a similar method for assessing and monitoring credit risk. Cat Financial's classes, which align with management reporting for credit losses, are as follows:

- **North America** - Finance receivables originated in the United States and Canada.
- **EAME** - Finance receivables originated in Europe, Africa, the Middle East and Eurasia.
- **Asia/Pacific** - Finance receivables originated in Australia, New Zealand, China, Japan, Southeast Asia and India.
- **Mining** - Finance receivables related to large mining customers worldwide.
- **Latin America** - Finance receivables originated in Mexico and Central and South American countries.
- **Power** - Finance receivables originated worldwide related to Caterpillar electrical power generation, gas compression and co-generation systems and non-Caterpillar equipment that is powered by these systems.

Receivable balances, including accrued interest, are written off against the allowance for credit losses when, in the judgment of management, they are considered uncollectible (generally upon repossession of the collateral). The amount of the write-off is determined by comparing the fair value of the collateral, less cost to sell, to the amortized cost. Subsequent recoveries, if any, are credited to the allowance for credit losses when received.

An analysis of the allowance for credit losses was as follows:

(Millions of dollars)	Three Months Ended June 30, 2023			Three Months Ended June 30, 2022		
	Customer	Dealer	Total	Customer	Dealer	Total
Beginning balance	$ 278	$ 65	$ 343	$ 271	$ 81	$ 352
Write-offs	(21)	—	(21)	(18)	—	(18)
Recoveries	13	—	13	18	—	18
Provision for credit losses [1]	(6)	(15)	(21)	22	1	23
Other	1	—	1	(3)	—	(3)
Ending balance	$ 265	$ 50	$ 315	$ 290	$ 82	$ 372
	Six Months Ended June 30, 2023			**Six Months Ended June 30, 2022**		
	Customer	**Dealer**	**Total**	**Customer**	**Dealer**	**Total**
Beginning balance	$ 277	$ 65	$ 342	$ 251	$ 82	$ 333
Write-offs	(41)	—	(41)	(38)	—	(38)
Recoveries	23	—	23	30	—	30
Provision for credit losses [1]	4	(15)	(11)	48	—	48
Other	2	—	2	(1)	—	(1)
Ending balance	$ 265	$ 50	$ 315	$ 290	$ 82	$ 372
Finance Receivables	$ 19,814	$ 1,793	$ 21,607	$ 19,888	$ 1,764	$ 21,652

[1] Excludes provision for credit losses on unfunded commitments and other miscellaneous receivables.

Gross write-offs by origination year for the Customer portfolio segment were as follows:

(Millions of dollars)	Three Months Ended June 30, 2023							
	2023	2022	2021	2020	2019	Prior	Revolving Finance Receivables	Total
North America	$ —	$ 2	$ 2	$ 1	$ 1	$ 1	$ 3	$ 10
EAME	—	—	2	1	—	1	—	4
Asia/Pacific	—	1	1	2	—	—	—	4
Latin America	—	2	1	—	—	—	—	3
Total	$ —	$ 5	$ 6	$ 4	$ 1	$ 2	$ 3	$ 21
	Six Months Ended June 30, 2023							
	2023	2022	2021	2020	2019	Prior	Revolving Finance Receivables	Total
North America	$ —	$ 5	$ 5	$ 1	$ 1	$ 1	$ 7	$ 20
EAME	—	1	2	2	—	1	—	6
Asia/Pacific	—	1	3	3	1	—	—	8
Latin America	—	2	2	2	1	—	—	7
Total	$ —	$ 9	$ 12	$ 8	$ 3	$ 2	$ 7	$ 41

Credit quality of finance receivables

At origination, Cat Financial evaluates credit risk based on a variety of credit quality factors including prior payment experience, customer financial information, credit ratings, loan-to-value ratios, probabilities of default, industry trends, macroeconomic factors and other internal metrics. On an ongoing basis, Cat Financial monitors credit quality based on past-due status as there is a meaningful correlation between the past-due status of customers and the risk of loss. In determining past-due status, Cat Financial considers the entire finance receivable past due when any installment is over 30 days past due.

Customer

The tables below summarize the aging category of Cat Financial's amortized cost of finance receivables in the Customer portfolio segment by origination year:

(Millions of dollars)	June 30, 2023							
	2023	2022	2021	2020	2019	Prior	Revolving Finance Receivables	Total Finance Receivables
North America								
Current	$ 2,056	$ 3,251	$ 2,610	$ 1,104	$ 407	$ 109	$ 285	$ 9,822
31-60 days past due	13	31	24	15	10	2	3	98
61-90 days past due	3	13	10	6	2	1	1	36
91+ days past due	1	16	20	11	5	4	2	59
EAME								
Current	623	1,091	757	361	190	155	—	3,177
31-60 days past due	3	8	11	4	1	1	—	28
61-90 days past due	1	5	6	3	2	—	—	17
91+ days past due	—	16	18	11	3	1	—	49
Asia/Pacific								
Current	536	770	452	155	33	9	—	1,955
31-60 days past due	—	8	11	7	1	—	—	27
61-90 days past due	—	4	5	2	1	—	—	12
91+ days past due	1	4	5	4	1	—	—	15
Mining								
Current	646	749	439	169	112	69	38	2,222
31-60 days past due	—	42	32	—	—	—	—	74
61-90 days past due	—	—	—	—	—	—	—	—
91+ days past due	—	2	1	—	—	—	—	3
Latin America								
Current	389	658	305	99	38	13	—	1,502
31-60 days past due	2	16	7	3	4	—	—	32
61-90 days past due	—	5	3	4	1	—	—	13
91+ days past due	—	16	21	9	9	22	—	77
Power								
Current	30	71	73	89	31	145	154	593
31-60 days past due	—	—	—	—	—	—	—	—
61-90 days past due	—	—	—	—	—	—	—	—
91+ days past due	—	—	—	—	—	3	—	3
Totals by Aging Category								
Current	$ 4,280	$ 6,590	$ 4,636	$ 1,977	$ 811	$ 500	$ 477	$ 19,271
31-60 days past due	18	105	85	29	16	3	3	259
61-90 days past due	4	27	24	15	6	1	1	78
91+ days past due	2	54	65	35	18	30	2	206
Total Customer	$ 4,304	$ 6,776	$ 4,810	$ 2,056	$ 851	$ 534	$ 483	$ 19,814

(Millions of dollars)	December 31, 2022							
	2022	2021	2020	2019	2018	Prior	Revolving Finance Receivables	Total Finance Receivables
North America								
Current	$ 3,915	$ 3,276	$ 1,525	$ 653	$ 206	$ 34	$ 240	$ 9,849
31-60 days past due	25	26	18	12	4	1	4	90
61-90 days past due	9	15	7	3	1	—	3	38
91+ days past due	11	16	12	6	4	3	4	56
EAME								
Current	1,270	953	477	280	155	68	—	3,203
31-60 days past due	10	12	7	1	1	—	—	31
61-90 days past due	8	4	3	1	—	—	—	16
91+ days past due	6	25	16	4	1	1	—	53
Asia/Pacific								
Current	1,033	684	313	69	18	2	—	2,119
31-60 days past due	10	12	8	1	1	—	—	32
61-90 days past due	2	5	4	2	—	—	—	13
91+ days past due	2	6	6	4	—	—	—	18
Mining								
Current	863	575	220	171	93	108	80	2,110
31-60 days past due	—	1	—	—	—	—	—	1
61-90 days past due	—	—	—	—	—	—	—	—
91+ days past due	—	—	—	—	—	1	—	1
Latin America								
Current	770	400	150	69	26	20	—	1,435
31-60 days past due	7	8	4	2	—	1	—	22
61-90 days past due	2	5	1	1	—	—	—	9
91+ days past due	2	13	11	2	1	—	—	29
Power								
Current	78	85	142	33	18	161	125	642
31-60 days past due	—	—	—	—	—	—	—	—
61-90 days past due	—	—	—	—	—	—	—	—
91+ days past due	—	—	—	—	—	5	—	5
Totals by Aging Category								
Current	$ 7,929	$ 5,973	$ 2,827	$ 1,275	$ 516	$ 393	$ 445	$ 19,358
31-60 days past due	52	59	37	16	6	2	4	176
61-90 days past due	21	29	15	7	1	—	3	76
91+ days past due	21	60	45	16	6	10	4	162
Total Customer	$ 8,023	$ 6,121	$ 2,924	$ 1,314	$ 529	$ 405	$ 456	$ 19,772

Finance receivables in the Customer portfolio segment are substantially secured by collateral, primarily in the form of Caterpillar and other equipment. For those contracts where the borrower is experiencing financial difficulty, repayment of the outstanding amounts is generally expected to be provided through the operation or repossession and sale of the equipment.

Dealer

As of June 30, 2023 and December 31, 2022, Cat Financial's total amortized cost of finance receivables within the Dealer portfolio segment was current, with the exception of $43 million and $58 million, respectively, that were 91+ days past due in Latin America, all of which were originated in 2017.

Non-accrual finance receivables

Recognition of income is suspended and the finance receivable is placed on non-accrual status when management determines that collection of future income is not probable. Contracts on non-accrual status are generally more than 120 days past due. Recognition is resumed and previously suspended income is recognized when collection is considered probable. Payments received while the finance receivable is on non-accrual status are applied to interest and principal in accordance with the contractual terms. Interest earned but uncollected prior to the receivable being placed on non-accrual status is written off through Provision for credit losses when, in the judgment of management, it is considered uncollectible.

In Cat Financial's Customer portfolio segment, finance receivables which were on non-accrual status and finance receivables over 90 days past due and still accruing income were as follows:

(Millions of dollars)	June 30, 2023			December 31, 2022		
	Amortized Cost			Amortized Cost		
	Non-accrual With an Allowance	Non-accrual Without an Allowance	91+ Still Accruing	Non-accrual With an Allowance	Non-accrual Without an Allowance	91+ Still Accruing
North America	$ 54	$ —	$ 15	$ 52	$ 4	$ 11
EAME	44	—	7	43	—	10
Asia/Pacific	10	—	5	11	—	7
Mining	3	—	—	—	1	—
Latin America	85	—	—	45	—	—
Power	10	—	—	5	11	—
Total	$ 206	$ —	$ 27	$ 156	$ 16	$ 28

There were $43 million and $58 million, respectively, in finance receivables in Cat Financial's Dealer portfolio segment on non-accrual status as of June 30, 2023 and December 31, 2022, all of which was in Latin America.

Modifications

Cat Financial periodically modifies the terms of their finance receivable agreements in response to borrowers' financial difficulty. Typically, the types of modifications granted are payment deferrals, interest-only payment periods and/or term extensions. Many modifications Cat Financial grants are for commercial reasons or for borrowers experiencing some form of short-term financial stress and may result in insignificant payment delays. Cat Financial does not consider these borrowers to be experiencing financial difficulty. Modifications for borrowers Cat Financial does consider to be experiencing financial difficulty typically result in payment deferrals and/or reduced payments for a period of four months or longer, term extension of six months or longer or a combination of both.

During the three and six months ended June 30, 2023, there were no finance receivable modifications granted to borrowers experiencing financial difficulty in Cat Financial's Dealer portfolio segment. The amortized cost basis of finance receivables modified for borrowers experiencing financial difficulty in the Customer portfolio segment during the three and six months ended June 30, 2023, was $22 million and $30 million, respectively. Total modifications with borrowers experiencing financial difficulty represented 0.10 percent and 0.14 percent of Cat Financial's finance receivable portfolio for the same periods, respectively.

After Cat Financial modifies a finance receivable, they continue to track its performance under its most recent modified terms. As of June 30, 2023, all of the finance receivables modified with borrowers experiencing financial difficulty are current except for $1 million in EAME that was 31-60 days past due.

For the three and six months ended June 30, 2023, the financial effects of term extensions for borrowers experiencing financial difficulty added a weighted average of 18 and 21 months, respectively, to the terms of modified contracts. For the three and six months ended June 30, 2023, the financial effects of payment delays for borrowers experiencing financial difficulty resulted in weighted average payment deferrals and/or interest only payment periods of 7 and 8 months, respectively.

The effect of most modifications made to finance receivables for borrowers experiencing financial difficulty is already included in the allowance for credit losses based on the methodologies used to estimate the allowance; therefore, a change to the allowance for credit losses is generally not recorded upon modification. On rare occasions when principal forgiveness is provided, the amount forgiven is written off against the allowance for credit losses.

18. Fair value disclosures

A. Fair value measurements

The guidance on fair value measurements defines fair value as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants. This guidance also specifies a fair value hierarchy based upon the observability of inputs used in valuation techniques. Observable inputs (highest level) reflect market data obtained from independent sources, while unobservable inputs (lowest level) reflect internally developed market assumptions. In accordance with this guidance, fair value measurements are classified under the following hierarchy:

- **Level 1** – Quoted prices for identical instruments in active markets.

- **Level 2** – Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs or significant value-drivers are observable in active markets.

- **Level 3** – Model-derived valuations in which one or more significant inputs or significant value-drivers are unobservable.

When available, we use quoted market prices to determine fair value, and we classify such measurements within Level 1. In some cases where market prices are not available, we make use of observable market based inputs to calculate fair value, in which case the measurements are classified within Level 2. If quoted or observable market prices are not available, fair value is based upon valuations in which one or more significant inputs are unobservable, including internally developed models that use, where possible, current market-based parameters such as interest rates, yield curves and currency rates. These measurements are classified within Level 3.

We classify fair value measurements according to the lowest level input or value-driver that is significant to the valuation. We may therefore classify a measurement within Level 3 even though there may be significant inputs that are readily observable.

Fair value measurement includes the consideration of nonperformance risk. Nonperformance risk refers to the risk that an obligation (either by a counterparty or Caterpillar) will not be fulfilled. For financial assets traded in an active market (Level 1 and certain Level 2), the nonperformance risk is included in the market price. For certain other financial assets and liabilities (certain Level 2 and Level 3), our fair value calculations have been adjusted accordingly.

Investments in debt and equity securities

We have investments in certain debt and equity securities that are recorded at fair value. Fair values for our U.S. treasury bonds and large capitalization value and smaller company growth equity securities are based upon valuations for identical instruments in active markets. Fair values for other government debt securities, corporate debt securities and mortgage-backed debt securities are based upon models that take into consideration such market-based factors as recent sales, risk-free yield curves and prices of similarly rated bonds.

We also have investments in time deposits classified as held-to-maturity debt securities. The fair value of these investments is based upon valuations observed in less active markets than Level 1. These investments have a maturity of less than one year and are recorded at amortized costs, which approximate fair value.

In addition, Insurance Services has an equity investment in a real estate investment trust (REIT) which is recorded at fair value based on the net asset value (NAV) of the investment and is not classified within the fair value hierarchy.

See Note 8 for additional information on our investments in debt and equity securities.

Derivative financial instruments

The fair value of interest rate contracts is primarily based on a standard industry accepted valuation model that utilizes the appropriate market-based forward swap curves and zero-coupon interest rates to determine discounted cash flows. The fair value of foreign currency and commodity forward, option and cross currency contracts is based on standard industry accepted valuation models that discount cash flows resulting from the differential between the contract price and the market-based forward rate.

See Note 5 for additional information.

Assets and liabilities measured on a recurring basis at fair value included in our Consolidated Statement of Financial Position as of June 30, 2023 and December 31, 2022 were as follows:

	June 30, 2023				
(Millions of dollars)	**Level 1**	**Level 2**	**Level 3**	**Measured at NAV**	**Total Assets / Liabilities, at Fair Value**
Assets					
Debt securities					
Government debt securities					
U.S. treasury bonds	$ 10	$ —	$ —	$ —	$ 10
Other U.S. and non-U.S. government bonds	—	56	—	—	56
Corporate debt securities					
Corporate bonds and other debt securities	—	2,500	—	—	2,500
Asset-backed securities	—	186	—	—	186
Mortgage-backed debt securities					
U.S. governmental agency	—	359	—	—	359
Residential	—	2	—	—	2
Commercial	—	127	—	—	127
Total debt securities	10	3,230	—	—	3,240
Equity securities					
Large capitalization value	207	—	—	—	207
Smaller company growth	33	—	—	—	33
REIT	—	—	—	188	188
Total equity securities	240	—	—	188	428
Derivative financial instruments - assets					
Foreign currency contracts - net	—	281	—	—	281
Commodity contracts - net	—	1	—	—	1
Total assets	$ 250	$ 3,512	$ —	$ 188	$ 3,950
Liabilities					
Derivative financial instruments - liabilities					
Interest rate contracts - net	$ —	$ 213	$ —	$ —	$ 213
Total liabilities	$ —	$ 213	$ —	$ —	$ 213

(Millions of dollars)	December 31, 2022 Level 1	Level 2	Level 3	Measured at NAV	Total Assets / Liabilities, at Fair Value
Assets					
Debt securities					
Government debt securities					
U.S. treasury bonds	$ 9	$ —	$ —	$ —	$ 9
Other U.S. and non-U.S. government bonds	—	55	—	—	55
Corporate debt securities					
Corporate bonds and other debt securities	—	2,416	50	—	2,466
Asset-backed securities	—	182	—	—	182
Mortgage-backed debt securities					
U.S. governmental agency	—	333	—	—	333
Residential	—	2	—	—	2
Commercial	—	117	—	—	117
Total debt securities	9	3,105	50	—	3,164
Equity securities					
Large capitalization value	203	—	—	—	203
Smaller company growth	31	—	—	—	31
REIT	—	—	—	207	207
Total equity securities	234	—	—	207	441
Derivative financial instruments - assets					
Foreign currency contracts - net	—	328	—	—	328
Commodity contracts - net	—	15	—	—	15
Total Assets	$ 243	$ 3,448	$ 50	$ 207	$ 3,948
Liabilities					
Derivative financial instruments - liabilities					
Interest rate contracts - net	$ —	$ 195	$ —	$ —	$ 195
Total liabilities	$ —	$ 195	$ —	$ —	$ 195

In addition to the amounts above, certain Cat Financial loans are subject to measurement at fair value on a nonrecurring basis and are classified as Level 3 measurements. A loan is measured at fair value when management determines that collection of contractual amounts due is not probable and the loan is individually evaluated. In these cases, an allowance for credit losses may be established based either on the present value of expected future cash flows discounted at the receivables' effective interest rate, the fair value of the collateral for collateral-dependent receivables, or the observable market price of the receivable. In determining collateral value, Cat Financial estimates the current fair market value of the collateral less selling costs. Cat Financial had loans carried at fair value of $58 million and $68 million as of June 30, 2023 and December 31, 2022, respectively.

B. Fair values of financial instruments

In addition to the methods and assumptions we use to record the fair value of financial instruments as discussed in the Fair value measurements section above, we use the following methods and assumptions to estimate the fair value of our financial instruments:

Cash and cash equivalents
Carrying amount approximates fair value. We classify cash and cash equivalents as Level 1. See Consolidated Statement of Financial Position.

Restricted cash and short-term investments
Carrying amount approximates fair value. We include restricted cash and short-term investments in Prepaid expenses and other current assets in the Consolidated Statement of Financial Position. We classify these instruments as Level 1 except for time deposits which are Level 2, and certain corporate debt securities which are Level 3. See Note 8 for additional information.

Finance receivables
We estimate fair value by discounting the future cash flows using current rates, representative of receivables with similar remaining maturities.

Wholesale inventory receivables
We estimate fair value by discounting the future cash flows using current rates, representative of receivables with similar remaining maturities.

Short-term borrowings
Carrying amount approximates fair value. We classify short-term borrowings as Level 1. See Consolidated Statement of Financial Position.

Long-term debt
We estimate fair value for fixed and floating rate debt based on quoted market prices.

Guarantees
The fair value of guarantees is based upon our estimate of the premium a market participant would require to issue the same guarantee in a stand-alone arms-length transaction with an unrelated party. If quoted or observable market prices are not available, fair value is based upon internally developed models that utilize current market-based assumptions. We classify guarantees as Level 3. See Note 11 for additional information.

Our financial instruments not carried at fair value were as follows:

	June 30, 2023		December 31, 2022			
(Millions of dollars)	**Carrying Amount**	**Fair Value**	**Carrying Amount**	**Fair Value**	**Fair Value Levels**	**Reference**
Assets						
Finance receivables – net (excluding finance leases [1])	$ 14,411	$ 13,784	$ 13,965	$ 13,377	3	Note 17
Wholesale inventory receivables – net (excluding finance leases [1])	1,063	1,008	827	778	3	
Liabilities						
Long-term debt (including amounts due within one year)						
Machinery, Energy & Transportation	9,578	9,368	9,618	9,240	2	
Financial Products	22,573	21,963	21,418	20,686	2	

[1] Represents finance leases and failed sale leasebacks of $7,117 million and $7,325 million at June 30, 2023 and December 31, 2022, respectively.

19. Other income (expense)

(Millions of dollars)	Three Months Ended June 30		Six Months Ended June 30	
	2023	2022	2023	2022
Investment and interest income	$ 96	$ 25	$ 189	$ 46
Foreign exchange gains (losses) [1]	40	224	(32)	271
License fee income	43	37	74	69
Net periodic pension and OPEB income (cost), excluding service cost	(12)	66	(25)	134
Gains (losses) on securities	(10)	(47)	(21)	(59)
Miscellaneous income (loss)	(30)	(45)	(26)	52
Total	$ 127	$ 260	$ 159	$ 513

[1] Includes gains (losses) from foreign exchange derivative contracts. See Note 5 for further details.

20. Restructuring costs

Our accounting for employee separations is dependent upon how the particular program is designed. For voluntary programs, we recognize eligible separation costs at the time of employee acceptance unless the acceptance requires explicit approval by the company. For involuntary programs, we recognize eligible costs when management has approved the program, the affected employees have been properly notified and the costs are estimable.

Restructuring costs for the three and six months ended June 30, 2023 and 2022 were as follows:

(Millions of dollars)	Three Months Ended June 30		Six Months Ended June 30	
	2023	2022	2023	2022
Employee separations [1]	$ 10	$ 18	$ 22	$ 23
Longwall divestiture [1]	—	—	586	—
Long-lived asset impairments [1]	2	5	2	5
Other [2]	19	5	32	13
Total restructuring costs	$ 31	$ 28	$ 642	$ 41

[1] Recognized in Other operating (income) expenses.

[2] Represents costs related to our restructuring programs, primarily for accelerated depreciation, inventory write-downs, project management and equipment relocation, all of which are primarily included in Cost of goods sold.

The restructuring costs for the six months ended June 30, 2023 were primarily related to the divestiture of the company's Longwall business within Resource Industries. The divestiture closed on February 1, 2023 and resulted in a pre-tax loss of approximately $586 million, primarily a non-cash item driven by the release of $494 million of accumulated foreign currency translation. The transaction is subject to certain post-closing adjustments. For the six months ended June 30, 2022, the restructuring costs were primarily related to actions across the company including strategic actions to address a small number of products.

In 2023 and 2022, all restructuring costs are excluded from segment profit.

The following table summarizes the 2023 and 2022 employee separation activity:

(Millions of dollars)	Six Months Ended June 30	
	2023	2022
Liability balance, beginning of period	$ 39	$ 61
Increase in liability (separation charges)	22	23
Reduction in liability (payments)	(44)	(50)
Liability balance, end of period	$ 17	$ 34

Most of the liability balance at June 30, 2023 is expected to be paid in 2023 and 2024.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A) is intended to provide information that will assist the reader in understanding the company's Consolidated Financial Statements, the changes in certain key items in those financial statements between select periods and the primary factors that accounted for those changes. In addition, we discuss how certain accounting principles, policies and critical estimates affect our Consolidated Financial Statements. Our discussion also contains certain forward-looking statements related to future events and expectations as well as a discussion of the many factors that we believe may have an impact on our business on an ongoing basis. This MD&A should be read in conjunction with our discussion of cautionary statements and significant risks to the company's business under Part I, Item 1A. Risk Factors of the 2022 Form 10-K.

Highlights for the second quarter of 2023 include:

- Total sales and revenues for the second quarter of 2023 were $17.318 billion, an increase of $3.071 billion, or 22 percent, compared with $14.247 billion in the second quarter of 2022. Sales were higher across the three primary segments.
- Operating profit margin was 21.1 percent for the second quarter of 2023, compared with 13.6 percent for the second quarter of 2022. ***Adjusted operating profit margin*** was 21.3 percent for the second quarter of 2023, compared with 13.8 percent for the second quarter of 2022.
- Second-quarter 2023 profit per share was $5.67, and excluding the items in the table below, ***adjusted profit per share*** was $5.55. Second-quarter 2022 profit per share was $3.13, and excluding the items in the table below, adjusted profit per share was $3.18.
- Caterpillar ended the second quarter of 2023 with $7.4 billion of enterprise cash.

Highlights for the six months ended June 30, 2023 include:

- Total sales and revenues were $33.180 billion for the six months ended June 30, 2023, an increase of $5.344 billion, or 19 percent, compared with $27.836 billion for the six months ended June 30, 2022.
- Operating profit margin was 19.2 percent for the six months ended June 30, 2023, compared with 13.6 percent for the six months ended June 30, 2022. Adjusted operating profit margin was 21.2 percent for the six months ended June 30, 2023, compared with 13.8 percent for the six months ended June 30, 2022.
- Profit per share for the six months ended June 30, 2023, was $9.41, and excluding the items in the table below, adjusted profit per share was $10.46. Profit per share for the six months ended June 30, 2022, was $5.99, and excluding the items in the table below, adjusted profit per share was $6.06.
- Enterprise operating cash flow was $4.8 billion for the six months ended June 30, 2023.
- In order for our results to be more meaningful to our readers, we have separately quantified the impact of several significant items. A detailed reconciliation of GAAP to non-GAAP financial measures is included on page 66.

	Three Months Ended June 30, 2023		Three Months Ended June 30, 2022		Six Months Ended June 30, 2023		Six Months Ended June 30, 2022	
(Dollars in millions except per share data)	Profit Before Taxes	Profit Per Share	Profit Before Taxes	Profit Per Share	Profit Before Taxes	Profit Per Share	Profit Before Taxes	Profit Per Share
Profit	**$ 3,652**	**$ 5.67**	**$ 2,096**	**$ 3.13**	**$ 6,286**	**$ 9.41**	**$ 4,095**	**$ 5.99**
Restructuring costs - Longwall divestiture	—	—	—	—	586	1.13	—	—
Other restructuring costs	31	0.05	28	0.05	56	0.09	41	0.07
Deferred tax valuation allowance adjustments	—	(0.17)	—	—	—	(0.17)	—	—
Adjusted profit	$ 3,683	$ 5.55	$ 2,124	$ 3.18	$ 6,928	$ 10.46	$ 4,136	$ 6.06

Overview

Total sales and revenues for the second quarter of 2023 were $17.318 billion, an increase of $3.071 billion, or 22 percent, compared with $14.247 billion in the second quarter of 2022. The increase was due to higher ***sales volume*** and favorable ***price realization.*** The increase in sales volume was driven by higher sales of equipment to end users and the impact from changes in ***dealer inventories***. Dealer inventory increased during the second quarter of 2023 (primarily ***Energy & Transportation***), compared with a decrease during the second quarter of 2022 (primarily ***Construction Industries***). Sales were higher across the three primary segments.

Second-quarter 2023 profit per share was $5.67, compared with $3.13 profit per share in the second quarter of 2022. Second-quarter 2023 and 2022 profit per share included restructuring costs. Second-quarter 2023 profit per share also included a discrete tax benefit to adjust deferred tax balances. Profit for the second quarter of 2023 was $2.922 billion, an increase of $1.249 billion, or 75 percent compared with $1.673 billion for the second quarter of 2022. The increase was primarily due to favorable price realization and higher sales volume, partially offset by higher ***manufacturing costs*** and higher selling, general and administrative (SG&A) and research and development (R&D) expenses.

Trends and Economic Conditions

Outlook for Key End Markets

In Construction Industries, we continue to see positive momentum in 2023 for North America. We expect continued growth in non-residential construction in North America due to the positive impact of government-related infrastructure investments and a healthy pipeline of construction projects. Although residential construction growth has moderated, we expect the rest of 2023 to remain healthy. In Asia Pacific, excluding China, we expect growth due to public infrastructure spending and supportive commodity prices. We expect continued weakness in China in the excavator industry above 10-tons, which we anticipate to remain below 2022 levels due to low construction activity. In ***EAME***, we anticipate business activity will be flat to slightly up overall versus 2022, with the Middle East exhibiting strong construction demand, whereas Europe demand is expected to be down. Construction activity in ***Latin America*** is expected to be down versus a strong 2022 performance.

In ***Resource Industries***, we expect healthy mining demand to continue as commodity prices remain above investment thresholds; however, customers continue to remain capital disciplined. We anticipate production and utilization levels will remain elevated. We expect the age of the fleet and low level of parked trucks to support future demand for our equipment and ***services***. The energy transition is expected to support increased commodity demand, expanding our total addressable market and providing opportunities for long-term profitable growth. In heavy construction and quarry and aggregates, we anticipate continued growth supported by infrastructure and major non-residential construction projects.

In Energy & Transportation, in Oil & Gas reciprocating engines, although customers remain disciplined, we are encouraged by continued strength in demand for gas compression. Power Generation reciprocating engine demand is expected to remain healthy, including data center strength. New equipment orders and services for turbines and turbine-related services in both Oil & Gas and Power Generation are robust. Industrial remains healthy. In Transportation, we anticipate strength in high-speed marine as customers continue to upgrade aging fleets.

Company Trends and Expectations

For the full-year 2023, we expect a strong top line supported by price realization and higher sales of equipment to end users. We expect dealer inventory to be slightly higher at year-end 2023 versus year-end 2022. The environment remains positive with an improving supply chain, a strong backlog and healthy demand across most end markets.

In the second half of 2023, we expect higher sales and revenues compared to the second half of 2022 supported by strong sales of equipment to end users and favorable price realization, partially offset by the impact of changes in dealer inventories. We expect dealer inventory to decrease in the second half of 2023, compared to an increase in the second half of 2022. We expect sales in the third quarter of 2023 to be higher than the third quarter of 2022, but lower compared to the second quarter of 2023, following a typical sequential decline.

We expect operating profit to increase in 2023, compared to 2022. We expect price realization to continue to be favorable in 2023. Throughout 2023, we expect to see moderation of price realization and manufacturing costs. We anticipate the year-over-year benefit of price realization in the second half of 2023 to moderate compared to the benefit we saw in the first half of 2023 as we lap prior price year increases. Increases in SG&A/R&D expenses are expected throughout 2023 as we continue to invest in strategic initiatives such as services growth and technology, including digital, electrification and autonomy. We continue to anticipate higher pension expense within other income (expense) in 2023, compared to 2022, due to higher interest costs from higher interest rates. The change is estimated to be just over $300 million for the full year as compared to 2022, or about $80 million per quarter.

Global Business Conditions

We continue to monitor a variety of external factors around the world, such as supply chain disruptions, inflationary cost and labor pressures. Areas of particular focus include certain components, transportation and raw materials. Contingency plans have been developed and continue to be modified to minimize supply chain challenges that may impact our ability to meet increasing customer demand. We continue to assess the environment to determine if additional actions need to be taken.

Risk Factors

Risk factors are disclosed within Item 1A. Risk Factors of the 2022 Form 10-K.

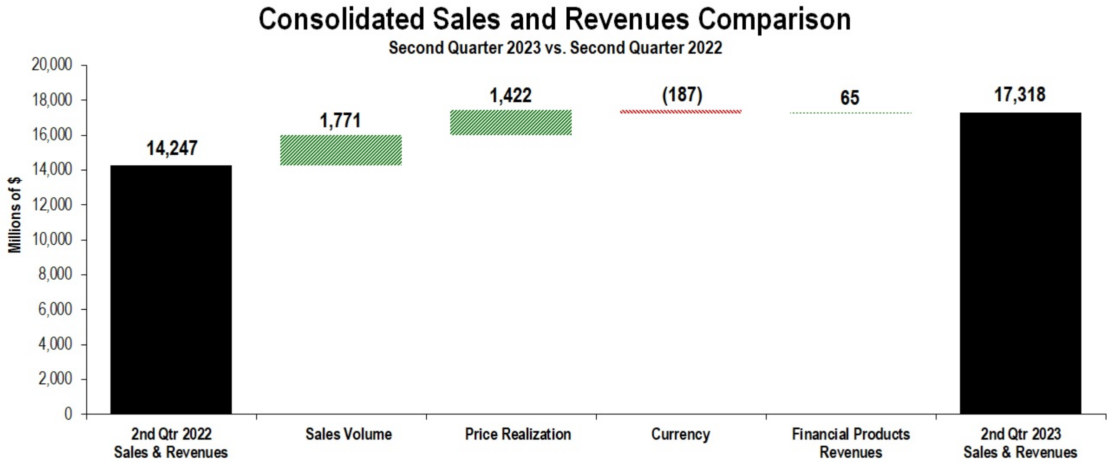
Notes:

- Glossary of terms is included on pages 60 - 62; first occurrence of terms shown in bold italics.
- Information on non-GAAP financial measures is included on page 66.
- Certain amounts may not add due to rounding.

Consolidated Results of Operations

THREE MONTHS ENDED JUNE 30, 2023 COMPARED WITH THREE MONTHS ENDED JUNE 30, 2022

CONSOLIDATED SALES AND REVENUES



The chart above graphically illustrates reasons for the change in consolidated sales and revenues between the second quarter of 2022 (at left) and the second quarter of 2023 (at right). Caterpillar management utilizes these charts internally to visually communicate with the company's board of directors and employees.

Total sales and revenues for the second quarter of 2023 were $17.318 billion, an increase of $3.071 billion, or 22 percent, compared with $14.247 billion in the second quarter of 2022. The increase was due to higher sales volume and favorable price realization. The increase in sales volume was driven by higher sales of equipment to end users and the impact from changes in dealer inventories. Dealer inventory increased during the second quarter of 2023 (primarily Energy & Transportation), compared with a decrease during the second quarter of 2022 (primarily Construction Industries).

Sales were higher across the three primary segments.

North America sales increased 33 percent due to higher sales of equipment to end users and favorable price realization.

Sales increased 5 percent in Latin America due to favorable price realization and higher sales of equipment to end users, partially offset by lower services sales volume and the impact from changes in dealer inventories. Dealer inventory decreased more during the second quarter of 2023 than during the second quarter of 2022.

EAME sales increased 18 percent due to favorable price realization and the impact from changes in dealer inventories. Dealer inventory increased during the second quarter of 2023, compared with a decrease during the second quarter of 2022.

Asia/Pacific sales increased 10 percent driven by favorable price realization, the impact from changes in dealer inventories and higher sales of equipment to end users, partially offset by unfavorable ***currency*** impacts, related to the Australian dollar and Japanese yen. Dealer inventory decreased during the second quarter of 2022, compared with an increase during the second quarter of 2023.

Dealer inventory increased by $600 million during the second quarter of 2023, compared with a decrease of $400 million during the second quarter of 2022. Dealers are independent, and the reasons for changes in their inventory levels vary, including their expectations of future demand and product delivery times. Dealers' demand expectations take into account seasonal changes, macroeconomic conditions, machine rentals and other factors. Delivery times can vary based on availability of product from Caterpillar factories and product distribution centers. We expect dealer inventory to be slightly higher at year-end 2023 versus year-end 2022.

Sales and Revenues by Segment

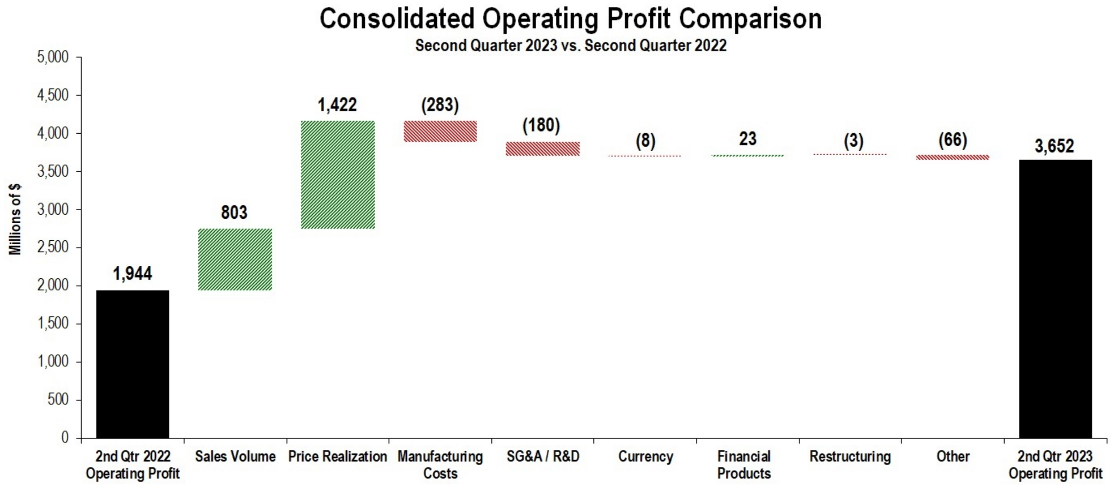
(Millions of dollars)	Second Quarter 2022	Sales Volume	Price Realization	Currency	Inter-Segment / Other	Second Quarter 2023	$ Change	% Change
Construction Industries	$ 6,033	$ 606	$ 629	$ (105)	$ (9)	$ 7,154	$ 1,121	19 %
Resource Industries	2,961	250	375	(47)	24	3,563	602	20 %
Energy & Transportation	5,705	932	417	(32)	197	7,219	1,514	27 %
All Other Segment	118	(4)	—	(1)	3	116	(2)	(2 %)
Corporate Items and Eliminations	(1,278)	(13)	1	(2)	(215)	(1,507)	(229)	
***Machinery, Energy & Transportation* Sales**	13,539	1,771	1,422	(187)	—	16,545	3,006	22 %
Financial Products Segment	798	—	—	—	125	923	125	16 %
Corporate Items and Eliminations	(90)	—	—	—	(60)	(150)	(60)	
***Financial Products* Revenues**	708	—	—	—	65	773	65	9 %
Consolidated Sales and Revenues	$ 14,247	$ 1,771	$ 1,422	$ (187)	$ 65	$ 17,318	$ 3,071	22 %

Sales and Revenues by Geographic Region

	North America		Latin America		EAME		Asia/Pacific		External Sales and Revenues		Inter-Segment		Total Sales and Revenues	
(Millions of dollars)	**$**	**% Chg**	**$**	**% Chg**	**$**	**% Chg**	**$**	**% Chg**	**$**	**% Chg**	**$**	**% Chg**	**$**	**% Chg**
Second Quarter 2023														
Construction Industries	$ 3,968	32 %	$ 566	(11 %)	$ 1,438	20 %	$ 1,149	— %	$ 7,121	19 %	$ 33	(21 %)	$ 7,154	19 %
Resource Industries	1,342	31 %	538	15 %	517	6 %	1,076	18 %	3,473	20 %	90	36 %	3,563	20 %
Energy & Transportation	3,120	37 %	459	20 %	1,479	22 %	899	17 %	5,957	28 %	1,262	18 %	7,219	27 %
All Other Segment	16	(11 %)	—	— %	4	(20 %)	14	(7 %)	34	(11 %)	82	3 %	116	(2 %)
Corporate Items and Eliminations	(32)		(2)		(2)		(4)		(40)		(1,467)		(1,507)	
Machinery, Energy & Transportation Sales	8,414	33 %	1,561	5 %	3,436	18 %	3,134	10 %	16,545	22 %	—	— %	16,545	22 %
Financial Products Segment	593	17 %	102	17 %	118	22 %	110	1 %	923 [1]	16 %	—	— %	923	16 %
Corporate Items and Eliminations	(85)		(21)		(21)		(23)		(150)		—		(150)	
Financial Products Revenues	508	10 %	81	23 %	97	11 %	87	(5 %)	773	9 %	—	— %	773	9 %
Consolidated Sales and Revenues	$ 8,922	32 %	$ 1,642	6 %	$ 3,533	18 %	$ 3,221	10 %	$ 17,318	22 %	$ —	— %	$ 17,318	22 %
Second Quarter 2022														
Construction Industries	$ 3,006		$ 635		$ 1,202		$ 1,148		$ 5,991		$ 42		$ 6,033	
Resource Industries	1,027		466		489		913		2,895		66		2,961	
Energy & Transportation	2,277		382		1,215		766		4,640		1,065		5,705	
All Other Segment	18		—		5		15		38		80		118	
Corporate Items and Eliminations	(20)		(2)		—		(3)		(25)		(1,253)		(1,278)	
Machinery, Energy & Transportation Sales	6,308		1,481		2,911		2,839		13,539		—		13,539	
Financial Products Segment	505		87		97		109		798 [1]		—		798	
Corporate Items and Eliminations	(42)		(21)		(10)		(17)		(90)		—		(90)	
Financial Products Revenues	463		66		87		92		708		—		708	
Consolidated Sales and Revenues	$ 6,771		$ 1,547		$ 2,998		$ 2,931		$ 14,247		$ —		$ 14,247	

[1] Includes revenues from Machinery, Energy & Transportation of $172 million and $108 million in the second quarter of 2023 and 2022, respectively.

CONSOLIDATED OPERATING PROFIT



The chart above graphically illustrates reasons for the change in consolidated operating profit between the second quarter of 2022 (at left) and the second quarter of 2023 (at right). Caterpillar management utilizes these charts internally to visually communicate with the company's board of directors and employees. The bar titled Other includes ***consolidating adjustments*** and ***Machinery, Energy & Transportation's other operating (income) expenses***.

Operating profit for the second quarter of 2023 was $3.652 billion, an increase of $1.708 billion, or 88 percent, compared with $1.944 billion in the second quarter of 2022. The increase was primarily due to favorable price realization and higher sales volume, partially offset by higher manufacturing costs and higher SG&A/R&D expenses. Unfavorable manufacturing costs largely reflected higher material costs. The increase in SG&A/R&D expenses was primarily driven by investments aligned with strategic initiatives and an unfavorable change in fair value adjustments related to deferred compensation plans.

Operating profit margin was 21.1 percent for the second quarter of 2023, compared with 13.6 percent for the second quarter of 2022.

Profit (Loss) by Segment

(Millions of dollars)	**Second Quarter 2023**	**Second Quarter 2022**	**$ Change**	**% Change**
Construction Industries	$ 1,803	$ 989	$ 814	82 %
Resource Industries	740	355	385	108 %
Energy & Transportation	1,269	659	610	93 %
All Other Segment	10	31	(21)	(68 %)
Corporate Items and Eliminations	(272)	(230)	(42)	
Machinery, Energy & Transportation	3,550	1,804	1,746	97 %
Financial Products Segment	240	217	23	11 %
Corporate Items and Eliminations	17	17	—	
Financial Products	257	234	23	10 %
Consolidating Adjustments	(155)	(94)	(61)	
Consolidated Operating Profit	$ 3,652	$ 1,944	$ 1,708	88 %

Other Profit/Loss and Tax Items

- Interest expense excluding Financial Products in the second quarter of 2023 was $127 million, compared with $108 million in the second quarter of 2022. The increase was due to higher average borrowing rates.
- Other income (expense) in the second quarter of 2023 was income of $127 million, compared with income of $260 million in the second quarter of 2022. The change was primarily driven by unfavorable impacts from foreign currency exchange and ***pension and other postemployment benefit (OPEB)*** plan costs, partially offset by higher investment and interest income and lower unrealized losses on marketable securities.
- The provision for income taxes for the second quarter of 2023 reflected an estimated annual tax rate of 23 percent, compared with 23.5 percent for the second quarter of 2022, excluding the discrete items discussed below. The comparative tax rate for full-year 2022 was 23.2 percent.

  In the second quarter of 2023, the company recorded a discrete tax benefit of $88 million due to a change in the valuation allowance for certain deferred tax assets compared to a benefit of $55 million in the second quarter of 2022 primarily for a prior year tax adjustment due to a change in estimate. In the second quarter of 2022, the company also recorded a $10 million benefit due to the change from the first-quarter estimated annual tax rate.

Construction Industries

Construction Industries' total sales were $7.154 billion in the second quarter of 2023, an increase of $1.121 billion, or 19 percent, compared with $6.033 billion in the second quarter of 2022. The increase was due to favorable price realization and higher sales volume. The increase in sales volume was driven by the impact from changes in dealer inventories and higher sales of equipment to end users. Dealer inventory decreased during the second quarter of 2022, compared with a modest increase during the second quarter of 2023.

- In North America, sales increased due to higher sales volume and favorable price realization. Higher sales volume was driven by higher sales of equipment to end users and the impact from changes in dealer inventories. Dealer inventory decreased during the second quarter of 2022, compared with an increase during the second quarter of 2023.
- Sales decreased in Latin America primarily due to lower sales volume, partially offset by favorable price realization. Lower sales volume was driven by the impact from changes in dealer inventories and lower sales of equipment to end users. Dealer inventory decreased more during the second quarter of 2023 than during the second quarter of 2022.
- In EAME, sales increased primarily due to higher sales volume and favorable price realization. Higher sales volume was primarily due to the impact from changes in dealer inventories, partially offset by lower sales of equipment to end users. Dealer inventory decreased during the second quarter of 2022, compared with an increase during the second quarter of 2023.
- Sales were about flat in Asia/Pacific.

Construction Industries' profit was $1.803 billion in the second quarter of 2023, an increase of $814 million, or 82 percent, compared with $989 million in the second quarter of 2022. The increase was mainly due to favorable price realization and higher sales volume.

Construction Industries' profit as a percent of total sales was 25.2 percent in the second quarter of 2023, compared with 16.4 percent in the second quarter of 2022.

Resource Industries

Resource Industries' total sales were $3.563 billion in the second quarter of 2023, an increase of $602 million, or 20 percent, compared with $2.961 billion in the second quarter of 2022. The increase was primarily due to favorable price realization and higher sales volume. The increase in sales volume was due to higher sales of equipment to end users, partially offset by lower aftermarket parts sales volume.

Resource Industries' profit was $740 million in the second quarter of 2023, an increase of $385 million, or 108 percent, compared with $355 million in the second quarter of 2022. The increase was mainly due to favorable price realization and higher sales volume, partially offset by unfavorable manufacturing costs. Unfavorable manufacturing costs largely reflected higher material costs.

Resource Industries' profit as a percent of total sales was 20.8 percent in the second quarter of 2023, compared with 12.0 percent in the second quarter of 2022.

Energy & Transportation

Sales by Application (Millions of dollars)		Second Quarter 2023		Second Quarter 2022		$ Change	% Change
Oil and Gas	$	1,760	$	1,232	$	528	43 %
Power Generation		1,645		1,186		459	39 %
Industrial		1,318		1,117		201	18 %
Transportation		1,234		1,105		129	12 %
External Sales		5,957		4,640		1,317	28 %
Inter-segment		1,262		1,065		197	18 %
Total Sales	$	7,219	$	5,705	$	1,514	27 %

Energy & Transportation’s total sales were $7.219 billion in the second quarter of 2023, an increase of $1.514 billion, or 27 percent, compared with $5.705 billion in the second quarter of 2022. Sales increased across all applications and inter-segment sales. The increase in sales was primarily due to higher sales volume and favorable price realization.

- Oil and Gas – Sales increased for turbines and turbine-related services. Sales also increased in reciprocating engines used in gas compression and well servicing applications.
- Power Generation – Sales increased in large reciprocating engines, primarily data center applications, and small reciprocating engines. Turbines and turbine-related services increased as well.
- Industrial – Sales were up across all regions.
- Transportation – Sales increased in marine and rail services.

Energy & Transportation’s profit was $1.269 billion in the second quarter of 2023, an increase of $610 million, or 93 percent, compared with $659 million in the second quarter of 2022. The increase was mainly due to higher sales volume and favorable price realization, partially offset by unfavorable manufacturing costs and higher SG&A/R&D expenses. Unfavorable manufacturing costs were driven by higher material costs and increased period manufacturing costs. The increase in SG&A/R&D expenses was primarily driven by investments aligned with strategic initiatives.

Energy & Transportation’s profit as a percent of total sales was 17.6 percent in the second quarter of 2023, compared with 11.6 percent in the second quarter of 2022.

Financial Products Segment

Financial Products’ segment revenues were $923 million in the second quarter of 2023, an increase of $125 million, or 16 percent, compared with $798 million in the second quarter of 2022. The increase was primarily due to higher average financing rates across all regions.

Financial Products’ segment profit was $240 million in the second quarter of 2023, an increase of $23 million, or 11 percent, compared with $217 million in the second quarter of 2022. The increase was mainly due to lower provision for credit losses at Cat Financial, partially offset by an increase in SG&A expenses.

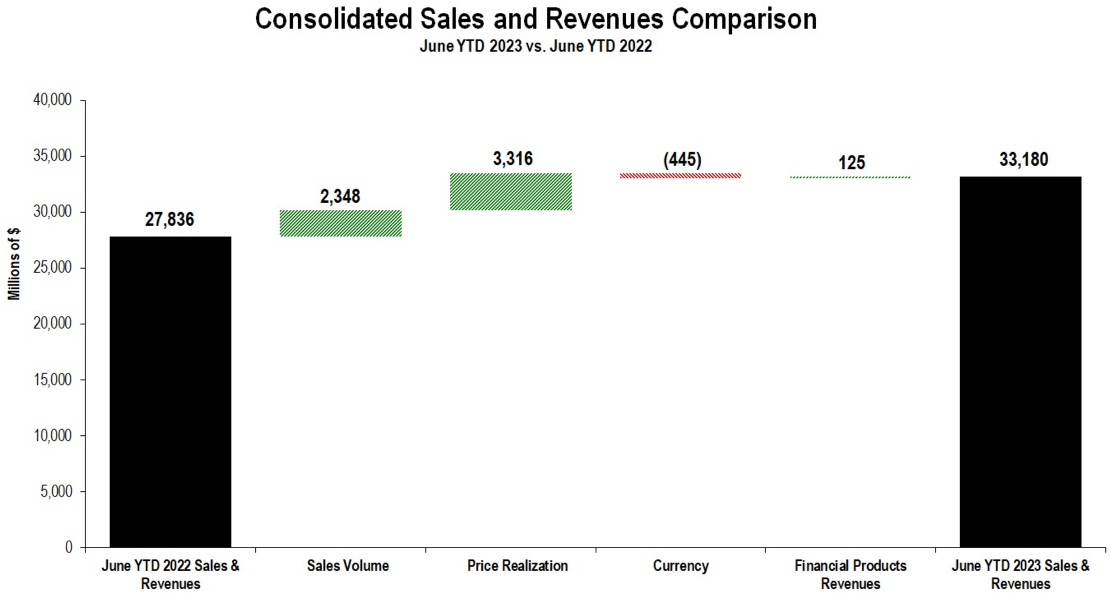
At the end of the second quarter of 2023, past dues at Cat Financial were 2.15 percent, compared with 2.19 percent at the end of the second quarter of 2022. Write-offs, net of recoveries, were $8 million for the second quarter of 2023, compared with less than $1 million for the second quarter of 2022. As of June 30, 2023, Cat Financial's allowance for credit losses totaled $320 million, or 1.15 percent of finance receivables, compared with $348 million, or 1.27 percent of finance receivables at March 31, 2023. The allowance for credit losses at year-end 2022 was $346 million, or 1.29 percent of finance receivables.

Corporate Items and Eliminations

Expense for corporate items and eliminations was $255 million in the second quarter of 2023, an increase of $42 million from the second quarter of 2022. Lower corporate costs and decreased expenses due to timing differences were more than offset by an unfavorable change in fair value adjustments related to deferred compensation plans and unfavorable impacts of segment reporting methodology differences.

SIX MONTHS ENDED JUNE 30, 2023 COMPARED WITH SIX MONTHS ENDED JUNE 30, 2022

CONSOLIDATED SALES AND REVENUES



The chart above graphically illustrates reasons for the change in consolidated sales and revenues between the six months ended June 30, 2022 (at left) and the six months ended June 30, 2023 (at right). Caterpillar management utilizes these charts internally to visually communicate with the company's board of directors and employees.

Total sales and revenues were $33.180 billion for the six months ended June 30, 2023, an increase of $5.344 billion, or 19 percent, compared with $27.836 billion for the six months ended June 30, 2022. The increase was primarily due to favorable price realization and higher sales volume. The increase in sales volume was driven by higher sales of equipment to end users and the impact from changes in dealer inventories, partially offset by lower services sales volume. Dealer inventory increased more during the six months ended June 30, 2023, than the during the six months ended June 30, 2022.

Sales were higher in the three primary segments.

North America sales increased 33 percent driven by favorable price realization, higher sales of equipment to end users and the impact from changes in dealer inventories. Dealer inventory increased more during the six months ended June 30, 2023, than during the six months ended June 30, 2022.

Sales increased 7 percent in Latin America due to favorable price realization and higher sales of equipment to end users, partially offset by lower services sales volume and the impact from changes in dealer inventories. Dealer inventory increased during the six months ended June 30, 2022, compared with a decrease during the six months ended June 30, 2023.

EAME sales increased 13 percent due to favorable price realization and higher sales of equipment to end users.

Asia/Pacific sales increased 6 percent driven by favorable price realization, partially offset by unfavorable currency impacts related to the Australian dollar and Japanese yen.

Dealer inventory increased about $2.2 billion during the six months ended June 30, 2023, compared with an increase of $900 million during the six months ended June 30, 2022. Dealers are independent, and the reasons for changes in their inventory levels vary, including their expectations of future demand and product delivery times. Dealers' demand expectations take into account seasonal changes, macroeconomic conditions, machine rentals and other factors. Delivery times can vary based on availability of product from Caterpillar factories and product distribution centers.

Sales and Revenues by Segment

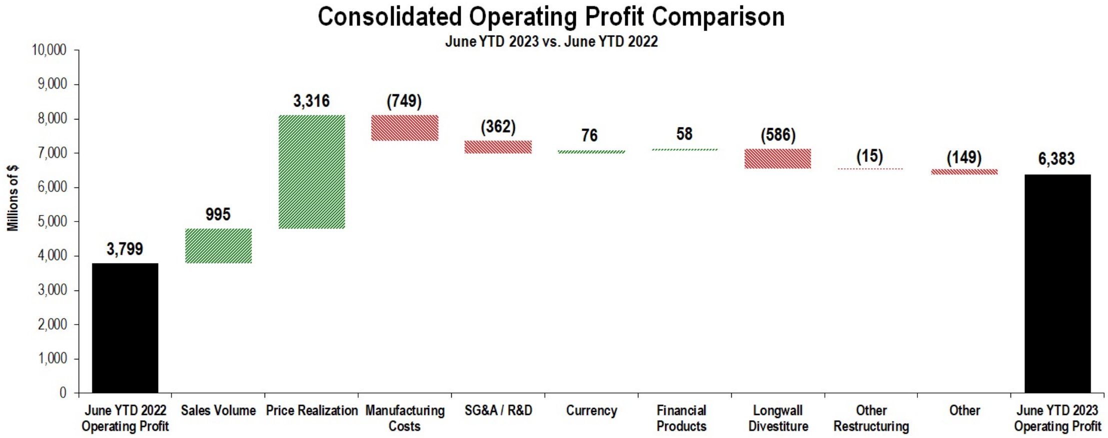
(Millions of dollars)	Six Months Ended June 30, 2022	Sales Volume	Price Realization	Currency	Inter-Segment / Other	Six Months Ended June 30, 2023	$ Change	% Change
Construction Industries	$ 12,148	$ 433	$ 1,571	$ (256)	$ 4	$ 13,900	$ 1,752	14 %
Resource Industries	5,791	407	847	(76)	21	6,990	1,199	21 %
Energy & Transportation	10,743	1,553	897	(110)	390	13,473	2,730	25 %
All Other Segment	236	(6)	—	(2)	(1)	227	(9)	(4 %)
Corporate Items and Eliminations	(2,493)	(39)	1	(1)	(414)	(2,946)	(453)	
Machinery, Energy & Transportation Sales	26,425	2,348	3,316	(445)	—	31,644	5,219	20 %
Financial Products Segment	1,581	—	—	—	244	1,825	244	15 %
Corporate Items and Eliminations	(170)	—	—	—	(119)	(289)	(119)	
Financial Products Revenues	1,411	—	—	—	125	1,536	125	9 %
Consolidated Sales and Revenues	$ 27,836	$ 2,348	$ 3,316	$ (445)	$ 125	$ 33,180	$ 5,344	19 %

Sales and Revenues by Geographic Region

	North America		Latin America		EAME		Asia/Pacific		External Sales and Revenues		Inter-Segment		Total Sales and Revenues	
(Millions of dollars)	**$**	**% Chg**	**$**	**% Chg**	**$**	**% Chg**	**$**	**% Chg**	**$**	**% Chg**	**$**	**% Chg**	**$**	**% Chg**
Six Months Ended June 30, 2023														
Construction Industries	$ 7,576	32 %	$ 1,165	(8 %)	$ 2,774	12 %	$ 2,310	(11 %)	$ 13,825	14 %	$ 75	6 %	$ 13,900	14 %
Resource Industries	2,650	30 %	1,012	17 %	1,116	3 %	2,054	24 %	6,832	21 %	158	15 %	6,990	21 %
Energy & Transportation	5,692	35 %	839	21 %	2,863	19 %	1,618	18 %	11,012	27 %	2,461	19 %	13,473	25 %
All Other Segment	34	(6 %)	—	— %	8	(20 %)	27	(13 %)	69	(10 %)	158	(1 %)	227	(4 %)
Corporate Items and Eliminations	(80)		(2)		(3)		(9)		(94)		(2,852)		(2,946)	
Machinery, Energy & Transportation Sales	15,872	33 %	3,014	7 %	6,758	13 %	6,000	6 %	31,644	20 %	—	— %	31,644	20 %
Financial Products Segment	1,168	16 %	206	29 %	232	20 %	219	— %	1,825 [1]	15 %	—	— %	1,825	15 %
Corporate Items and Eliminations	(168)		(39)		(39)		(43)		(289)		—		(289)	
Financial Products Revenues	1,000	8 %	167	37 %	193	11 %	176	(5 %)	1,536	9 %	—	— %	1,536	9 %
Consolidated Sales and Revenues	$ 16,872	31 %	$ 3,181	8 %	$ 6,951	13 %	$ 6,176	6 %	$ 33,180	19 %	$ —	— %	$ 33,180	19 %
Six Months Ended June 30, 2022														
Construction Industries	$ 5,726		$ 1,262		$ 2,479		$ 2,610		$ 12,077		$ 71		$ 12,148	
Resource Industries	2,045		865		1,083		1,661		5,654		137		5,791	
Energy & Transportation	4,215		692		2,399		1,366		8,672		2,071		10,743	
All Other Segment	36		—		10		31		77		159		236	
Corporate Items and Eliminations	(44)		(1)		(2)		(8)		(55)		(2,438)		(2,493)	
Machinery, Energy & Transportation Sales	11,978		2,818		5,969		5,660		26,425		—		26,425	
Financial Products Segment	1,008		160		193		220		1,581 [1]		—		1,581	
Corporate Items and Eliminations	(78)		(38)		(19)		(35)		(170)		—		(170)	
Financial Products Revenues	930		122		174		185		1,411		—		1,411	
Consolidated Sales and Revenues	$ 12,908		$ 2,940		$ 6,143		$ 5,845		$ 27,836		$ —		$ 27,836	

[1] Includes revenues from Machinery, Energy & Transportation of $334 million and $208 million in the six months ended June 30, 2023 and 2022, respectively.

CONSOLIDATED OPERATING PROFIT



The chart above graphically illustrates reasons for the change in consolidated operating profit between the six months ended June 30, 2022 (at left) and the six months ended June 30, 2023 (at right). Caterpillar management utilizes these charts internally to visually communicate with the company's board of directors and employees. The bar titled Longwall Divestiture is included in total restructuring costs. The bar titled Other includes consolidating adjustments and Machinery, Energy & Transportation's other operating (income) expenses.

Operating profit for the six months ended June 30, 2023, was $6.383 billion, an increase of $2.584 billion, or 68 percent, compared with $3.799 billion for the six months ended June 30, 2022. The increase was due to favorable price realization and higher sales volume, partially offset by unfavorable manufacturing costs, the impact of the divestiture of the company's Longwall business and higher SG&A/R&D expenses. Unfavorable manufacturing costs largely reflected higher material costs. The increase in SG&A/R&D expenses was primarily driven by investments aligned with strategic initiatives and an unfavorable change in fair value adjustments related to deferred compensation plans.

In the first quarter of 2023, the divestiture of the company's Longwall business was finalized, resulting in an unfavorable impact to operating profit of $586 million, primarily a non-cash item driven by the release of accumulated foreign currency translation.

Operating profit margin was 19.2 percent for the six months ended June 30, 2023, compared with 13.6 percent for the six months ended June 30, 2022.

Profit (Loss) by Segment

(Millions of dollars)	**Six Months Ended June 30, 2023**	**Six Months Ended June 30, 2022**	**$ Change**	**% Change**
Construction Industries	$ 3,593	$ 2,046	$ 1,547	76 %
Resource Industries	1,504	716	788	110 %
Energy & Transportation	2,326	1,197	1,129	94 %
All Other Segment	21	34	(13)	(38 %)
Corporate Items and Eliminations	(1,280)	(474)	(806)	
Machinery, Energy & Transportation	6,164	3,519	2,645	75 %
Financial Products Segment	472	455	17	4 %
Corporate Items and Eliminations	42	—	42	
Financial Products	514	455	59	13 %
Consolidating Adjustments	(295)	(175)	(120)	
Consolidated Operating Profit	$ 6,383	$ 3,799	$ 2,584	68 %

Other Profit/Loss and Tax Items

- Interest expense excluding Financial Products for the six months ended June 30, 2023, was $256 million, compared with $217 million for the six months ended June 30, 2022. The increase was due to higher average borrowing rates.
- Other income (expense) for the six months ended June 30, 2023, was income of $159 million, compared with income of $513 million for the six months June 30, 2022. The change was primarily driven by unfavorable impacts from foreign currency exchange and pension and OPEB plan costs, partially offset by higher investment and interest income.
- The provision for income taxes for the six months ended June 30, 2023 reflected an estimated annual tax rate of 23 percent, compared with 23.5 percent for the six months ended June 30, 2022, excluding the discrete items discussed below. The comparative tax rate for full-year 2022 was 23.2 percent.

  The 2023 estimated annual tax rate excludes the impact of the nondeductible loss of $586 million related to the divestiture of the company's Longwall business. In the six months ended June 30, 2023, the company recorded a discrete tax benefit of $88 million due to a change in the valuation allowance for certain deferred tax assets. In addition, the company recorded a discrete tax benefit of $32 million for the settlement of stock-based compensation awards with associated tax deductions in excess of cumulative U.S. GAAP compensation expense, compared with a $18 million benefit for the six months ended June 30, 2022. In the six months ended June 30, 2022, the company also recorded discrete tax benefits of $49 million for a prior year tax adjustment due to a change in estimate.

Construction Industries

Construction Industries' total sales were $13.900 billion for the six months ended June 30, 2023, an increase of $1.752 billion, or 14 percent, compared with $12.148 billion for the six months ended June 30, 2022. The increase was due to favorable price realization.

- In North America, sales increased due to favorable price realization and higher sales volume. Higher sales volume was driven by the impact from changes in dealer inventories and higher sales of equipment to end users. Dealer inventory increased during the six months ended June 30, 2023, compared to remaining about flat during the six months ended June 30, 2022.
- Sales decreased in Latin America primarily due to lower sales volume, partially offset by favorable price realization. Lower sales volume was driven by the impact from changes in dealer inventories and lower sales of equipment to end users. Dealer inventory decreased during the six months ended June 30, 2023, compared with an increase during the six months ended June 30, 2022.
- In EAME, sales increased primarily due to favorable price realization and higher sales volume, partially offset by unfavorable currency impacts, mainly related to the euro and British pound. Higher sales volume was due to the impact from changes in dealer inventories, partially offset by lower sales of equipment to end users. Dealer inventory increased more during the six months ended June 30, 2023, than during the six months ended June 30, 2022.
- Sales decreased in Asia/Pacific due to lower sales volume and unfavorable currency impacts, primarily related to the Japanese yen, Chinese yuan and Australian dollar, partially offset by favorable price realization. Lower sales volume was driven by lower sales of equipment to end users.

Construction Industries' profit was $3.593 billion for the six months ended June 30, 2023, an increase of $1.547 billion, or 76 percent, compared with $2.046 billion for the six months ended June 30, 2022. The increase was mainly due to favorable price realization.

Construction Industries' profit as a percent of total sales was 25.8 percent for the six months ended June 30, 2023, compared with 16.8 percent for the six months ended June 30, 2022.

Resource Industries

Resource Industries' total sales were $6.990 billion for the six months ended June 30, 2023, an increase of $1.199 billion, or 21 percent, compared with $5.791 billion for the six months ended June 30, 2022. The increase was due to favorable price realization and higher sales volume. The increase in sales volume was driven by higher sales of equipment to end users, partially offset by lower aftermarket parts sales volume.

Resource Industries' profit was $1.504 billion for the six months ended June 30, 2023, an increase of $788 million, or 110 percent, compared with $716 million for the six months ended June 30, 2022. The increase was mainly due to favorable price realization and higher sales volume, partially offset by unfavorable manufacturing costs. Unfavorable manufacturing costs largely reflected higher material costs.

Resource Industries' profit as a percent of total sales was 21.5 percent for the six months ended June 30, 2023, compared with 12.4 percent for the six months ended June 30, 2022.

Energy & Transportation

Sales by Application **(Millions of dollars)**	**Six Months Ended June 30, 2023**	**Six Months Ended June 30, 2022**	**$ Change**	**% Change**
Oil and Gas	$ 3,074	$ 2,180	$ 894	41 %
Power Generation	2,929	2,198	731	33 %
Industrial	2,573	2,137	436	20 %
Transportation	2,436	2,157	279	13 %
External Sales	11,012	8,672	2,340	27 %
Inter-Segment	2,461	2,071	390	19 %
Total Sales	$ 13,473	$ 10,743	$ 2,730	25 %

Energy & Transportation's total sales were $13.473 billion for the six months ended June 30, 2023, an increase of $2.730 billion, or 25 percent, compared with $10.743 billion for the six months ended June 30, 2022. Sales increased across all applications and inter-segment sales. The increase in sales was primarily due to higher sales volume and favorable price realization.

- Oil and Gas – Sales increased for turbines and turbine-related services. Sales also increased in reciprocating engines used in well servicing and gas compression applications.
- Power Generation – Sales increased in large reciprocating engines, primarily data center applications, and small reciprocating engines. Turbines and turbine-related services increased as well.
- Industrial – Sales were up across all regions.
- Transportation – Sales increased in marine and rail services.

Energy & Transportation's profit was $2.326 billion for the six months ended June 30, 2023, an increase of $1.129 billion, or 94 percent, compared with $1.197 billion for the six months ended June 30, 2022. The increase was mainly due to favorable price realization and higher sales volume, partially offset by unfavorable manufacturing costs and higher SG&A/R&D expenses. Unfavorable manufacturing costs were driven by higher material costs. The increase in SG&A/R&D expenses was primarily driven by investments aligned with strategic initiatives.

Energy & Transportation's profit as a percent of total sales was 17.3 percent for the six months ended June 30, 2023, compared with 11.1 percent for the six months ended June 30, 2022.

Financial Products Segment

Financial Products' segment revenues were $1.825 billion for the six months ended June 30, 2023, an increase of $244 million, or 15 percent, compared with $1.581 billion for the six months ended June 30, 2022. The increase was primarily due to higher average financing rates across all regions.

Financial Products' segment profit was $472 million for the six months ended June 30, 2023, an increase of $17 million, or 4 percent, compared with $455 million for the six months ended June 30, 2022. The increase was mainly due to lower provision for credit losses at Cat Financial and higher net yield on average ***earning assets***, partially offset by unfavorable currency impacts and an increase in SG&A expenses.

Corporate Items and Eliminations

Expense for corporate items and eliminations was $1.238 billion for the six months ended June 30, 2023, an increase of $764 million from the six months ended June 30, 2022, primarily driven by the impact of the divestiture of the company's Longwall business and an unfavorable change in fair value adjustments related to deferred compensation plans.

In the first quarter of 2023, the divestiture of the company's Longwall business was finalized, resulting in an unfavorable impact to operating profit of $586 million, primarily a non-cash item driven by the release of accumulated foreign currency translation. This impact was included in total restructuring costs.

RESTRUCTURING COSTS

In 2023, we expect to incur about $700 million of restructuring costs, which includes a pre-tax loss of approximately $586 million from the divestiture of our Longwall business within Resource Industries on February 1, 2023. In addition, we expect to incur about $100 million of restructuring costs this year primarily related to strategic actions to address a small number of products. We expect that prior restructuring actions will result in an incremental benefit to operating costs, primarily Cost of goods sold and SG&A expenses of about $75 million in 2023 compared with 2022.

Additional information related to restructuring costs is included in Note 20 - "Restructuring Costs" of Part I, Item 1 "Financial Statements".

GLOSSARY OF TERMS

1. **Adjusted Operating Profit Margin** – Operating profit excluding restructuring costs, which include the divestiture of the company's Longwall business, as a percent of sales and revenues.
2. **Adjusted Profit Per Share** – Profit per share excluding restructuring costs, which include the divestiture of the company's Longwall business, and a discrete tax benefit to adjust deferred tax balances.
3. **All Other Segment** – Primarily includes activities such as: business strategy; product management and development; manufacturing and sourcing of filters and fluids, undercarriage, ground-engaging tools, fluid transfer products, precision seals, rubber sealing and connecting components primarily for Cat® products; parts distribution; integrated logistics solutions; distribution services responsible for dealer development and administration, including a wholly owned dealer in Japan; dealer portfolio management and ensuring the most efficient and effective distribution of machines, engines and parts; brand management and marketing strategy; and digital investments for new customer and dealer solutions that integrate data analytics with state-of-the-art digital technologies while transforming the buying experience.
4. **Consolidating Adjustments** – Elimination of transactions between Machinery, Energy & Transportation and Financial Products.
5. **Construction Industries** – A segment primarily responsible for supporting customers using machinery in infrastructure and building construction applications. Responsibilities include business strategy, product design, product management and development, manufacturing, marketing and sales and product support. The product portfolio includes asphalt pavers; backhoe loaders; cold planers; compactors; compact track loaders; forestry machines; material handlers; motor graders; pipelayers; road reclaimers; skid steer loaders; telehandlers; track-type loaders; track-type tractors (small, medium); track excavators (mini, small, medium, large); wheel excavators; wheel loaders (compact, small, medium); and related parts and work tools.
6. **Corporate Items and Eliminations** – Includes corporate-level expenses, timing differences (as some expenses are reported in segment profit on a cash basis), methodology differences between segment and consolidated external reporting, certain restructuring costs and inter-segment eliminations.
7. **Currency** – With respect to sales and revenues, currency represents the translation impact on sales resulting from changes in foreign currency exchange rates versus the U.S. dollar. With respect to operating profit, currency represents the net translation impact on sales and operating costs resulting from changes in foreign currency exchange rates versus the U.S. dollar. Currency only includes the impact on sales and operating profit for the Machinery, Energy & Transportation line of business; currency impacts on Financial Products revenues and operating profit are included in the Financial Products portions of the respective analyses. With respect to other income/expense, currency represents the effects of forward and option contracts entered into by the company to reduce the risk of fluctuations in exchange rates (hedging) and the net effect of changes in foreign currency exchange rates on our foreign currency assets and liabilities for consolidated results (translation).
8. **Dealer Inventories** – Represents dealer machine and engine inventories, excluding aftermarket parts.
9. **EAME** – A geographic region including Europe, Africa, the Middle East and Eurasia.
10. **Earning Assets** – Assets consisting primarily of total finance receivables net of unearned income, plus equipment on operating leases net of accumulated depreciation at Cat Financial.

11. **Energy & Transportation** – A segment primarily responsible for supporting customers using reciprocating engines, turbines, diesel-electric locomotives and related services across industries serving Oil and Gas, Power Generation, Industrial and Transportation applications, including marine- and rail-related businesses. Responsibilities include business strategy, product design, product management, development and testing, manufacturing, marketing and sales and product support. The product and services portfolio includes turbines, centrifugal gas compressors, and turbine-related services; reciprocating engine-powered generator sets; integrated systems and solutions used in the electric power generation industry; reciprocating engines, drivetrain and integrated systems and solutions for the marine and oil and gas industries; reciprocating engines, drivetrain and integrated systems and solutions supplied to the industrial industry as well as Cat machinery; electrified powertrain and zero-emission power sources and service solutions development; and diesel-electric locomotives and components and other rail-related products and services, including remanufacturing and leasing. Responsibilities also include the remanufacturing of Caterpillar reciprocating engines and components and remanufacturing services for other companies; and product support of on-highway vocational trucks for North America.
12. **Financial Products** – The company defines Financial Products as our finance and insurance subsidiaries, primarily Caterpillar Financial Services Corporation (Cat Financial) and Caterpillar Insurance Holdings Inc. (Insurance Services). Financial Products' information relates to the financing to customers and dealers for the purchase and lease of Caterpillar and other equipment.
13. **Financial Products Segment** – Provides financing alternatives to customers and dealers around the world for Caterpillar products and services, as well as financing for power generation facilities that, in most cases, incorporate Caterpillar products. Financing plans include operating and finance leases, revolving charge accounts, installment sale contracts, repair/rebuild financing, working capital loans and wholesale financing plans. The segment also provides insurance and risk management products and services that help customers and dealers manage their business risk. Insurance and risk management products offered include physical damage insurance, inventory protection plans, extended service coverage and maintenance plans for machines and engines, and dealer property and casualty insurance. The various forms of financing, insurance and risk management products offered to customers and dealers help support the purchase and lease of Caterpillar equipment. The segment also earns revenues from Machinery, Energy & Transportation, but the related costs are not allocated to operating segments. Financial Products' segment profit is determined on a pretax basis and includes other income/expense items.
14. **Latin America** – A geographic region including Central and South American countries and Mexico.
15. **Machinery, Energy & Transportation (ME&T)** – The company defines ME&T as Caterpillar Inc. and its subsidiaries, excluding Financial Products. ME&T's information relates to the design, manufacturing and marketing of its products.
16. **Machinery, Energy & Transportation Other Operating (Income) Expenses** – Comprised primarily of gains/losses on disposal of long-lived assets, gains/losses on divestitures and legal settlements and accruals.
17. **Manufacturing Costs** – Manufacturing costs exclude the impacts of currency and represent the volume-adjusted change for variable costs and the absolute dollar change for period manufacturing costs. Variable manufacturing costs are defined as having a direct relationship with the volume of production. This includes material costs, direct labor and other costs that vary directly with production volume, such as freight, power to operate machines and supplies that are consumed in the manufacturing process. Period manufacturing costs support production but are defined as generally not having a direct relationship to short-term changes in volume. Examples include machinery and equipment repair, depreciation on manufacturing assets, facility support, procurement, factory scheduling, manufacturing planning and operations management.
18. **Mark-to-market gains/losses** – Represents the net gain or loss of actual results differing from the company's assumptions and the effects of changing assumptions for our defined benefit pension and OPEB plans. These gains and losses are immediately recognized through earnings upon the annual remeasurement in the fourth quarter, or on an interim basis as triggering events warrant remeasurement.
19. **Pension and Other Postemployment Benefits (OPEB)** – The company's defined-benefit pension and postretirement benefit plans.
20. **Price Realization** – The impact of net price changes excluding currency and new product introductions. Price realization includes geographic mix of sales, which is the impact of changes in the relative weighting of sales prices between geographic regions.

21. **Resource Industries** – A segment primarily responsible for supporting customers using machinery in mining, heavy construction and quarry and aggregates. Responsibilities include business strategy, product design, product management and development, manufacturing, marketing and sales and product support. The product portfolio includes large track-type tractors; large mining trucks; hard rock vehicles; electric rope shovels; draglines; hydraulic shovels; rotary drills; large wheel loaders; off-highway trucks; articulated trucks; wheel tractor scrapers; wheel dozers; landfill compactors; soil compactors; select work tools; machinery components; electronics and control systems and related parts. In addition to equipment, Resource Industries also develops and sells technology products and services to provide customers fleet management, equipment management analytics, autonomous machine capabilities, safety services and mining performance solutions. Resource Industries also manages areas that provide services to other parts of the company, including strategic procurement, lean center of excellence, integrated manufacturing, research and development for hydraulic systems, automation, electronics and software for Cat machines and engines.
22. **Restructuring Costs** – May include costs for employee separation, long-lived asset impairments, contract terminations and divestiture impacts. These costs are included in Other operating (income) expenses except for defined-benefit plan curtailment losses and special termination benefits, which are included in Other income (expense). Restructuring costs also include other exit-related costs, which may consist of accelerated depreciation, inventory write-downs, building demolition, equipment relocation and project management costs and LIFO inventory decrement benefits from inventory liquidations at closed facilities, all of which are primarily included in Cost of goods sold.
23. **Sales Volume** – With respect to sales and revenues, sales volume represents the impact of changes in the quantities sold for Machinery, Energy & Transportation as well as the incremental sales impact of new product introductions, including emissions-related product updates. With respect to operating profit, sales volume represents the impact of changes in the quantities sold for Machinery, Energy & Transportation combined with product mix as well as the net operating profit impact of new product introductions, including emissions-related product updates. Product mix represents the net operating profit impact of changes in the relative weighting of Machinery, Energy & Transportation sales with respect to total sales. The impact of sales volume on segment profit includes inter-segment sales.
24. **Services** – Enterprise services include, but are not limited to, aftermarket parts, Financial Products revenues and other service-related revenues. Machinery, Energy & Transportation segments exclude most Financial Products revenues.

LIQUIDITY AND CAPITAL RESOURCES

Sources of funds

We generate significant capital resources from operating activities, which are the primary source of funding for our ME&T operations. Funding for these businesses is also available from commercial paper and long-term debt issuances. Financial Products' operations are funded primarily from commercial paper, term debt issuances and collections from its existing portfolio. On a consolidated basis, we had positive operating cash flow in the first six months of 2023 and ended the second quarter with $7.39 billion of cash, an increase of $383 million from year-end 2022. In addition, ME&T has invested in available-for-sale debt securities and bank time deposits with varying maturity dates within one year that are considered highly liquid and are available for current operations. These ME&T securities were $2.02 billion at the end of June 30, 2023 and are included in Prepaid expenses and other current assets and Other assets in the Consolidated Statement of Financial Position. We intend to maintain a strong cash and liquidity position.

Consolidated operating cash flow for the first six months of 2023 was $4.82 billion, up $2.28 billion compared to the same period a year ago. The increase was primarily due to higher profit before taxes adjusted for non-cash items, including the loss on divestiture of the company's Longwall business.

Total debt as of June 30, 2023 was $37.70 billion, an increase of $706 million from year-end 2022. Debt related to ME&T decreased $35 million in the first six months of 2023 while debt related to Financial Products increased $749 million.

As of June 30, 2023, we had three global credit facilities with a syndicate of banks totaling $10.50 billion (Credit Facility) available in the aggregate to both Caterpillar and Cat Financial for general liquidity purposes. Based on management's allocation decision, which can be revised from time to time, the portion of the Credit Facility available to ME&T as of June 30, 2023 was $2.75 billion. Information on our Credit Facility is as follows:

- The 364-day facility of $3.15 billion (of which $825 million is available to ME&T) expires in August 2023.
- The three-year facility, as amended and restated in September 2022, of $2.73 billion (of which $715 million is available to ME&T) expires in August 2025.
- The five-year facility, as amended and restated in September 2022, of $4.62 billion (of which $1.21 billion is available to ME&T) expires in September 2027.

At June 30, 2023, Caterpillar’s consolidated net worth was $18.30 billion, which was above the $9.00 billion required under the Credit Facility. The consolidated net worth is defined in the Credit Facility as the consolidated shareholders’ equity including preferred stock but excluding the pension and other postretirement benefits balance within Accumulated other comprehensive income (loss).

At June 30, 2023, Cat Financial’s covenant interest coverage ratio was 1.96 to 1. This was above the 1.15 to 1 minimum ratio calculated as (1) profit excluding income taxes, interest expense and net gain (loss) from interest rate derivatives to (2) interest expense calculated at the end of each calendar quarter for the rolling four quarter period then most recently ended, required by the Credit Facility.

In addition, at June 30, 2023, Cat Financial’s six-month covenant leverage ratio was 7.02 to 1. This was below the maximum ratio of debt to net worth of 10 to 1, calculated (1) on a monthly basis as the average of the leverage ratios determined on the last day of each of the six preceding calendar months and (2) at each December 31, required by the Credit Facility.

In the event Caterpillar or Cat Financial does not meet one or more of their respective financial covenants under the Credit Facility in the future (and are unable to obtain a consent or waiver), the syndicate of banks may terminate the commitments allocated to the party that does not meet its covenants. Additionally, in such event, certain of Cat Financial’s other lenders under other loan agreements where similar financial covenants or cross default provisions are applicable may, at their election, choose to pursue remedies under those loan agreements, including accelerating the repayment of outstanding borrowings. At June 30, 2023, there were no borrowings under the Credit Facility.

Our total credit commitments and available credit as of June 30, 2023 were:

	June 30, 2023		
(Millions of dollars)	**Consolidated**	**Machinery, Energy & Transportation**	**Financial Products**
Credit lines available:			
Global credit facilities	$ 10,500	$ 2,750	$ 7,750
Other external	4,140	571	3,569
Total credit lines available	14,640	3,321	11,319
Less: Commercial paper outstanding	(5,045)	—	(5,045)
Less: Utilized credit	(1,031)	—	(1,031)
Available credit	$ 8,564	$ 3,321	$ 5,243

The other external consolidated credit lines with banks as of June 30, 2023 totaled $4.14 billion. These committed and uncommitted credit lines, which may be eligible for renewal at various future dates or have no specified expiration date, are used primarily by our subsidiaries for local funding requirements. Caterpillar or Cat Financial may guarantee subsidiary borrowings under these lines.

We receive debt ratings from the major credit rating agencies. In May 2023, Fitch upgraded our debt rating to "high-A", while Moody’s and S&P maintain a “mid-A” debt rating. A downgrade of our credit ratings by any of the major credit rating agencies could result in increased borrowing costs and could make access to certain credit markets more difficult. In the event economic conditions deteriorate such that access to debt markets becomes unavailable, ME&T’s operations would rely on cash flow from operations, use of existing cash balances, borrowings from Cat Financial and access to our committed credit facilities. Our Financial Products’ operations would rely on cash flow from its existing portfolio, existing cash balances, access to our committed credit facilities and other credit line facilities of Cat Financial, and potential borrowings from Caterpillar. In addition, we maintain a support agreement with Cat Financial, which requires Caterpillar to remain the sole owner of Cat Financial and may, under certain circumstances, require Caterpillar to make payments to Cat Financial should Cat Financial fail to maintain certain financial ratios.

We facilitate voluntary supplier finance programs (the “Programs”) through participating financial institutions. We account for the payments made under the Programs, the same as our other accounts payable, as a reduction to our cash flows from operations. We do not believe that changes in the availability of the Programs will have a significant impact on our liquidity. Additional information related to the Programs is included in Note 2 - "New accounting guidance" of Part I, Item 1 "Financial Statements".

Machinery, Energy & Transportation

Net cash provided by operating activities was $4.67 billion in the first six months of 2023, compared with net cash provided of $1.29 billion for the same period in 2022. The increase was primarily due to higher profit before taxes adjusted for non-cash items, including the loss on divestiture of the company's Longwall business and lower working capital requirements. Within working capital, changes in inventories, accrued expenses and receivables favorably impacted cash flow, but were partially offset by changes in accounts payable and customer advances.

Net cash used by investing activities in the first six months of 2023 was $1.19 billion, compared with net cash used of $1.24 billion in the first six months of 2022. The decrease was due to lower investments in securities, net of proceeds from sale of securities, partially offset by an increase in capital spend.

Net cash used for financing activities during the first six months of 2023 was $3.19 billion, compared with net cash used of $3.26 billion in the same period of 2022. The change was primarily due to lower share repurchases in the first six months of 2023 along with favorable impacts from borrowing activity, partially offset by increased dividends.

While our short-term priorities for the use of cash may vary from time to time as business needs and conditions dictate, our long-term cash deployment strategy is focused on the following priorities. Our top priority is to maintain a strong financial position in support of a mid-A rating. Next, we intend to fund operational requirements and commitments. Then, we intend to fund priorities that profitably grow the company and return capital to shareholders through dividend growth and share repurchases. Additional information on cash deployment is as follows:

Strong financial position – Our top priority is to maintain a strong financial position in support of a mid-A rating. We track a diverse group of financial metrics that focus on liquidity, leverage, cash flow and margins which align with our cash deployment actions and the various methodologies used by the major credit rating agencies.

Operational excellence and commitments – Capital expenditures were $685 million during the first six months of 2023, compared to $594 million for the same period in 2022. We expect ME&T's capital expenditures in 2023 to be about $1.5 billion. We made $264 million of contributions to our pension and other postretirement benefit plans during the first six months of 2023. We currently anticipate full-year 2023 contributions of approximately $372 million. In comparison, we made $255 million of contributions to our pension and other postretirement benefit plans during the first six months of 2022.

Fund strategic growth initiatives and return capital to shareholders – We intend to utilize our liquidity and debt capacity to fund targeted investments that drive long-term profitable growth focused in the areas of expanded offerings, services and sustainability, including acquisitions.

As part of our capital allocation strategy, ME&T free cash flow is a liquidity measure we use to determine the cash generated and available for financing activities including debt repayments, dividends and share repurchases. We define ME&T free cash flow as cash from ME&T operations less capital expenditures, excluding discretionary pension and other postretirement benefit plan contributions and cash payments related to settlements with the U.S. Internal Revenue Service. A goal of our capital allocation strategy is to return substantially all ME&T free cash flow to shareholders over time in the form of dividends and share repurchases, while maintaining a mid-A rating.

Our share repurchase plans are subject to the company's cash deployment priorities and are evaluated on an ongoing basis considering the financial condition of the company and the economic outlook, corporate cash flow, the company's liquidity needs, and the health and stability of global credit markets. The timing and amount of future repurchases may vary depending on market conditions and investing priorities. In May 2022, the Board approved a share repurchase authorization (the 2022 Authorization) of up to $15.0 billion of Caterpillar common stock effective August 1, 2022, with no expiration. In the first six months of 2023, we repurchased $1.83 billion of Caterpillar common stock, with $10.97 billion remaining under the 2022 Authorization as of June 30, 2023. Our basic shares outstanding as of June 30, 2023 were approximately 510 million.

Each quarter, our Board of Directors reviews the company's dividend for the applicable quarter. The Board evaluates the financial condition of the company and considers the economic outlook, corporate cash flow, the company's liquidity needs, and the health and stability of global credit markets to determine whether to maintain or change the quarterly dividend. In June 2023, the Board of Directors approved an 8 percent increase in the quarterly dividend to $1.30 per share, and we continue to expect our strong financial position to support the dividend. Dividends paid totaled $1.24 billion in the first six months of 2023.

Financial Products

Financial Products operating cash flow was $542 million in the first six months of 2023, compared with $735 million for the same period in 2022. Net cash used for investing activities was $1.01 billion for the first six months of 2023, compared with net cash used of $125 million for the same period in 2022. The change was primarily due to portfolio related activity. Net cash provided by financing activities was $613 million in the first six months of 2023 compared with net cash used of $630 million for the same period in 2022. The change was primarily due to higher portfolio funding requirements.

RECENT ACCOUNTING PRONOUNCEMENTS

For a discussion of recent accounting pronouncements, see Part I, Item 1. Note 2 - “New accounting guidance”.

CRITICAL ACCOUNTING ESTIMATES

For a discussion of the company’s critical accounting estimates, see Part II, Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations in our 2022 Annual Report on Form 10-K. There have been no significant changes to our critical accounting estimates since our 2022 Annual Report on Form 10-K.

OTHER MATTERS

Information related to legal proceedings appears in Note 14—Environmental and Legal Matters of Part II, Item 8 “Financial Statements and Supplementary Data.”

Order Backlog

At the end of the second quarter of 2023, the dollar amount of backlog believed to be firm was approximately $30.7 billion, which was about flat to the first quarter of 2023. Of the total backlog at June 30, 2023, approximately $5.9 billion was not expected to be filled in the following twelve months.

NON-GAAP FINANCIAL MEASURES

We provide the following definitions for the non-GAAP financial measures used in this report. These non-GAAP financial measures have no standardized meaning prescribed by U.S. GAAP and therefore are unlikely to be comparable to the calculation of similar measures for other companies. Management does not intend these items to be considered in isolation or as a substitute for the related GAAP measures.

We believe it is important to separately quantify the profit impact of three significant items in order for our results to be meaningful to our readers. These items consist of (i) restructuring costs related to the divestiture of the company's Longwall business, (ii) other restructuring costs and (iii) certain deferred tax valuation allowance adjustments. We do not consider these items indicative of earnings from ongoing business activities and believe the non-GAAP measure provides investors with useful perspective on underlying business results and trends and aids with assessing our period-over-period results. In addition, we provide a calculation of ME&T free cash flow as we believe it is an important measure for investors to determine the cash generation available for financing activities including debt repayments, dividends and share repurchases.

Reconciliations of adjusted results to the most directly comparable GAAP measures are as follows:

(Dollars in millions except per share data)	Operating Profit	Operating Profit Margin	Profit Before Taxes	Provision (Benefit) for Income Taxes	Effective Tax Rate	Profit	Profit per Share
Three Months Ended June 30, 2023 - U.S. GAAP	**$ 3,652**	**21.1 %**	**$ 3,652**	**$ 752**	**20.6 %**	**$ 2,922**	**$ 5.67**
Restructuring costs	31	0.2 %	31	6	20.0 %	25	0.05
Deferred tax valuation allowance adjustments	—	— %	—	88	— %	(88)	(0.17)
Three Months Ended June 30, 2023 - Adjusted	$ 3,683	21.3 %	$ 3,683	$ 846	23.0 %	$ 2,859	$ 5.55
Three Months Ended June 30, 2022 - U.S. GAAP	**$ 1,944**	**13.6 %**	**$ 2,096**	**$ 427**	**20.4 %**	**$ 1,673**	**$ 3.13**
Restructuring costs	28	0.2 %	28	2	10.0 %	26	0.05
Three Months Ended June 30, 2022 - Adjusted	$ 1,972	13.8 %	$ 2,124	$ 429	20.2 %	$ 1,699	$ 3.18
Six Months Ended June 30, 2023- U.S. GAAP	**$ 6,383**	**19.2 %**	**$ 6,286**	**$ 1,460**	**23.2 %**	**$ 4,865**	**$ 9.41**
Restructuring costs - Longwall divestiture	586	1.8 %	586	—	— %	586	1.13
Other restructuring costs	56	0.2 %	56	11	20.0 %	45	0.09
Deferred tax valuation allowance adjustments	—	— %	—	88	— %	(88)	(0.17)
Six Months Ended June 30, 2023 - Adjusted	$ 7,025	21.2 %	$ 6,928	$ 1,559	22.5 %	$ 5,408	$ 10.46
Six Months Ended June 30, 2022 - U.S. GAAP	**$ 3,799**	**13.6 %**	**$ 4,095**	**$ 896**	**21.9 %**	**$ 3,210**	**$ 5.99**
Restructuring costs	41	0.2 %	41	4	10.0 %	37	0.07
Six Months Ended June 30, 2022 - Adjusted	$ 3,840	13.8 %	$ 4,136	$ 900	21.8 %	$ 3,247	$ 6.06

Reconciliations of ME&T free cash flow to the most directly comparable GAAP measure, net cash provided by operating activities are as follows:

(Millions of dollars)	**Six Months Ended June 30**	
	2023	**2022**
ME&T net cash provided by operating activities [1]	$ 4,667	$ 1,289
ME&T capital expenditures	(685)	(594)
ME&T free cash flow	$ 3,982	$ 695

[1] See reconciliation of ME&T net cash provided by operating activities to consolidated net cash provided by operating activities on pages 74 - 75.

Supplemental Consolidating Data

We are providing supplemental consolidating data for the purpose of additional analysis. The data has been grouped as follows:

Consolidated – Caterpillar Inc. and its subsidiaries.

Machinery, Energy & Transportation – We define ME&T as it is presented in the supplemental data as Caterpillar Inc. and its subsidiaries, excluding Financial Products. ME&T's information relates to the design, manufacturing and marketing of our products.

Financial Products – We define Financial Products as it is presented in the supplemental data as our finance and insurance subsidiaries, primarily Caterpillar Financial Services Corporation (Cat Financial) and Caterpillar Insurance Holdings Inc. (Insurance Services). Financial Products' information relates to the financing to customers and dealers for the purchase and lease of Caterpillar and other equipment.

Consolidating Adjustments – Eliminations of transactions between ME&T and Financial Products.

The nature of the ME&T and Financial Products businesses is different, especially with regard to the financial position and cash flow items. Caterpillar management utilizes this presentation internally to highlight these differences. We believe this presentation will assist readers in understanding our business.

Pages 68 to 75 reconcile ME&T and Financial Products to Caterpillar Inc. consolidated financial information. Certain amounts for prior periods have been reclassified to conform to the current period presentation.

Caterpillar Inc.
Supplemental Data for Results of Operations
For the Three Months Ended June 30, 2023
(Unaudited)
(Millions of dollars)

		Supplemental Consolidating Data		
	Consolidated	Machinery, Energy & Transportation	Financial Products	Consolidating Adjustments
Sales and revenues:				
Sales of Machinery, Energy & Transportation	$ 16,545	$ 16,545	$ —	$ —
Revenues of Financial Products	773	—	955	(182) [1]
Total sales and revenues	17,318	16,545	955	(182)
Operating costs:				
Cost of goods sold	11,065	11,068	—	(3) [2]
Selling, general and administrative expenses	1,528	1,389	143	(4) [2]
Research and development expenses	528	528	—	—
Interest expense of Financial Products	245	—	245	—
Other operating (income) expenses	300	10	310	(20) [2]
Total operating costs	13,666	12,995	698	(27)
Operating profit	3,652	3,550	257	(155)
Interest expense excluding Financial Products	127	127	—	—
Other income (expense)	127	(10)	(18)	155 [3]
Consolidated profit before taxes	3,652	3,413	239	—
Provision (benefit) for income taxes	752	691	61	—
Profit of consolidated companies	2,900	2,722	178	—
Equity in profit (loss) of unconsolidated affiliated companies	24	24	—	—
Profit of consolidated and affiliated companies	2,924	2,746	178	—
Less: Profit (loss) attributable to noncontrolling interests	2	(1)	3	—
Profit [4]	$ 2,922	$ 2,747	$ 175	$ —

1 Elimination of Financial Products' revenues earned from ME&T.
2 Elimination of net expenses recorded by ME&T paid to Financial Products.
3 Elimination of discount recorded by ME&T on receivables sold to Financial Products and of interest earned between ME&T and Financial Products as well as dividends paid by Financial Products to ME&T.
4 Profit attributable to common shareholders.

Caterpillar Inc.
Supplemental Data for Results of Operations
For the Six Months Ended June 30, 2023
(Unaudited)
(Millions of dollars)

		Supplemental Consolidating Data		
	Consolidated	Machinery, Energy & Transportation	Financial Products	Consolidating Adjustments
Sales and revenues:				
Sales of Machinery, Energy & Transportation	$ 31,644	$ 31,644	$ —	$ —
Revenues of Financial Products	1,536	—	1,890	(354) [1]
Total sales and revenues	33,180	31,644	1,890	(354)
Operating costs:				
Cost of goods sold	21,168	21,172	—	(4) [2]
Selling, general and administrative expenses	2,991	2,709	301	(19) [2]
Research and development expenses	1,000	1,000	—	—
Interest expense of Financial Products	462	—	462	—
Other operating (income) expenses	1,176	599	613	(36) [2]
Total operating costs	26,797	25,480	1,376	(59)
Operating profit	6,383	6,164	514	(295)
Interest expense excluding Financial Products	256	256	—	—
Other income (expense)	159	(24)	(37)	220 [3]
Consolidated profit before taxes	6,286	5,884	477	(75)
Provision (benefit) for income taxes	1,460	1,339	121	—
Profit of consolidated companies	4,826	4,545	356	(75)
Equity in profit (loss) of unconsolidated affiliated companies	40	43	—	(3) [4]
Profit of consolidated and affiliated companies	4,866	4,588	356	(78)
Less: Profit (loss) attributable to noncontrolling interests	1	(1)	5	(3) [5]
Profit [6]	$ 4,865	$ 4,589	$ 351	$ (75)

1 Elimination of Financial Products' revenues earned from ME&T.
2 Elimination of net expenses recorded by ME&T paid to Financial Products.
3 Elimination of discount recorded by ME&T on receivables sold to Financial Products and of interest earned between ME&T and Financial Products as well as dividends paid by Financial Products to ME&T.
4 Elimination of equity profit (loss) earned from Financial Products' subsidiaries partially owned by ME&T subsidiaries.
5 Elimination of noncontrolling interest profit (loss) recorded by Financial Products for subsidiaries partially owned by ME&T subsidiaries.
6 Profit attributable to common shareholders.

Caterpillar Inc.
Supplemental Data for Results of Operations
For the Three Months Ended June 30, 2022
(Unaudited)
(Millions of dollars)

	Consolidated	Supplemental Consolidating Data: Machinery, Energy & Transportation	Financial Products	Consolidating Adjustments
Sales and revenues:				
Sales of Machinery, Energy & Transportation	$ 13,539	$ 13,539	$ —	$ —
Revenues of Financial Products	708	—	828	(120) [1]
Total sales and revenues	14,247	13,539	828	(120)
Operating costs:				
Cost of goods sold	9,975	9,978	—	(3) [2]
Selling, general and administrative expenses	1,425	1,261	167	(3) [2]
Research and development expenses	480	480	—	—
Interest expense of Financial Products	120	—	120	—
Other operating (income) expenses	303	16	307	(20) [2]
Total operating costs	12,303	11,735	594	(26)
Operating profit	1,944	1,804	234	(94)
Interest expense excluding Financial Products	108	108	—	—
Other income (expense)	260	180	(14)	94 [3]
Consolidated profit before taxes	2,096	1,876	220	—
Provision (benefit) for income taxes	427	374	53	—
Profit of consolidated companies	1,669	1,502	167	—
Equity in profit (loss) of unconsolidated affiliated companies	4	7	—	(3) [4]
Profit of consolidated and affiliated companies	1,673	1,509	167	(3)
Less: Profit (loss) attributable to noncontrolling interests	—	—	3	(3) [5]
Profit [6]	$ 1,673	$ 1,509	$ 164	$ —

1 Elimination of Financial Products' revenues earned from ME&T.
2 Elimination of net expenses recorded by ME&T paid to Financial Products.
3 Elimination of discount recorded by ME&T on receivables sold to Financial Products and of interest earned between ME&T and Financial Products as well as dividends paid by Financial Products to ME&T.
4 Elimination of equity profit (loss) earned from Financial Products' subsidiaries partially owned by ME&T subsidiaries.
5 Elimination of noncontrolling interest profit (loss) recorded by Financial Products for subsidiaries partially owned by ME&T subsidiaries.
6 Profit attributable to common shareholders.

Caterpillar Inc.
Supplemental Data for Results of Operations
For the Six Months Ended June 30, 2022
(Unaudited)
(Millions of dollars)

		Supplemental Consolidating Data		
	Consolidated	Machinery, Energy & Transportation	Financial Products	Consolidating Adjustments
Sales and revenues:				
Sales of Machinery, Energy & Transportation	$ 26,425	$ 26,425	$ —	$ —
Revenues of Financial Products	1,411	—	1,641	(230) [1]
Total sales and revenues	27,836	26,425	1,641	(230)
Operating costs:				
Cost of goods sold	19,534	19,538	—	(4) [2]
Selling, general and administrative expenses	2,771	2,443	339	(11) [2]
Research and development expenses	937	937	—	—
Interest expense of Financial Products	226	—	226	—
Other operating (income) expenses	569	(12)	621	(40) [2]
Total operating costs	24,037	22,906	1,186	(55)
Operating profit	3,799	3,519	455	(175)
Interest expense excluding Financial Products	217	217	—	—
Other income (expense)	513	337	1	175 [3]
Consolidated profit before taxes	4,095	3,639	456	—
Provision (benefit) for income taxes	896	786	110	—
Profit of consolidated companies	3,199	2,853	346	—
Equity in profit (loss) of unconsolidated affiliated companies	11	15	—	(4) [4]
Profit of consolidated and affiliated companies	3,210	2,868	346	(4)
Less: Profit (loss) attributable to noncontrolling interests	—	—	4	(4) [5]
Profit [6]	$ 3,210	$ 2,868	$ 342	$ —

1 Elimination of Financial Products' revenues earned from ME&T.
2 Elimination of net expenses recorded by ME&T paid to Financial Products.
3 Elimination of discount recorded by ME&T on receivables sold to Financial Products and of interest earned between ME&T and Financial Products as well as dividends paid by Financial Products to ME&T.
4 Elimination of equity profit (loss) earned from Financial Products' subsidiaries partially owned by ME&T subsidiaries.
5 Elimination of noncontrolling interest profit (loss) recorded by Financial Products for subsidiaries partially owned by ME&T subsidiaries.
6 Profit attributable to common shareholders.

Caterpillar Inc.
Supplemental Data for Financial Position
At June 30, 2023
(Unaudited)
(Millions of dollars)

		Supplemental Consolidating Data		
	Consolidated	Machinery, Energy & Transportation	Financial Products	Consolidating Adjustments
Assets				
Current assets:				
Cash and cash equivalents	$ 7,387	$ 6,323	$ 1,064	$ —
Receivables – trade and other	9,416	3,467	591	5,358 [1,2]
Receivables – finance	9,288	—	14,850	(5,562) [2]
Prepaid expenses and other current assets	3,163	2,936	308	(81) [3]
Inventories	17,746	17,746	—	—
Total current assets	47,000	30,472	16,813	(285)
Property, plant and equipment – net	12,124	8,102	4,022	—
Long-term receivables – trade and other	1,161	523	155	483 [1,2]
Long-term receivables – finance	12,022	—	12,544	(522) [2]
Noncurrent deferred and refundable income taxes	2,607	3,122	116	(631) [4]
Intangible assets	630	630	—	—
Goodwill	5,293	5,293	—	—
Other assets	4,590	3,802	1,966	(1,178) [5]
Total assets	$ 85,427	$ 51,944	$ 35,616	$ (2,133)
Liabilities				
Current liabilities:				
Short-term borrowings	$ 5,548	$ —	$ 5,548	$ —
Accounts payable	8,443	8,364	298	(219) [6,7]
Accrued expenses	4,493	4,003	490	— [7]
Accrued wages, salaries and employee benefits	1,755	1,718	37	—
Customer advances	2,137	2,121	1	15 [7]
Dividends payable	663	663	—	—
Other current liabilities	3,109	2,484	729	(104) [4,8]
Long-term debt due within one year	9,166	1,043	8,123	—
Total current liabilities	35,314	20,396	15,226	(308)
Long-term debt due after one year	22,985	8,574	14,450	(39) [9]
Liability for postemployment benefits	4,084	4,084	—	—
Other liabilities	4,788	3,855	1,617	(684) [4]
Total liabilities	67,171	36,909	31,293	(1,031)
Commitments and contingencies				
Shareholders' equity				
Common stock	6,478	6,478	905	(905) [10]
Treasury stock	(33,391)	(33,391)	—	—
Profit employed in the business	47,094	42,739	4,344	11 [10]
Accumulated other comprehensive income (loss)	(1,946)	(815)	(1,131)	—
Noncontrolling interests	21	24	205	(208) [10]
Total shareholders' equity	18,256	15,035	4,323	(1,102)
Total liabilities and shareholders' equity	$ 85,427	$ 51,944	$ 35,616	$ (2,133)

[1] Elimination of receivables between ME&T and Financial Products.
[2] Reclassification of ME&T's trade receivables purchased by Financial Products and Financial Products' wholesale inventory receivables.
[3] Elimination of ME&T's insurance premiums that are prepaid to Financial Products.
[4] Reclassification reflecting required netting of deferred tax assets/liabilities by taxing jurisdiction.
[5] Elimination of other intercompany assets between ME&T and Financial Products.
[6] Elimination of payables between ME&T and Financial Products.
[7] Reclassification of Financial Products' payables to accrued expenses or customer advances.
[8] Elimination of prepaid insurance in Financial Products' other liabilities.
[9] Elimination of debt between ME&T and Financial Products.
[10] Eliminations associated with ME&T's investments in Financial Products' subsidiaries.

Caterpillar Inc.
Supplemental Data for Financial Position
At December 31, 2022
(Unaudited)
(Millions of dollars)

	Consolidated	Supplemental Consolidating Data: Machinery, Energy & Transportation	Supplemental Consolidating Data: Financial Products	Supplemental Consolidating Data: Consolidating Adjustments
Assets				
Current assets:				
Cash and cash equivalents	$ 7,004	$ 6,042	$ 962	$ —
Receivables – trade and other	8,856	3,710	519	4,627 [1,2]
Receivables – finance	9,013	—	13,902	(4,889) [2]
Prepaid expenses and other current assets	2,642	2,488	290	(136) [3]
Inventories	16,270	16,270	—	—
Total current assets	43,785	28,510	15,673	(398)
Property, plant and equipment – net	12,028	8,186	3,842	—
Long-term receivables – trade and other	1,265	418	339	508 [1,2]
Long-term receivables – finance	12,013	—	12,552	(539) [2]
Noncurrent deferred and refundable income taxes	2,213	2,755	115	(657) [4]
Intangible assets	758	758	—	—
Goodwill	5,288	5,288	—	—
Other assets	4,593	3,882	1,892	(1,181) [5]
Total assets	$ 81,943	$ 49,797	$ 34,413	$ (2,267)
Liabilities				
Current liabilities:				
Short-term borrowings	$ 5,957	$ 3	$ 5,954	$ —
Accounts payable	8,689	8,657	294	(262) [6]
Accrued expenses	4,080	3,687	393	—
Accrued wages, salaries and employee benefits	2,313	2,264	49	—
Customer advances	1,860	1,860	—	—
Dividends payable	620	620	—	—
Other current liabilities	2,690	2,215	635	(160) [4,7]
Long-term debt due within one year	5,322	120	5,202	—
Total current liabilities	31,531	19,426	12,527	(422)
Long-term debt due after one year	25,714	9,529	16,216	(31) [8]
Liability for postemployment benefits	4,203	4,203	—	—
Other liabilities	4,604	3,677	1,638	(711) [4]
Total liabilities	66,052	36,835	30,381	(1,164)
Commitments and contingencies				
Shareholders' equity				
Common stock	6,560	6,560	905	(905) [9]
Treasury stock	(31,748)	(31,748)	—	—
Profit employed in the business	43,514	39,435	4,068	11 [9]
Accumulated other comprehensive income (loss)	(2,457)	(1,310)	(1,147)	—
Noncontrolling interests	22	25	206	(209) [9]
Total shareholders' equity	15,891	12,962	4,032	(1,103)
Total liabilities and shareholders' equity	$ 81,943	$ 49,797	$ 34,413	$ (2,267)

[1] Elimination of receivables between ME&T and Financial Products.
[2] Reclassification of ME&T's trade receivables purchased by Financial Products and Financial Products' wholesale inventory receivables.
[3] Elimination of ME&T's insurance premiums that are prepaid to Financial Products.
[4] Reclassification reflecting required netting of deferred tax assets/liabilities by taxing jurisdiction.
[5] Elimination of other intercompany assets between ME&T and Financial Products.
[6] Elimination of payables between ME&T and Financial Products.
[7] Elimination of prepaid insurance in Financial Products' other liabilities.
[8] Elimination of debt between ME&T and Financial Products.
[9] Eliminations associated with ME&T's investments in Financial Products' subsidiaries.

Caterpillar Inc.
Supplemental Data for Cash Flow
For the Six Months Ended June 30, 2023
(Unaudited)
(Millions of dollars)

		Supplemental Consolidating Data		
	Consolidated	Machinery, Energy & Transportation	Financial Products	Consolidating Adjustments
Cash flow from operating activities:				
Profit of consolidated and affiliated companies	$ 4,866	$ 4,588	$ 356	$ (78) [1,5]
Adjustments for non-cash items:				
Depreciation and amortization	1,074	690	384	—
Provision (benefit) for deferred income taxes	(355)	(338)	(17)	—
Loss on divestiture	572	572	—	—
Other	106	198	(368)	276 [2]
Changes in assets and liabilities, net of acquisitions and divestitures:				
Receivables – trade and other	(465)	132	57	(654) [2,3]
Inventories	(1,560)	(1,558)	—	(2) [2]
Accounts payable	34	(28)	2	60 [2]
Accrued expenses	381	318	63	—
Accrued wages, salaries and employee benefits	(562)	(550)	(12)	—
Customer advances	284	283	1	—
Other assets – net	81	149	5	(73) [2]
Other liabilities – net	366	211	71	84 [2]
Net cash provided by (used for) operating activities	4,822	4,667	542	(387)
Cash flow from investing activities:				
Capital expenditures – excluding equipment leased to others	(683)	(678)	(11)	6 [2]
Expenditures for equipment leased to others	(774)	(7)	(772)	5 [2]
Proceeds from disposals of leased assets and property, plant and equipment	368	27	350	(9) [2]
Additions to finance receivables	(6,973)	—	(7,957)	984 [3]
Collections of finance receivables	6,759	—	7,516	(757) [3]
Net intercompany purchased receivables	—	—	(83)	83 [3]
Proceeds from sale of finance receivables	29	—	29	—
Net intercompany borrowings	—	—	4	(4) [4]
Investments and acquisitions (net of cash acquired)	(20)	(20)	—	—
Proceeds from sale of businesses and investments (net of cash sold)	(14)	(14)	—	—
Proceeds from sale of securities	463	332	131	—
Investments in securities	(1,078)	(866)	(212)	—
Other – net	41	41	—	—
Net cash provided by (used for) investing activities	(1,882)	(1,185)	(1,005)	308
Cash flow from financing activities:				
Dividends paid	(1,238)	(1,238)	(75)	75 [5]
Common stock issued, including treasury shares reissued	(22)	(22)	—	—
Common shares repurchased	(1,829)	(1,829)	—	—
Net intercompany borrowings	—	(4)	—	4 [4]
Proceeds from debt issued (original maturities greater than three months)	3,299	—	3,299	—
Payments on debt (original maturities greater than three months)	(2,303)	(95)	(2,208)	—
Short-term borrowings – net (original maturities three months or less)	(406)	(3)	(403)	—
Net cash provided by (used for) financing activities	(2,499)	(3,191)	613	79
Effect of exchange rate changes on cash	(60)	(12)	(48)	—
Increase (decrease) in cash, cash equivalents and restricted cash	381	279	102	—
Cash, cash equivalents and restricted cash at beginning of period	7,013	6,049	964	—
Cash, cash equivalents and restricted cash at end of period	$ 7,394	$ 6,328	$ 1,066	$ —

[1] Elimination of equity profit earned from Financial Products' subsidiaries partially owned by ME&T subsidiaries.
[2] Elimination of non-cash adjustments and changes in assets and liabilities related to consolidated reporting.
[3] Reclassification of Financial Products' cash flow activity from investing to operating for receivables that arose from the sale of inventory.
[4] Elimination of net proceeds and payments to/from ME&T and Financial Products.
[5] Elimination of dividend activity between Financial Products and ME&T.

Caterpillar Inc.
Supplemental Data for Cash Flow
For the Six Months Ended June 30, 2022
(Unaudited)
(Millions of dollars)

		Supplemental Consolidating Data		
	Consolidated	Machinery, Energy & Transportation	Financial Products	Consolidating Adjustments
Cash flow from operating activities:				
Profit of consolidated and affiliated companies	$ 3,210	$ 2,868	$ 346	$ (4) [1]
Adjustments for non-cash items:				
Depreciation and amortization	1,110	715	395	—
Provision (benefit) for deferred income taxes	(283)	(232)	(51)	—
Other	49	(54)	(93)	196 [2]
Changes in assets and liabilities, net of acquisitions and divestitures:				
Receivables – trade and other	283	(32)	12	303 [2,3]
Inventories	(2,003)	(2,003)	—	— [2]
Accounts payable	427	396	11	20 [2]
Accrued expenses	(80)	(89)	9	—
Accrued wages, salaries and employee benefits	(445)	(428)	(17)	—
Customer advances	514	515	(1)	—
Other assets – net	86	(44)	(25)	155 [2]
Other liabilities – net	(322)	(323)	149	(148) [2]
Net cash provided by (used for) operating activities	2,546	1,289	735	522
Cash flow from investing activities:				
Capital expenditures – excluding equipment leased to others	(586)	(583)	(5)	2 [2]
Expenditures for equipment leased to others	(688)	(11)	(683)	6 [2]
Proceeds from disposals of leased assets and property, plant and equipment	468	43	433	(8) [2]
Additions to finance receivables	(6,705)	—	(7,175)	470 [3]
Collections of finance receivables	6,519	—	6,896	(377) [3]
Net intercompany purchased receivables	—	—	615	(615) [3]
Proceeds from sale of finance receivables	21	—	21	—
Net intercompany borrowings	—	—	3	(3) [4]
Investments and acquisitions (net of cash acquired)	(36)	(36)	—	—
Proceeds from sale of businesses and investments (net of cash sold)	1	1	—	—
Proceeds from sale of securities	1,204	1,014	190	—
Investments in securities	(2,118)	(1,724)	(394)	—
Other – net	32	58	(26)	—
Net cash provided by (used for) investing activities	(1,888)	(1,238)	(125)	(525)
Cash flow from financing activities:				
Dividends paid	(1,187)	(1,187)	—	—
Common stock issued, including treasury shares reissued	4	4	—	—
Common shares repurchased	(1,924)	(1,924)	—	—
Net intercompany borrowings	—	(3)	—	3 [4]
Proceeds from debt issued (original maturities greater than three months)	4,015	—	4,015	—
Payments on debt (original maturities greater than three months)	(4,246)	(13)	(4,233)	—
Short-term borrowings – net (original maturities three months or less)	(553)	(141)	(412)	—
Net cash provided by (used for) financing activities	(3,891)	(3,264)	(630)	3
Effect of exchange rate changes on cash	(7)	—	(7)	—
Increase (decrease) in cash, cash equivalents and restricted cash	(3,240)	(3,213)	(27)	—
Cash, cash equivalents and restricted cash at beginning of period	9,263	8,433	830	—
Cash, cash equivalents and restricted cash at end of period	$ 6,023	$ 5,220	$ 803	$ —

[1] Elimination of equity profit earned from Financial Products' subsidiaries partially owned by ME&T subsidiaries.
[2] Elimination of non-cash adjustments and changes in assets and liabilities related to consolidated reporting.
[3] Reclassification of Financial Products' cash flow activity from investing to operating for receivables that arose from the sale of inventory.
[4] Elimination of net proceeds and payments to/from ME&T and Financial Products.

Forward-looking Statements

Certain statements in this Form 10-Q relate to future events and expectations and are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as “believe,” “estimate,” “will be,” “will,” “would,” “expect,” “anticipate,” “plan,” “forecast,” “target,” “guide,” “project,” “intend,” “could,” “should” or other similar words or expressions often identify forward-looking statements. All statements other than statements of historical fact are forward-looking statements, including, without limitation, statements regarding our outlook, projections, forecasts or trend descriptions. These statements do not guarantee future performance and speak only as of the date they are made, and we do not undertake to update our forward-looking statements.

Caterpillar’s actual results may differ materially from those described or implied in our forward-looking statements based on a number of factors, including, but not limited to: (i) global and regional economic conditions and economic conditions in the industries we serve; (ii) commodity price changes, material price increases, fluctuations in demand for our products or significant shortages of material; (iii) government monetary or fiscal policies; (iv) political and economic risks, commercial instability and events beyond our control in the countries in which we operate; (v) international trade policies and their impact on demand for our products and our competitive position, including the imposition of new tariffs or changes in existing tariff rates; (vi) our ability to develop, produce and market quality products that meet our customers’ needs; (vii) the impact of the highly competitive environment in which we operate on our sales and pricing; (viii) information technology security threats and computer crime; (ix) inventory management decisions and sourcing practices of our dealers and our OEM customers; (x) a failure to realize, or a delay in realizing, all of the anticipated benefits of our acquisitions, joint ventures or divestitures; (xi) union disputes or other employee relations issues; (xii) adverse effects of unexpected events; (xiii) disruptions or volatility in global financial markets limiting our sources of liquidity or the liquidity of our customers, dealers and suppliers; (xiv) failure to maintain our credit ratings and potential resulting increases to our cost of borrowing and adverse effects on our cost of funds, liquidity, competitive position and access to capital markets; (xv) our Financial Products segment’s risks associated with the financial services industry; (xvi) changes in interest rates or market liquidity conditions; (xvii) an increase in delinquencies, repossessions or net losses of Cat Financial’s customers; (xviii) currency fluctuations; (xix) our or Cat Financial’s compliance with financial and other restrictive covenants in debt agreements; (xx) increased pension plan funding obligations; (xxi) alleged or actual violations of trade or anti-corruption laws and regulations; (xxii) additional tax expense or exposure, including the impact of U.S. tax reform; (xxiii) significant legal proceedings, claims, lawsuits or government investigations; (xxiv) new regulations or changes in financial services regulations; (xxv) compliance with environmental laws and regulations; (xxvi) catastrophic events, including global pandemics such as the COVID-19 pandemic; and (xxvii) other factors described in more detail under the section entitled "Part I - Item 1A. Risk Factors" of Caterpillar's Annual Report on Form 10-K for the fiscal year ended December 31, 2022, as such factors may be updated from time to time in Caterpillar's periodic filings with the Securities and Exchange Commission.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

The information required by this Item is incorporated by reference from Note 5 – “Derivative financial instruments and risk management” included in Part I, Item 1 and Management’s Discussion and Analysis included in Part I, Item 2 of this Form 10-Q.

Item 4. Controls and Procedures

Evaluation of disclosure controls and procedures

An evaluation was performed under the supervision and with the participation of the company’s management, including the Chief Executive Officer (CEO) and Chief Financial Officer (CFO), of the effectiveness of the design and operation of the company’s disclosure controls and procedures, as that term is defined in Rule 13a-15(e) under the Securities Exchange Act of 1934, as amended, as of the end of the period covered by this quarterly report. Based on that evaluation, the CEO and CFO concluded that the company’s disclosure controls and procedures were effective as of the end of the period covered by this quarterly report.

Changes in internal control over financial reporting

During the second quarter of 2023, there has been no change in the company’s internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the company’s internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

The information required by this Item is incorporated by reference from Note 14 – "Environmental and legal matters" included in Part I, Item 1 of this Form 10-Q.

Item 1A. Risk Factors

There have been no material changes to the risk factors we previously disclosed in our Annual Report on Form 10-K for the year ended December 31, 2022.

Item 2. Unregistered Sales of Equity Securities, Use of Proceeds, and Issuer Purchases of Equity Securities

Issuer Purchases of Equity Securities

Period	Total Number of Shares Purchased[2,3]	Average Price Paid per Share[2,3]	Total Number of Shares Purchased as Part of Publicly Announced Program	Approximate Dollar Value of Shares that May Yet be Purchased under the Program (in billions)[1]
April 1-30, 2023	1,049,531	$ 220.26	1,049,531	$ 12.168
May 1-31, 2023	4,437,549	$ 222.58	4,437,549	$ 11.062
June 1-30, 2023	427,328	$ 213.52	427,328	$ 10.970
Total	5,914,408	$ 221.51	5,914,408	

[1] In May 2022, the Board approved a share repurchase authorization (the 2022 Authorization) of up to $15.0 billion of Caterpillar common stock effective August 1, 2022, with no expiration. As of June 30, 2023, $11.0 billion remained available under the 2022 Authorization.

[2] During the second quarter of 2023, we entered into an accelerated share repurchase agreement ("ASR") with a third-party financial institution to purchase $750 million of our common stock. In May 2023, upon payment of the $750 million to the financial institution, we received 2.8 million shares. In July 2023, upon final settlement of the ASR, we received an additional 0.5 million shares. In total, we repurchased 3.3 million shares under this ASR at an average price per share of $228.66.

[3] In April, May and June of 2023, we repurchased 1.0 million, 1.7 million and 0.4 million shares, respectively, for an aggregate of $679 million in open market transactions at an average price per share of $220.26, $212.56 and $213.52, respectively.

Non-U.S. Employee Stock Purchase Plans

As of June 30, 2023, we had 28 employee stock purchase plans (the "EIP Plans") that are administered outside the United States for our non-U.S. employees, which had approximately 14,000 active participants in the aggregate. During the second quarter of 2023, approximately 84,000 shares of Caterpillar common stock were purchased by the EIP Plans pursuant to the terms of such plans.

Item 6. Exhibits

10.1	Form of Restricted Stock Unit Award pursuant to the 2023 Long-Term Incentive Plan*
10.2	Form of Restricted Stock Unit Award for Directors pursuant to the 2023 Long-Term Incentive Plan*
10.3	Form of Nonqualified Stock Options Award pursuant to the 2023 Long-Term Incentive Plan*
10.4	Form of Performance-Based Restricted Stock Unit Award pursuant to the 2023 Long-Term Incentive Plan*
10.5	Form of Nonqualified Stock Options Award pursuant to the 2023 Long-Term Incentive Plan (China Payroll Addendum)*
10.6	Caterpillar Inc. 2023 Long-Term Incentive Plan (incorporated by reference from Exhibit 10.1 to the Company's Current Report on Form 8-K filed June 20, 2023)*
31.1	Certification of Chief Executive Officer of Caterpillar Inc., as required pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2	Certification of Chief Financial Officer of Caterpillar Inc., as required pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32	Certification of Chief Executive Officer of Caterpillar Inc. and Chief Financial Officer of Caterpillar Inc., as required pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS	Inline XBRL Instance Document (the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document)
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive File (embedded within the Inline XBRL document and included in Exhibit 101)

*Management contracts and compensatory plans and arrangements required to be filed as exhibits pursuant to Item 6 of this report.

The agreements and other documents filed as exhibits to this report are not intended to provide factual information or other disclosure other than with respect to the terms of the agreements or other documents themselves, and you should not rely on them for that purpose. In particular, any representations and warranties made by us in these agreements or other documents were made solely within the specific context of the relevant agreement or document and may not describe the actual state of affairs as of the date they were made or at any other time.

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.

CATERPILLAR INC.

August 2, 2023	*/s/ D. James Umpleby III* D. James Umpleby III	Chairman of the Board and Chief Executive Officer
August 2, 2023	*/s/ Andrew R.J. Bonfield* Andrew R.J. Bonfield	Chief Financial Officer
August 2, 2023	*/s/ Derek Owens* Derek Owens	Senior Vice President and General Counsel
August 2, 2023	*/s/ William E. Schaupp* William E. Schaupp	Vice President and Chief Accounting Officer

Caterpillar Inc.
2023 Long-Term Incentive Plan
Restricted Stock Unit Award Notice

%%FIRST_NAME_MIDDLE_NAME_LAST_NAME%-%

Grant Date: %%OPTION_DATE,'Month DD, YYYY'%-%
Grant Number: %%OPTION_NUMBER%-%
Units Granted: %%TOTAL_SHARES_GRANTED,'999,999,999'%-%

The Board of Directors of Caterpillar Inc. (the "Company") has granted you the number of restricted stock units ("RSUs") specified above on the date specified above (the "Grant Date") pursuant to, and subject to the restrictions, terms and conditions set forth in, the Caterpillar Inc. 2023 Long-Term Incentive Plan (the "Plan"). This Award Notice and the Plan specify the material terms and provisions applicable to such restricted stock unit award (the "RSU Award"). Capitalized terms not defined herein shall have the meanings specified in the Plan.

Vesting
Except to the extent the RSUs are forfeited upon your termination of employment as provided below, the RSUs will become vested in the amounts and on the vesting date(s) specified below (each such date, a "Vesting Date").

Vesting Date	Units Vesting
%%VEST_DATE_PERIOD1,'Month DD, YYYY'%-%	%%SHARES_PERIOD1%-%
%%VEST_DATE_PERIOD2,'Month DD, YYYY'%-%	%%SHARES_PERIOD2%-%
%%VEST_DATE_PERIOD3,'Month DD, YYYY'%-%	%%SHARES_PERIOD3%-%

As soon as administratively practicable, but not later than 60 days, after the applicable Vesting Date, the Company shall issue or deliver to you, subject to the conditions of this Award Notice, unrestricted shares of Common Stock equal to the number of RSUs that become vested, rounded up or down to the nearest whole number, less any shares withheld to satisfy any applicable income and payroll tax withholding requirements.

If you terminate employment prior to the date the RSUs have become fully vested for any reason other than Long-Service Separation, death or in connection with a Change in Control (as described more fully below), the unvested RSUs will be forfeited. Your RSU Award is also subject to certain additional forfeiture conditions set forth in the Plan and this Award Notice.

Voting Rights
During the period between the Grant Date and the date any RSUs become vested and the shares subject to such RSUs are issued or delivered to you (the "Restriction Period"), you are not entitled to any voting rights with respect to such RSUs. From and after the date shares are actually issued or delivered, you then will have full voting rights with respect to those shares.

Dividend Equivalents; Dividends
On each date that a cash dividend is paid to holders of Common Stock, an amount equal to the cash dividend that is paid on each share of Common Stock, multiplied by the number of RSUs that remain unvested and outstanding as of the dividend payment date (the "Dividend Equivalent Amount") shall be credited for your benefit. Unless otherwise determined by the Board or Committee in its discretion, the aggregate Dividend Equivalent Amount, if any, credited to you shall be converted into an additional number of RSUs determined by dividing the Dividend Equivalent Amount by the Fair Market Value of a share of Common Stock on the dividend payment date (the "Dividend Equivalent RSUs"). The Dividend Equivalent RSUs, if any, will vest on the same Vesting Date corresponding to the underlying RSUs with respect to which the Dividend Equivalent RSUs were credited, and will otherwise be subject to the same conditions applicable to the underlying RSUs, including, without limitation, the provisions governing time and form of settlement; *provided however, that* Dividend Equivalent RSUs will not accrue on Dividend Equivalent RSUs. Unless expressly provided otherwise, as used elsewhere in this Agreement "RSUs" shall include any Dividend Equivalent RSUs that have been credited to you. From and after the date

shares of Common Stock are actually issued or delivered upon settlement of the RSUs, you then will have dividend rights with respect to those shares.

Termination of Employment
Your termination of employment with the Company prior to the date the RSUs become fully vested will impact the unvested RSUs as follows:

- **Long-Service Separation**
  If your employment with the Company terminates at least six months after the Grant Date by reason of Long-Service Separation (as defined below), your unvested RSUs will continue to become vested as of each Vesting Date as though your employment with the Company had continued through the last scheduled Vesting Date, and shares of Common Stock, less any shares withheld to satisfy any applicable income and payroll tax withholding requirements, will be issued or delivered to you as soon as administratively practicable, but not later than 60 days, following the applicable Vesting Date. For purposes of this RSU Award, "Long-Service Separation" means termination of employment for any reason other than for Cause after attainment of age 55 with 5 or more years of continuous service with the Company, as determined by the Company in its sole discretion.
- **Death**
  If your employment with the Company terminates by reason of death, your unvested RSUs will become fully vested and shares of Common Stock, less any shares withheld to satisfy any applicable income and payroll tax withholding requirements, will be issued or delivered to your beneficiary or your estate (as applicable), as soon as administratively practicable, but not later than 2½ months, following the date of your death.
- **Change in Control**
  In the event of a Change in Control prior to the end of the Restriction Period pursuant to which your RSU Award is effectively continued, assumed or replaced by the surviving or acquiring corporation in such Change in Control (with appropriate adjustments to the number and kind of shares, in each case, that preserve the material terms and conditions of the outstanding RSU Award as in effect immediately prior to the Change in Control) and your employment is terminated either by the Company or its successor without Cause or by you for Good Reason, as defined in the Plan, within the 24–month period commencing on the date of the Change in Control, your unvested RSUs will immediately become fully vested and shares of Common Stock, less any shares withheld to satisfy any applicable income and payroll tax withholding requirements, will be issued or delivered to you as soon as administratively practicable, but not later than 60 days, following (1) the applicable Vesting Date; or (2) the date which is six months after the date of your termination of employment, if such date is earlier than the applicable Vesting Date; provided that if you are or will become eligible for Long-Service Separation during the Restriction Period and the Change in Control is not a "change in control event," within the meaning of Section 409A of the Internal Revenue Code of 1986, as amended ("Code Section 409A"), then the unvested RSUs will immediately become fully vested, as provided above, but the shares of Common Stock, less any shares withheld to satisfy any applicable income and payroll tax withholding requirements, will be issued or delivered to you as soon as administratively practicable, but not later than 60 days following the applicable Vesting Date. In the event of a vesting acceleration event upon a Change in Control pursuant to Section 4.9(a)(ii) or (iii) of the Plan, the shares of Common Stock (or cash amount, as applicable), less any shares (or cash amount, as applicable) withheld to satisfy any applicable income and payroll tax withholding requirements, will be issued or delivered to you as soon as administratively practicable, but not later than 60 days, following the date of the Change in Control, provided that if the RSUs are non-qualified deferred compensation subject to Code Section 409A and the Change in Control is not a "change in control event" within the meaning of U.S. Treas. Reg. §1.409A-3(i)(5), the RSUs will vest in accordance with Section 4.9(a)(ii) of the Plan, but the vested portion of the RSUs shall instead be settled in cash (in an amount calculated consistent with the methodology described in Section 4.9(a)(iii)), less any amount withheld to satisfy any applicable income and payroll tax withholding requirements, as soon as administratively practicable, but not later than 60 days following the applicable Vesting Date.
- **Other**

If your employment with the Company terminates prior to the date the RSUs become fully vested for any reason other than Long-Service Separation, death or in connection with a Change in Control, all unvested RSUs subject to this RSU Award will lapse and shall be immediately forfeited.

For purposes of this RSU Award, references to employment with the Company shall also mean employment with a Subsidiary. The extent to which you shall be considered employed during any periods during which you are on a leave of absence shall be determined in accordance with Company policy.

Disability

Upon a determination by the Company's head of Total Rewards that you have a Disability (as defined below), your unvested RSUs will become fully vested and shares of Common Stock, less any shares withheld to satisfy any applicable income and payroll tax withholding requirements, will be issued or delivered to you as soon as administratively practicable, but not later than 60 days, following the date of such determination. For purposes of this RSU Award, "Disability" means that you are unable to engage in any substantial gainful business activity by reason of any medically determinable physical or mental impairment that can be expected to result in death, or which has lasted or can be expected to last for a continuous period of not less than 12 months, as determined by the Company's head of Total Rewards, based upon medical evidence.

Transferability of Award

Subject to certain exceptions set forth in the Plan, the RSU Award may not be assigned, transferred, pledged or hypothecated in any way. The RSU Award is not subject to execution, attachment or similar process. Any attempt at such, contrary to the provisions of the Plan, will be null and void and without effect. Note that once RSUs vest and shares of Common Stock are actually issued or delivered, you will have the ability to transfer those shares.

Designation of Beneficiary

You may designate a beneficiary (or beneficiaries) to whom any shares of Common Stock that are issued to your stock plan account with the Company's stock plan administrator upon the vesting of the RSUs will be paid upon your death. If you do not designate a beneficiary, such shares will be paid to your estate or to such other payee determined in accordance with procedures established by the Company's stock plan administrator.

Administration of the Plan

The RSU Award shall at all times be subject to the terms and provisions of the Plan and the Plan shall be administered in accordance with the terms of, and as provided in, the Plan. In the event of conflict between the terms and provisions of this Award Notice and the terms and provisions of the Plan, the provisions of the Plan shall control.

Code Section 409A

It is intended that this Award Notice and the administration of the RSU Award comply with Section 409A of the Internal Revenue Code of 1986, as amended, and the Treasury Regulations promulgated, and other official guidance issued thereunder ("Code Section 409A"), to the extent applicable. The Plan and this Award Notice shall be interpreted and construed on a basis consistent with such intent. Notwithstanding anything contained herein to the contrary, no shares may be issued or delivered unless in compliance with Code Section 409A to the extent that Code Section 409A applies. To the extent this Award Notice provides for the RSU Award to be settled by reference to your termination of employment, your employment shall be deemed to have terminated upon your "separation from service," within the meaning of Code Section 409A. The Committee reserves the right (including the right to delegate such right) to unilaterally amend this Award Notice (and thus the terms of the RSU Award) without your consent solely in order to maintain an exclusion from the application of, or to maintain compliance with, Code Section 409A. Your acceptance of this RSU Award constitutes acknowledgement and consent to such rights of the Committee. This provision does not create an obligation on the part of the Company to modify the terms of this Award Notice or the Plan and does not guarantee that this RSU Award or the delivery of shares of Common Stock upon settlement of the RSU Award will not be subject to taxes, interest and penalties or any other adverse tax consequences under Code Section 409A. Nothing in this Award Notice shall provide a basis for any person to take any action against the Company or any of its Subsidiaries or affiliates based on matters covered by Code Section 409A, including the tax treatment of any amounts paid under this Award Notice, and neither the Company nor any of its Subsidiaries or affiliates will have any liability under any circumstances to you or any other party if the RSU Award, the delivery of shares of Common Stock upon vesting/settlement of the RSU Award or other payment or tax event hereunder that is intended to be exempt from, or compliant with, Code Section 409A, is not so exempt or compliant or for any action taken by the Committee with respect thereto.

Tax Impact

Please refer to the Plan prospectus and support materials for a general description of the tax consequences of an RSU Award. You may also wish to consult with your personal tax advisor regarding how the RSU Award impacts your individual tax situation. Nothing contained in this Award Notice or in the Plan prospectus shall be construed as a guarantee of any particular tax effect for any benefits or amounts deferred or paid pursuant to this Award Notice.

Withholding

The distribution of shares of Common Stock in connection with the vesting of the RSU Award is a taxable event in many taxing jurisdictions. In some countries, including the United States, the Company is required to withhold taxes upon the taxable event. To satisfy this withholding obligation, you hereby authorize the Company to withhold that number of shares that would satisfy the withholding obligation from the shares otherwise to be issued or delivered to you under the RSU Award. The following conditions apply to such withholding: (a) the value of the shares of Common Stock withheld must equal the minimum withholding obligation; and (b) the value of the shares of Common Stock withheld shall be the Fair Market Value determined as of the date the RSUs become vested. For this purpose and for all purposes of this RSU Award, Fair Market Value shall mean the mean between the high and low prices at which a share of Common Stock of the Company is traded on the New York Stock Exchange. Alternatively, by your acceptance of this RSU Award, you hereby authorize the Company (or your employer), or their respective agents, to select any of the following methods to satisfy withholding obligations upon a taxable event applicable to your RSU Award (i) a cash payment by you to the Company, (ii) your delivery (either actual delivery or by attestation procedures established by the Company) to the Company of previously issued whole shares of Common Stock having an aggregate Fair Market Value equal to the amount necessary to satisfy any such obligation, (iii) withholding from proceeds from the sale of shares of Common Stock acquired upon vesting of the RSU Award through a mandatory sale arranged by the Company (on your behalf pursuant to this authorization), or (iv) any other method of withholding determined by the Company and permitted by applicable laws and the Plan; provided, however, that if you are subject to Section 16 of the Exchange Act, you shall be permitted to select among the methods set forth in (i) through (iv) above in lieu of the net share withholding method set forth in the immediately preceding sentence. Notwithstanding the foregoing, the net share withholding method described above will not be used for social security, FICA or other employment tax-related withholding obligations that become payable in a year prior to the year that shares are issued or delivered to you and, instead, you authorize the Company (or your employer) to use a method determined appropriate by the Company and permitted by applicable laws and the Plan.

Compliance with Securities Laws

The RSU Award is subject to the condition that if the listing, registration or qualification of the shares of Common Stock subject to the RSU Award upon any securities exchange or under any law, or the consent or approval of any governmental body, or the taking of any other action is necessary or desirable as a condition of, or in connection with, the issuance or delivery of shares hereunder, the shares of Common Stock subject to the RSU Award shall not be issued or delivered, in whole or in part, unless such listing, registration, qualification, consent, approval or other action shall have been effected or obtained, free of any conditions not acceptable to the Company. The Company agrees to use reasonable efforts to effect or obtain any such listing, registration, qualification, consent, approval or other action.

Adjustment of Shares

Provisions are made within the Plan covering the effect of stock dividends, stock splits, changes in par value, changes in kind of stock, sale, merger, recapitalization, reorganization, etc.

Awards Subject to Forfeiture, Clawback and Setoff

The RSU Award is subject to certain forfeiture conditions set forth in the Plan, which in the event such conditions are determined to have occurred, may result in immediate forfeiture and cancellation of your outstanding RSU

Award or an obligation to repay the Company the total amount of award gain realized upon settlement of your RSU Award. Also, the Company generally may deduct from and set off against any amounts the Company owes to you, including amounts payable in connection with this RSU Award, such amounts you may owe to the Company.

Effect on Other Benefits
The RSU Award is not intended to and shall not impact the coverage of or the amount of any other employee benefit plans in which you participate that are sponsored by the Company or any of its Subsidiaries or affiliates.

Imposition of Other Requirements
The Company reserves the right to impose other requirements on your participation in the Plan, on the RSUs and on any shares of Common Stock acquired under the Plan, to the extent the Company determines it is necessary or advisable for legal or administrative reasons, and to require you to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing.

Award Confers No Rights to Continued Employment
In no event shall the granting of the RSU Award or its acceptance by you, or any provision of the Award Notice or the Plan, give or be deemed to give you any right to continued employment by the Company, any Subsidiary or any affiliate of the Company or affect in any manner the right of the Company, any Subsidiary or any affiliate of the Company to terminate your employment at any time.

Decisions of Board or Committee
The Board or the Committee shall have the right to resolve all questions which may arise in connection with the RSU Award. Any interpretation, determination or other action made or taken by the Board or the Committee regarding the Plan or this RSU Award shall be final, binding and conclusive.

Successors
This Award Notice shall be binding upon and inure to the benefit of any successor or successors of the Company and any person or persons who shall acquire any rights hereunder in accordance with this Award Notice or the Plan.

Severability
The invalidity or unenforceability of any particular provision of this Award Notice shall not affect the other provisions hereof and this Award Notice shall be construed in all respects as if such invalid or unenforceable provision was omitted.

Governing Law & Venue
This Award Notice, the RSU Award and all determinations made and actions taken pursuant hereto and thereto, to the extent not governed by the laws of the United States, shall be governed by the laws of the State of Delaware and construed in accordance therewith without giving effect to principles of conflicts of laws. You expressly consent to the exclusive jurisdiction of the federal and state courts serving Irving, Texas for all lawsuits and actions arising out of or relating to the RSU Award and this Award Notice, and you expressly waive any defense that such courts lack personal jurisdiction over you. All such lawsuits and actions shall be tried in the federal or state courts serving Irving, Texas to the exclusion of all other courts.

Entire Agreement
This Award Notice and the Plan constitute the entire agreement between you and the Company with respect to the subject matter hereof and supersede in their entirety all prior undertakings and agreements between you and the Company with respect to the subject matter hereof, and except as provided herein, may not be modified adversely to your interest except by means of a writing signed by you and the Company.

Acceptance of Award
You are required to electronically accept this Award Notice within your stock plan account with the Company's stock plan administrator according to the procedures then in effect in order to receive the RSU Award. Your acceptance of this Award Notice constitutes acknowledgement of receipt of the Plan and this RSU Award and

consent to the terms of the Plan and this Award Notice as described in the Plan and this Award Notice. You have at least 14 calendar days to consider this Award Notice before accepting it, but you may voluntarily waive this period and accept sooner. Please be advised that you may consult with an attorney of your own choosing to seek independent advice before accepting this RSU Award. By accepting this Award Notice, you acknowledge that you have accepted it knowingly and voluntarily and with the full knowledge and understanding of its provisions after being given the opportunity to consult with counsel.

Notices

All notices, requests or other communications provided for in this Award Notice shall be made, if to the Company, to Caterpillar Inc., Equity Compensation Administration, 100 N.E. Adams Street, Peoria, IL 61629-4440 (or, if applicable, to any updated address provided by the Company for such purposes), and if to you, to your last known mailing address on file with the Company's stock plan administrator. All notices, requests or other communications provided for in this Award Notice shall be made in writing either (a) by personal delivery, (b) by facsimile or electronic mail with confirmation of receipt, (c) by mailing in the United States mail or (d) by express courier service. The notice, request or other communication shall be deemed to be received upon personal delivery, upon confirmation of receipt of facsimile or electronic mail transmission or upon receipt by the party entitled thereto if by United States mail or express courier service; provided, however, that if a notice, request or other communication sent to the Company is not received during regular business hours, it shall be deemed to be received on the next succeeding business day of the Company.

Confidentiality

If you disclose or make use of any "confidential information" (as defined below) for your own purpose or for the benefit of any person or entity, except as may be necessary in the ordinary course of your employment with the Company or any of its Subsidiaries, all of your unvested RSUs subject to this RSU Award will lapse and shall be immediately forfeited. For this purpose, "confidential information" means information that could cause harm to the Company, its Subsidiaries or its shareholders if disclosed to unauthorized users especially those outside of the Company and its Subsidiaries.

Post-Employment Restrictions

By accepting this RSU Award, you agree that until 12 months following your termination of employment, you will not directly or indirectly, without the prior written consent of Caterpillar Inc., do any of the following:

i. solicit any business competitive with any Company business from any person or entity who: (a) was a provider or customer to the Company within the 18 months before your termination of employment date and (b) with whom you had contact to further the Company's business or for whom you performed services, or supervised the provision of services for, during your employment;

ii. hire, employ, recruit or solicit any employee of or consultant to the Company who possesses confidential information of the Company;

iii. induce or influence any employee, consultant, customer or provider to the Company to terminate his, her or its employment or other relationship with the Company;

iv. engage or participate in, or in any way render services or assistance to, any business that competes, directly or indirectly, with any Company product or service that you participated in, engaged in, or had confidential information regarding, in any geographic territory over which you had responsibilities, during the 18 months before your termination of employment date; or

v. assist anyone in any of the activities listed above.

If you engage in any of the activities listed above without the prior written consent of Caterpillar Inc. within the first 12 months following your termination of employment, all unvested RSUs subject to this RSU Award will lapse and shall be immediately forfeited. For avoidance of doubt, any RSUs that would have continued to vest following your termination of employment due to Long Service Separation shall be forfeited and no further shares of Common Stock associated with this RSU Award will be issued or delivered to you.

The post-employment restrictions above shall not apply to you and will not be enforced by the Company to the extent any laws, rules, codes of professional responsibility or conduct, professional standards or regulations applicable to you and your employment with the Company prohibit such restrictions.

If you reside or work in the State of California, only subsection (ii) above is applicable to you. If you reside or work in the State of Colorado, you further acknowledge that the Company provided you with a separate notice advising you of the above post-employment restrictions in accordance with CRS § 8-2-113.

If you reside or work in the District of Columbia, the District's Ban on Non-Compete Agreements Amendment Act of 2020 limits the use of non-compete agreements. It allows employers to request non-compete agreements from highly compensated employees, as that term is defined in the Ban on Non-Compete Agreements Amendment Act of 2020, under certain conditions. The Company has determined that you are a highly compensated employee. For more information about the Ban on Non-Compete Agreements Amendment Act of 2020, contact the District of Columbia Department of Employment Services (DOES).

For purposes of this Post-Employment Restrictions section, "Company" also includes each and all of the Company's parents, Subsidiaries, and affiliates.

Further Information
For more detailed information about the Plan, please refer to the Plan prospectus or the Plan itself. Copies of these documents can be obtained on the Company's intranet site. If you do not have intranet access or have any questions regarding the administration of Caterpillar's equity compensation program, please contact executivecompensation@cat.com.

Caterpillar Inc.
2023 Long-Term Incentive Plan
Restricted Stock Unit Award Notice

%%FIRST_NAME_MIDDLE_NAME_LAST_NAME%-%

Grant Date: %%OPTION_DATE,'Month DD, YYYY'%-%
Grant Number: %%OPTION_NUMBER%-%
Units Granted: %%TOTAL_SHARES_GRANTED,'999,999,999'%-%
Vesting Date: %%VEST_DATE_PERIOD1,'Month DD, YYYY'%-%

The Board of Directors of Caterpillar Inc. (the "Company") has granted you the number of restricted stock units ("RSUs") specified above on the date specified above (the "Grant Date") pursuant to, and subject to the restrictions, terms and conditions set forth in, the Caterpillar Inc. 2023 Long-Term Incentive Plan (the "Plan"). This Award Notice and the Plan specify the material terms and provisions applicable to such restricted stock unit award (the "RSU Award"). Capitalized terms not defined herein shall have the meanings specified in the Plan.

Vesting
The RSU Award will become fully vested on the vesting date specified above (the "Vesting Date"). As soon as administratively practicable, but not later than 60 days, after the Vesting Date, the Company shall issue or deliver to you, subject to the conditions of this Award Notice, unrestricted shares of Common Stock equal to the number of RSUs that become vested, rounded up or down to the nearest whole number, less any shares withheld to satisfy any applicable income and payroll tax withholding requirements.

With limited exception as described more fully below, if your service on the Caterpillar Inc. Board of Directors (the "Board") terminates prior to the Vesting Date, the RSU Award will be forfeited. Your RSU Award is also subject to certain additional forfeiture conditions set forth in the Plan and this Award Notice.

Voting Rights
During the period between the Grant Date and the date the shares subject to such RSUs are issued or delivered to you (the "Restriction Period"), you are not entitled to any voting rights with respect to such RSUs. From and after the date shares are actually issued or delivered, you then will have full voting rights with respect to those shares.

Dividend Equivalents; Dividends
On each date that a cash dividend is paid to holders of Common Stock, an amount equal to the cash dividend that is paid on each share of Common Stock, multiplied by the number of RSUs that remain unvested and outstanding as of the dividend payment date (the "Dividend Equivalent Amount") shall be credited for your benefit. Unless otherwise determined by the Board or Committee in its discretion, the aggregate Dividend Equivalent Amount, if any, credited to you shall be converted into an additional number of RSUs determined by dividing the Dividend Equivalent Amount by the Fair Market Value of a share of Common Stock on the dividend payment date (the "Dividend Equivalent RSUs"). The Dividend Equivalent RSUs, if any, will vest on the same Vesting Date corresponding to the underlying RSUs with respect to which the Dividend Equivalent RSUs were credited, and will otherwise be subject to the same conditions applicable to the underlying RSUs, including, without limitation, the provisions governing time and form of settlement; *provided however, that* Dividend Equivalent RSUs will not accrue on Dividend Equivalent RSUs. Unless expressly provided otherwise, as used elsewhere in this Agreement "RSUs" shall include any Dividend Equivalent RSUs that have been credited to you. From and after the date shares of Common Stock are actually issued or delivered upon settlement of the RSUs, you then will have dividend rights with respect to those shares.

Termination of Service as Director
Your termination of service on the Board prior to the Vesting Date will impact the unvested RSUs as follows:

- **Six-Month Continuous Service Period**
  If your service on the Board terminates at least six months after the Grant Date, the RSU Award will continue to become vested as of the Vesting Date as though your service on the Board had continued

through the Vesting Date, and shares of Common Stock, less any shares withheld to satisfy any applicable income and payroll tax withholding requirements, will be issued or delivered to you as soon as administratively practicable, but not later than 60 days, following the Vesting Date.

- **Death**
  If your service on the Board terminates by reason of death, the RSU Award will become fully vested and shares of Common Stock, less any shares withheld to satisfy any applicable income and payroll tax withholding requirements, will be issued or delivered to your beneficiary or your estate (as applicable), as soon as administratively practicable, but not later than 2½ months, following the date of your death.
- **Change in Control**
  In the event of a Change in Control prior to the end of the Restriction Period pursuant to which your RSU Award is effectively continued, assumed or replaced by the surviving or acquiring corporation in such Change in Control (with appropriate adjustments to the number and kind of shares, in each case, that preserve the material terms and conditions of the outstanding RSU Award as in effect immediately prior to the Change in Control) and your service on the Board ceases in connection with such Change in Control, the RSU Award will immediately become fully vested and shares of Common Stock, less any shares withheld to satisfy any applicable income and payroll tax withholding requirements, will be issued or delivered to you as soon as administratively practicable, but not later than 60 days, following the Vesting Date. In the event of a vesting acceleration event upon a Change in Control pursuant to Section 4.9(a)(ii) or (iii) of the Plan, the shares of Common Stock (or cash amount, as applicable), less any shares (or cash amount, as applicable) withheld to satisfy any applicable income and payroll tax withholding requirements, will be issued or delivered to you as soon as administratively practicable, but not later than 60 days, following the date of the Change in Control, provided that if the RSUs are non-qualified deferred compensation subject to Code Section 409A and the Change in Control is not a "change in control event" within the meaning of U.S. Treas. Reg. §1.409A-3(i)(5), the RSUs will vest in accordance with Section 4.9(a)(ii) of the Plan, but the vested portion of the RSUs shall instead be settled in cash (in an amount calculated consistent with the methodology described in Section 4.9(a)(iii)), less any amount withheld to satisfy any applicable income and payroll tax withholding requirements, as soon as administratively practicable, but not later than 60 days following the applicable Vesting Date.
- **Other**
  If your service on the Board terminates prior to the Vesting Date for any reason other than as described above, all unvested RSUs subject to this RSU Award will lapse and shall be immediately forfeited.

Disability
Upon a determination by the Company's head of Total Rewards that you have a Disability (as defined below), the RSU Award will become fully vested and shares of Common Stock, less any shares withheld to satisfy any applicable income and payroll tax withholding requirements, will be issued or delivered to you as soon as administratively practicable, but not later than 60 days, following the date of such determination. For purposes of this RSU Award, "Disability" means that you are unable to engage in any substantial gainful business activity by reason of any medically determinable physical or mental impairment that can be expected to result in death, or which has lasted or can be expected to last for a continuous period of not less than 12 months, as determined by the Company's head of Total Rewards, based upon medical evidence.

Transferability of Award
Subject to certain exceptions set forth in the Plan, the RSU Award may not be assigned, transferred, pledged or hypothecated in any way. The RSU Award is not subject to execution, attachment or similar process. Any attempt at such, contrary to the provisions of the Plan, will be null and void and without effect. Note that once RSUs vest and shares of Common Stock are actually issued or delivered, you will have the ability to transfer those shares.

Designation of Beneficiary
You may designate a beneficiary (or beneficiaries) to whom any shares of Common Stock that are issued to your stock plan account with the Company's stock plan administrator upon the vesting of the RSUs will be paid upon your death. If you do not designate a beneficiary, such shares will be paid to your estate or to such other payee determined in accordance with procedures established by the Company's stock plan administrator.

Administration of the Plan
The RSU Award shall at all times be subject to the terms and provisions of the Plan and the Plan shall be administered in accordance with the terms of, and as provided in, the Plan. In the event of conflict between the terms and provisions of this Award Notice and the terms and provisions of the Plan, the provisions of the Plan shall control.

Code Section 409A
It is intended that this Award Notice and the administration of the RSU Award comply with Section 409A of the Internal Revenue Code of 1986, as amended, and the Treasury Regulations promulgated, and other official guidance issued thereunder ("Code Section 409A"), to the extent applicable. The Plan and this Award Notice shall be interpreted and construed on a basis consistent with such intent. Notwithstanding anything contained herein to the contrary, no shares may be issued or delivered unless in compliance with Code Section 409A to the extent that Code Section 409A applies. To the extent this Award Notice provides for the RSU Award to be settled by reference to your termination of service, your service shall be deemed to have terminated upon your "separation from service," within the meaning of Code Section 409A. The Committee reserves the right (including the right to delegate such right) to unilaterally amend this Award Notice (and thus the terms of the RSU Award) without your consent solely in order to maintain an exclusion from the application of, or to maintain compliance with, Code Section 409A. Your acceptance of this RSU Award constitutes acknowledgement and consent to such rights of the Committee. This provision does not create an obligation on the part of the Company to modify the terms of this Award Notice or the Plan and does not guarantee that this RSU Award or the delivery of shares of Common Stock upon settlement of the RSU Award will not be subject to taxes, interest and penalties or any other adverse tax consequences under Code Section 409A. Nothing in this Award Notice shall provide a basis for any person to take any action against the Company or any of its Subsidiaries or affiliates based on matters covered by Code Section 409A, including the tax treatment of any amounts paid under this Award Notice, and neither the Company nor any of its Subsidiaries or affiliates will have any liability under any circumstances to you or any other party if the RSU Award, the delivery of shares of Common Stock upon vesting/settlement of the RSU Award or other payment or tax event hereunder that is intended to be exempt from, or compliant with, Code Section 409A, is not so exempt or compliant or for any action taken by the Committee with respect thereto.

Tax Impact
Please refer to the Plan prospectus and support materials for a general description of the tax consequences of an RSU Award. You may also wish to consult with your personal tax advisor regarding how the RSU Award impacts your individual tax situation. Nothing contained in this Award Notice or in the Plan prospectus shall be construed as a guarantee of any particular tax effect for any benefits or amounts deferred or paid pursuant to this Award Notice.

Withholding
The distribution of shares of Common Stock in connection with the vesting of the RSU Award is a taxable event in many taxing jurisdictions. At your election, the Company may withhold taxes upon the taxable event. To satisfy this withholding obligation, you hereby authorize the Company to withhold that number of shares that would satisfy the withholding obligation from the shares otherwise to be issued or delivered to you under the RSU Award. The following conditions apply to such withholding: (a) the value of the shares of Common Stock withheld must equal the minimum withholding obligation; and (b) the value of the shares of Common Stock withheld shall be the Fair Market Value determined as of the date the RSUs become vested. For this purpose and for all purposes of this RSU Award, Fair Market Value shall mean the mean between the high and low prices at which a share of Common Stock of the Company is traded on the New York Stock Exchange. Alternatively, you may select any of the following methods to satisfy withholding obligations upon a taxable event applicable to your RSU Award in lieu of the net share withholding method described in the immediately preceding sentence: (i) a cash payment by you to the Company, (ii) your delivery (either actual delivery or by attestation procedures established by the Company) to the Company of previously issued whole shares of Common Stock having an aggregate Fair Market Value equal to the amount necessary to satisfy any such obligation or (iii) any other method of withholding determined by the Company and permitted by applicable laws and the Plan. Notwithstanding the foregoing, the net share withholding method described above will not be used for any tax-related withholding obligations that become payable in a year prior to the year that shares are issued or delivered

to you and, instead, you authorize the Company to use a method determined appropriate by the Company and permitted by applicable laws and the Plan.

Compliance with Securities Laws

The RSU Award is subject to the condition that if the listing, registration or qualification of the shares of Common Stock subject to the RSU Award upon any securities exchange or under any law, or the consent or approval of any governmental body, or the taking of any other action is necessary or desirable as a condition of, or in connection with, the issuance or delivery of shares hereunder, the shares of Common Stock subject to the RSU Award shall not be issued or delivered, in whole or in part, unless such listing, registration, qualification, consent, approval or other action shall have been effected or obtained, free of any conditions not acceptable to the Company. The Company agrees to use reasonable efforts to effect or obtain any such listing, registration, qualification, consent, approval or other action.

Adjustment of Shares

Provisions are made within the Plan covering the effect of stock dividends, stock splits, changes in par value, changes in kind of stock, sale, merger, recapitalization, reorganization, etc.

Awards Subject to Forfeiture, Clawback and Setoff

The RSU Award is subject to certain forfeiture conditions set forth in the Plan, which in the event such conditions are determined to have occurred, may result in immediate forfeiture and cancellation of your outstanding RSU Award or an obligation to repay the Company the total amount of award gain realized upon settlement of your RSU Award. Also, the Company generally may deduct from and set off against any amounts the Company owes to you, including amounts payable in connection with this RSU Award, such amounts you may owe to the Company.

Effect on Other Benefits

The RSU Award is not intended to and shall not impact the coverage of or the amount of any other benefit plans in which you participate that are sponsored by the Company or any of its Subsidiaries or affiliates.

Imposition of Other Requirements

The Company reserves the right to impose other requirements on your participation in the Plan, on the RSUs and on any shares of Common Stock acquired under the Plan, to the extent the Company determines it is necessary or advisable for legal or administrative reasons, and to require you to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing.

Award Confers No Rights to Continued Service on the Board

In no event shall the granting of the RSU Award or its acceptance by you, or any provision of the Award Notice or the Plan, give or be deemed to give you any right to continued service on the Board.

Decisions of Board or Committee

The Board or the Committee shall have the right to resolve all questions which may arise in connection with the RSU Award. Any interpretation, determination or other action made or taken by the Board or the Committee regarding the Plan or this RSU Award shall be final, binding and conclusive.

Successors

This Award Notice shall be binding upon and inure to the benefit of any successor or successors of the Company and any person or persons who shall acquire any rights hereunder in accordance with this Award Notice or the Plan.

Severability

The invalidity or unenforceability of any particular provision of this Award Notice shall not affect the other provisions hereof and this Award Notice shall be construed in all respects as if such invalid or unenforceable provision was omitted.

Governing Law & Venue

This Award Notice, the RSU Award and all determinations made and actions taken pursuant hereto and thereto, to the extent not governed by the laws of the United States, shall be governed by the laws of the State of Delaware and construed in accordance therewith without giving effect to principles of conflicts of laws. You expressly consent to the exclusive jurisdiction of the federal and state courts serving Irving, Texas for all lawsuits and actions arising out of or relating to the RSU Award and this Award Notice, and you expressly waive any defense that such courts lack personal jurisdiction over you. All such lawsuits and actions shall be tried in the federal or state courts serving Irving, Texas to the exclusion of all other courts.

Entire Agreement

This Award Notice and the Plan constitute the entire agreement between you and the Company with respect to the subject matter hereof and supersede in their entirety all prior undertakings and agreements between you and the Company with respect to the subject matter hereof, and except as provided herein, may not be modified adversely to your interest except by means of a writing signed by you and the Company.

Acceptance of Award

You are required to accept this Award Notice within your stock plan account with the Company's stock plan administrator according to the procedures then in effect. Your acceptance of this Award Notice constitutes acknowledgement of receipt of the Plan and this RSU Award and consent to the terms of the Plan and this Award Notice as described in the Plan and this Award Notice.

Notices

All notices, requests or other communications provided for in this Award Notice shall be made, if to the Company, to Caterpillar Inc., Equity Compensation Administration, 100 N.E. Adams Street, Peoria, IL 61629-4440 (or, if applicable, to any updated address provided by the Company for such purposes), and if to you, to your last known mailing address on file with the Company's stock plan administrator. All notices, requests or other communications provided for in this Award Notice shall be made in writing either (a) by personal delivery, (b) by facsimile or electronic mail with confirmation of receipt, (c) by mailing in the United States mail or (d) by express courier service. The notice, request or other communication shall be deemed to be received upon personal delivery, upon confirmation of receipt of facsimile or electronic mail transmission or upon receipt by the party entitled thereto if by United States mail or express courier service; provided, however, that if a notice, request or other communication sent to the Company is not received during regular business hours, it shall be deemed to be received on the next succeeding business day of the Company.

Confidentiality

If you disclose or make use of any "confidential information" (as defined below) for your own purpose or for the benefit of any person or entity, except as may be necessary in the ordinary course of your service on the Board, all of your unvested RSUs subject to this RSU Award will lapse and shall be immediately forfeited. For this purpose, "confidential information" means information that could cause harm to the Company, its Subsidiaries or its shareholders if disclosed to unauthorized users especially those outside of the Company and its Subsidiaries.

Further Information

For more detailed information about the Plan, please refer to the Plan prospectus or the Plan itself. If you have any questions regarding the administration of Caterpillar's equity compensation program, please reach out to your Executive Compensation contact at Caterpillar or e-mail executivecompensation@cat.com.

Caterpillar Inc.
2023 Long-Term Incentive Plan
Nonqualified Stock Option Award Notice

%%FIRST_NAME_MIDDLE_NAME_LAST_NAME%-%

Grant Date: %%OPTION_DATE,'Month DD, YYYY'%-%
Grant Number: %%OPTION_NUMBER%-%
Units Granted: %%TOTAL_SHARES_GRANTED,'999,999,999'%-%
Option Price: %%OPTION_PRICE,'$999,999,999.99'%-%
Expiration Date: %%EXPIRE_DATE_PERIOD1,'Month DD, YYYY'%-%

The Board of Directors of Caterpillar Inc. (the "Company") has granted you the number of nonqualified stock options ("NQSOs") specified above on the date specified above (the "Grant Date") pursuant to, and subject to the restrictions, terms and conditions set forth in, the Caterpillar Inc. 2023 Long-Term Incentive Plan (the "Plan") at the price specified above per share, which is the closing transaction price of a share of Company Common Stock as reported on the New York Stock Exchange on the Grant Date. This Award Notice and the Plan specify the material terms and provisions applicable to such nonqualified stock option award (the "Option Award"). Capitalized terms not defined herein shall have the meanings specified in the Plan.

Vesting
Except to the extent the NQSOs are forfeited upon your termination of employment, as provided below, the NQSOs will become vested in the amounts and on the vesting date(s) specified below (each such date, a "Vesting Date").

Vesting Date	NQSOs Vesting
%%VEST_DATE_PERIOD1,'Month DD, YYYY'%-%	%%SHARES_PERIOD1%-%
%%VEST_DATE_PERIOD2,'Month DD, YYYY'%-%	%%SHARES_PERIOD2%-%
%%VEST_DATE_PERIOD3,'Month DD, YYYY'%-%	%%SHARES_PERIOD3%-%

If you terminate employment prior to the date the NQSOs have become fully vested for any reason other than Long-Service Separation, Disability, death or in connection with a Change in Control (as described more fully below), the unvested NQSOs will be forfeited. Your Option Award is also subject to certain additional forfeiture conditions set forth in the Plan and this Award Notice.

Exercise of Award
The Option Award may only be exercised through the Plan's designated administrator, currently E*TRADE, or through such other means as the Company may designate. You may exercise the Option Award by providing notice of exercise, in a manner specified by the Company, setting forth the number of shares to be exercised, accompanied by full payment for the shares. The exercise price shall be payable at your election by: (1) tendering cash, (2) tendering previously acquired shares of Company Common Stock, (3) except as may be prohibited by applicable law, a broker-dealer, acceptable to the Company and to whom you submitted an irrevocable notice of exercise, tendering cash, (4) authorizing the Company to withhold whole shares of Common Stock which would otherwise be delivered, or (5) any combination of (1), (2), (3) and (4). Notwithstanding the foregoing, the Company, in its sole discretion, may require you (or in the event of your death, your legal representative, as the case may be) exercise the Option Award by a means of a market sale transaction (either a "same-day sale" transaction or a "sell-to-cover" transaction).

The Option Award will expire unless exercised by the expiration date specified above (the "Expiration Date"), the tenth anniversary of the Grant Date. If the Expiration Date occurs during any period in which you are prohibited from trading Company Common Stock pursuant to the Company's insider trading policy or during a period when the exercise of the Option Award would violate applicable securities law (a "Blackout Period"), then the Option Award will not expire on the Expiration Date. Instead, the Option Award will not expire until the date that is 30 days after the expiration of the Blackout Period.

Voting Rights
During the period between the Grant Date and the date you exercise your vested NQSOs and the shares subject to such NQSOs are issued or delivered to you (the "Restriction Period"), you are not entitled to any voting rights with respect to such NQSOs. From and after the date shares are actually issued or delivered, you then will have full voting rights with respect to those shares.

Dividends and Other Distributions
During the Restriction Period, you will not receive or be credited with dividends or any other distributions (*e.g.,* dividend equivalents) with respect to the NQSOs. From and after the date shares are actually issued or delivered, you then will have dividend rights with respect to those shares.

Termination of Employment
Your termination of employment with the Company prior to the date the NQSOs become fully vested will impact the unvested NQSOs as follows:

- **Long-Service Separation**
  If your employment with the Company terminates at least six months after the Grant Date by reason of Long-Service Separation (as defined below), your unvested NQSOs will continue to become vested and exercisable as of each Vesting Date as though your employment with the Company had continued through the last scheduled Vesting Date. In such event, your Option Award will remain exercisable until the Expiration Date. For purposes of this Option Award, "Long-Service Separation" means termination of employment after attainment of age 55 with 5 or more years of continuous service with the Company, as determined by the Company in its sole discretion.
- **Disability**
  If your employment with the Company terminates by reason of Disability (as defined below), your unvested NQSOs will become fully vested. In such event, your Option Award will remain exercisable until the Expiration Date. For purposes of this Option Award, "Disability" means, unless otherwise provided for in an employment, change in control or similar agreement in effect between you and the Company or a Subsidiary, qualifying for long-term disability benefits under any long-term disability program sponsored by the Company or a Subsidiary in which you participate or, if you do not participate in any such program, your inability to engage in any substantial gainful business activity by reason of any medically determinable physical or mental impairment that can be expected to result in death, or which has lasted or can be expected to last for a continuous period of not less than 12 months, as determined by the Company's head of Total Rewards, based upon medical evidence.
- **Death**
  If your employment with the Company terminates by reason of death, your unvested NQSOs will become fully vested and your estate or your beneficiary (as applicable) will have until the Expiration Date to exercise the Option Award. If you die after your termination of employment when the Option Award is otherwise exercisable, the Option Award will remain exercisable by your estate or your beneficiary (as applicable) until: (a) the Expiration Date if your termination of employment was due to Long-Service Separation, Disability or in connection with a Change in Control; or (b) the earlier of: (1) the Expiration Date or (2) 38 months following your termination of employment if your termination of employment was for any reason other than Long-Service Separation, Disability or in connection with a Change in Control.
- **Change in Control**
  In the event of a Change in Control prior to the date the NQSOs become fully vested pursuant to which your Option Award is effectively continued, assumed or replaced by the surviving or acquiring corporation in such Change in Control (with appropriate adjustments to the number and kind of shares, in each case, that preserve the material terms and conditions of the outstanding Option Award as in effect immediately prior to the Change in Control) and your employment is terminated either by the Company without Cause or by you for Good Reason, as defined in the Plan, within the 24–month period commencing on the date of the Change in Control, your unvested NQSOs will immediately become fully vested. In such event, your Option Award will remain exercisable until the Expiration Date.
- **Cause**

If your employment with the Company is terminated for Cause (as defined in the Plan), all of your unexercised NQSOs associated with the Option Award (whether vested or non-vested) shall expire immediately and all rights thereunder cease upon such termination.

- **Other**
  If your employment with the Company terminates prior to the date the NQSOs become fully vested for any reason other than Long-Service Separation, Disability, death, Cause or in connection with a Change in Control, all unvested NQSOs associated with this Option Award shall be immediately forfeited to the Company. In such event, with respect to vested NQSOs, you will have until the earlier of (1) the Expiration Date or (2) the date which is 60 days following the date of your termination of employment to exercise the Option Award.

For purposes of this Option Award, references to employment with the Company shall also mean employment with a Subsidiary. The extent to which you shall be considered employed during any periods during which you are on a leave of absence shall be determined in accordance with Company policy.

Transferability of Award

Subject to certain exceptions set forth in the Plan, the Option Award is only exercisable by you (or your beneficiary, estate or representative, as applicable) and may not be assigned, transferred, pledged or hypothecated in any way. The Option Award is not subject to execution, attachment or similar process. Any attempt at such, contrary to the provisions of the Plan, will be null and void and without effect. Note that once your Option Award is exercised and shares of Common Stock are actually issued or delivered, you will have the ability to transfer those shares.

Designation of Beneficiary

Any vested and unexercised NQSOs will transfer to your estate upon your death. If you wish to designate a beneficiary for the NQSOs, contact executivecompensation@cat.com for additional information. You may designate a beneficiary (or beneficiaries) to whom any shares of Common Stock issued to your stock plan account with the Company's stock plan administrator upon the exercise of the NQSOs will be paid upon your death. If you do not designate a beneficiary, such shares will be paid to your estate or to such other payee determined in accordance with procedures established by the Company's stock plan administrator.

Administration of the Plan

The Option Award shall, at all times, be subject to the terms and provisions of the Plan and the Plan shall be administered in accordance with the terms of, and as provided in, the Plan. In the event of conflict between the terms and provisions of this Award Notice and the terms and provisions of the Plan, the provisions of the Plan shall control.

Code Section 409A

It is intended that this Award Notice and the administration of the Option Award will be exempt from Section 409A of the Internal Revenue Code of 1986, as amended, and the Treasury Regulations promulgated and other official guidance issued thereunder ("Code Section 409A"). The Plan and this Award Notice shall be interpreted and construed on a basis consistent with such intent. Notwithstanding anything contained herein to the contrary, the Committee reserves the right (including the right to delegate such right) to unilaterally amend this Award Notice (and thus the terms of the Option Award) without your consent solely in order to maintain an exclusion from the application of, or to maintain compliance with, Code Section 409A. Your acceptance of this Option Award constitutes acknowledgement and consent to such rights of the Committee. This provision does not create an obligation on the part of the Company to modify the terms of this Award Notice or the Plan and does not guarantee that this Option Award or the delivery of shares of Common Stock upon exercise of the Option Award will not be subject to taxes, interest and penalties or any other adverse tax consequences under Code Section 409A. Nothing in this Award Notice shall provide a basis for any person to take any action against the Company or any of its Subsidiaries or affiliates based on matters covered by Code Section 409A, including the tax treatment of any amounts paid under this Award Notice, and neither the Company nor any of its Subsidiaries or affiliates will have any liability under any circumstances to you or any other party if the Option Award, the delivery of shares of Common Stock upon exercise of the Option Award or other payment or tax event hereunder that is intended to be exempt from, or compliant with, Code Section 409A, is not so exempt or compliant or for any action taken by the Committee with respect thereto.

Tax Impact

Please refer to the Plan prospectus and support materials for a general description of the tax consequences of an Option Award. You may also wish to consult with your personal tax advisor regarding how the Option Award impacts your individual tax situation. Nothing contained in this Award Notice or in the Plan prospectus shall be construed as a guarantee of any particular tax effect for any benefits or amounts deferred or paid pursuant to this Award Notice.

Withholding

The exercise of an NQSO is a taxable event in many taxing jurisdictions. In some countries, including the United States, the Company is required to withhold taxes upon the taxable event. To satisfy this withholding obligation, you hereby authorize the Company to withhold that number of shares that would satisfy the withholding obligation from the shares otherwise to be issued or delivered to you under the Option Award. The following conditions apply to such withholding: (a) the value of the shares of Common Stock withheld must equal the minimum withholding obligation; and (b) the value of the shares of Common Stock withheld shall be the Fair Market Value determined as of the exercise date. For this purpose and for all other purposes of this Option Award except the Option price as described above, Fair Market Value shall mean the mean between the high and low prices at which a share of Common Stock of the Company is traded on the New York Stock Exchange. Alternatively, by your acceptance of this Option Award, you hereby authorize the Company (or your employer), or their respective agents, to select any of the following methods to satisfy withholding obligations upon a taxable event applicable to your Option Award (i) a cash payment by you to the Company, (ii) your delivery (either actual delivery or by attestation procedures established by the Company) to the Company of previously issued whole shares of Common Stock having an aggregate Fair Market Value equal to the amount necessary to satisfy any such obligation, (iii) withholding from proceeds from the sale of shares of Common Stock acquired upon exercise of the Options through a mandatory sale arranged by the Company (on your behalf pursuant to this authorization), or (iv) any other method of withholding determined by the Company and permitted by applicable laws and the Plan; provided, however, that if you are subject to Section 16 of the Exchange Act, you shall be permitted to select among the methods set forth in subsection (i) through (iv) in lieu of the net share withholding method set forth in the immediately preceding sentence.

Compliance with Securities Laws

The Company will take steps required to achieve compliance with all applicable United States federal and state securities laws (and other laws, including registration requirements) and with the rules and practices of the stock exchanges upon which the stock of the Company is listed and the Option Award is subject to the requirements of such laws and rules. The Option Award is subject to the condition that if the listing, registration or qualification of the shares of Common Stock subject to the Option Award upon any securities exchange or under any law, or the consent or approval of any governmental body, or the taking of any other action is necessary or desirable as a condition of, or in connection with, the issuance or delivery of shares hereunder, the shares of Common Stock subject to the Option Award shall not be issued or delivered, in whole or in part, unless such listing, registration, qualification, consent, approval or other action shall have been effected or obtained, free of any conditions not acceptable to the Company. The Company agrees to use reasonable efforts to effect or obtain any such listing, registration, qualification, consent, approval or other action.

Adjustment of Shares

Provisions are made within the Plan covering the effect of stock dividends, stock splits, changes in par value, changes in kind of stock, sale, merger, recapitalization, reorganization, etc.

Awards Subject to Forfeiture, Clawback and Setoff

The Option Award (and its exercise) is subject to certain forfeiture conditions set forth in the Plan which, in the event such conditions are determined to have occurred, may result in immediate forfeiture and cancellation of your outstanding Option Award or an obligation to repay the Company the total amount of award gain realized upon exercise of your Option Award. Also, the Company generally may deduct from and set off against any amounts the Company owes to you, including amounts payable in connection with this Option Award, such amounts you may owe to the Company.

Effect on Other Benefits
The Option Award is not intended to and shall not impact the coverage of or the amount of any other employee benefit plans in which you participate that are sponsored by the Company or any of its Subsidiaries or affiliates.

Imposition of Other Requirements
The Company reserves the right to impose other requirements on your participation in the Plan, on the NQSOs and on any shares of Common Stock acquired under the Plan, to the extent the Company determines it is necessary or advisable for legal or administrative reasons, and to require you to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing.

Award Confers No Rights to Continued Employment
In no event shall the granting of the Option Award or its acceptance by you, or any provision of the Award Notice or the Plan, give or be deemed to give you any right to continued employment by the Company, any Subsidiary or any affiliate of the Company or affect in any manner the right of the Company, any Subsidiary or any affiliate of the Company to terminate your employment at any time.

Decisions of Board or Committee
The Board or the Committee shall have the right to resolve all questions which may arise in connection with the Option Award. Any interpretation, determination or other action made or taken by the Board or the Committee regarding the Plan or this Option Award shall be final, binding and conclusive.

Successors
This Award Notice shall be binding upon and inure to the benefit of any successor or successors of the Company and any person or persons who shall acquire any rights hereunder in accordance with this Award Notice or the Plan.

Severability
The invalidity or unenforceability of any particular provision of this Award Notice shall not affect the other provisions hereof and this Award Notice shall be construed in all respects as if such invalid or unenforceable provision was omitted.

Governing Law & Venue
This Award Notice, the Option Award and all determinations made and actions taken pursuant hereto and thereto, to the extent not governed by the laws of the United States, shall be governed by the laws of the State of Delaware and construed in accordance therewith without giving effect to principles of conflicts of laws. You expressly consent to the exclusive jurisdiction of the federal and state courts serving Irving, Texas for all lawsuits and actions arising out of or relating to the Option Award and this Award Notice, and you expressly waive any defense that such courts lack personal jurisdiction over you. All such lawsuits and actions shall be tried in the federal or state courts serving Irving, Texas to the exclusion of all other courts.

Entire Agreement
This Award Notice and the Plan constitute the entire agreement between you and the Company with respect to the subject matter hereof and supersede in their entirety all prior undertakings and agreements between you and the Company with respect to the subject matter hereof, and except as provided herein, may not be modified adversely to your interest except by means of a writing signed by you and the Company.

Acceptance of Award
You are required to electronically accept this Award Notice within your stock plan account with the Company's stock plan administrator according to the procedures then in effect in order to receive the Option Award. Your acceptance of this Award Notice constitutes acknowledgement of receipt of the Plan and this Option Award and consent to the terms of the Plan and this Award Notice as described in the Plan and this Award Notice. You have at least 14 calendar days to consider this Award Notice before accepting it, but you may voluntarily waive this period and accept sooner. Please be advised that you may consult with an attorney of your own choosing to seek independent advice before accepting this Option Award. By accepting this Award Notice, you acknowledge that

you have accepted it knowingly and voluntarily and with the full knowledge and understanding of its provisions after being given the opportunity to consult with counsel.

Notices

All notices, requests or other communications provided for in this Award Notice shall be made, if to the Company, to Caterpillar Inc., Equity Compensation Administration, 100 N.E. Adams Street, Peoria, IL 61629-4440 (or, if applicable, to any updated address provided by the Company for such purposes), and if to you, to your last known mailing address on file with the Company's stock plan administrator. All notices, requests or other communications provided for in this Award Notice shall be made in writing either (a) by personal delivery, (b) by facsimile or electronic mail with confirmation of receipt, (c) by mailing in the United States mail or (d) by express courier service. The notice, request or other communication shall be deemed to be received upon personal delivery, upon confirmation of receipt of facsimile or electronic mail transmission or upon receipt by the party entitled thereto if by United States mail or express courier service; provided, however, that if a notice, request or other communication sent to the Company is not received during regular business hours, it shall be deemed to be received on the next succeeding business day of the Company.

Confidentiality

If you disclose or make use of any "confidential information" (as defined below) for your own purpose or for the benefit of any person or entity, except as may be necessary in the ordinary course of your employment with the Company or any of its Subsidiaries, all of your unexercised NQSOs associated with the Option Award (whether vested or non-vested) shall expire and all rights associated with such NQSOs will cease immediately. For this purpose, "confidential information" means information that could cause harm to the Company, its Subsidiaries or its shareholders if disclosed to unauthorized users especially those outside of the Company and its Subsidiaries.

Post-Employment Restrictions

By accepting this Option Award, you agree that until 12 months following your termination of employment, you will not directly or indirectly, without the prior written consent of Caterpillar Inc., do any of the following:

i. solicit any business competitive with any Company business from any person or entity who: (a) was a provider or customer to the Company within the 18 months before your termination of employment date and (b) with whom you had contact to further the Company's business or for whom you performed services, or supervised the provision of services for, during your employment;
ii. hire, employ, recruit or solicit any employee of or consultant to the Company who possesses confidential information of the Company;
iii. induce or influence any employee, consultant, customer or provider to the Company to terminate his, her or its employment or other relationship with the Company;
iv. engage or participate in, or in any way render services or assistance to, any business that competes, directly or indirectly, with any Company product or service that you participated in, engaged in, or had confidential information regarding, in any geographic territory over which you had responsibilities, during the 18 months before your termination of employment date; or
v. assist anyone in any of the activities listed above.

If you engage in any of the activities listed above without the prior written consent of Caterpillar Inc. within the first 12 months following your termination of employment, all of your unexercised NQSOs associated with the Option Award (whether vested or non-vested) shall expire immediately and all rights thereunder cease upon such termination.

The post-employment restrictions above shall not apply to you and will not be enforced by the Company to the extent any laws, rules, codes of professional responsibility or conduct, professional standards or regulations applicable to you and your employment with the Company prohibit such restrictions.

If you reside or work in the State of California, only subsection (ii) above is applicable to you. If you reside or work in the State of Colorado, you further acknowledge that the Company provided you with a separate notice advising you of the above post-employment restrictions in accordance with CRS § 8-2-113.

If you reside or work in the District of Columbia, the District's Ban on Non-Compete Agreements Amendment Act of 2020 limits the use of non-compete agreements. It allows employers to request non-compete agreements from highly compensated employees, as that term is defined in the Ban on Non-Compete Agreements Amendment Act of 2020, under certain conditions. The Company has determined that you are a highly compensated employee. For more information about the Ban on Non-Compete Agreements Amendment Act of 2020, contact the District of Columbia Department of Employment Services (DOES).

For purposes of this Post-Employment Restrictions section, "Company" also includes each and all of the Company's parents, Subsidiaries, and affiliates.

Further Information
For more detailed information about the Plan, please refer to the Plan prospectus or the Plan itself. Copies of these documents can be obtained on the Company's intranet site. If you do not have intranet access or have any questions regarding the administration of Caterpillar's equity compensation program, please contact executivecompensation@cat.com.

EXHIBIT 10.4

Caterpillar Inc.
2023 Long-Term Incentive Plan
Performance-Based Restricted Stock Unit Award Notice

%%FIRST_NAME_MIDDLE_NAME_LAST_NAME%-%

Grant Date: %%OPTION_DATE,'Month DD, YYYY'%-%
Grant Number: %%OPTION_NUMBER%-%
Units Granted: %%TOTAL_SHARES_GRANTED,'999,999,999'%-%
Vesting Date: %%VEST_DATE_PERIOD1,'Month DD, YYYY'%-%

The Board of Directors of Caterpillar Inc. (the "Company") has granted you the number of restricted stock units ("RSUs") specified above on the date specified above (the "Grant Date") pursuant to, and subject to the restrictions, terms and conditions set forth in, the Caterpillar Inc. 2023 Long-Term Incentive Plan (the "Plan"). This Award Notice and the Plan specify the material terms and provisions applicable to such restricted stock unit award (the "RSU Award"). Capitalized terms not defined herein shall have the meanings specified in the Plan.

Vesting
Except to the extent the RSUs are forfeited upon your termination of employment as provided below, the RSU Award will vest as of the vesting date specified above (the "Vesting Date") if the Company achieves the performance goal(s) established by the Committee (the "Performance Goals") for the performance period below (the "Performance Period"), as set forth in Appendix A hereto.

Performance Period Start Date: %%GRANT_USER_DEFINED_FIELD_11%-%
Performance Period End Date: %%GRANT_USER_DEFINED_FIELD_12%-%

As soon as administratively practicable, but not later than two and one-half months, after the Performance Period End Date specified above, the Company shall issue or deliver to you, subject to the achievement of the Performance Goals and the other conditions of this Award Notice, unrestricted shares of Common Stock equal to the number of RSUs that become vested, rounded up or down to the nearest whole number, less any shares withheld to satisfy any applicable income and payroll tax withholding requirements.

If you terminate employment prior to the date the RSUs have become fully vested for any reason other than Long-Service Separation, Disability, death or in connection with a Change in Control (as described more fully below), all of the unvested RSUs will be forfeited. Your RSU Award is also subject to certain additional forfeiture conditions set forth in the Plan and this Award Notice.

Voting Rights
During the period between the Grant Date and the date the RSUs become vested and the shares subject to such RSUs are issued or delivered to you (the "Restriction Period"), you are not entitled to any voting rights with respect to such RSUs. From and after the date shares are actually issued or delivered, you then will have full voting rights with respect to those shares.

Dividend Equivalents; Dividends
On each date that a cash dividend is paid to holders of Common Stock, an amount equal to the cash dividend that is paid on each share of Common Stock, multiplied by the number of RSUs that remain unvested and outstanding as of the dividend payment date (the "Dividend Equivalent Amount") shall be credited for your benefit. Unless otherwise determined by the Board or Committee in its discretion, the aggregate Dividend Equivalent Amount, if any, credited to you shall be converted into an additional number of RSUs determined by dividing the Dividend Equivalent Amount by the Fair Market Value of a share of Common Stock on the dividend payment date (the "Dividend Equivalent RSUs"). The Dividend Equivalent RSUs, if any, will vest on the same Vesting Date corresponding to the underlying RSUs with respect to which the Dividend Equivalent RSUs were credited, and will otherwise be subject to the same conditions applicable to the underlying RSUs, including, without limitation, the provisions governing time and form of settlement; *provided however, that* Dividend Equivalent RSUs will not

accrue on Dividend Equivalent RSUs. Unless expressly provided otherwise, as used elsewhere in this Agreement "RSUs" shall include any Dividend Equivalent RSUs that have been credited to you. From and after the date shares of Common Stock are actually issued or delivered upon settlement of the RSUs, you then will have dividend rights with respect to those shares.

Termination of Employment
If your employment with the Company terminates prior to the Vesting Date, all unvested RSUs subject to this RSU Award will lapse and shall be immediately forfeited, except as follows:

- **Long-Service Separation**
  If your employment with the Company terminates at least six months after the Grant Date by reason of Long-Service Separation (as defined below), the RSU Award will remain outstanding and the RSUs will become vested if and to the extent the Performance Goals for the full Performance Period are achieved. For purposes of this RSU Award, "Long-Service Separation" means termination of employment for any reason other than for Cause after attainment of age 55 with 5 or more years of continuous service with the Company, as determined by the Company in its sole discretion.
- **Disability**
  If your employment with the Company terminates by reason of Disability, the RSU Award will remain outstanding and the RSUs will become vested if and to the extent the Performance Goals are achieved. For purposes of this RSU Award, "Disability" means, unless otherwise provided for in an employment, change in control or similar agreement in effect between you and the Company or a Subsidiary, qualifying for long-term disability benefits under any long-term disability program sponsored by the Company or a Subsidiary in which you participate or, if you do not participate in any such program, your inability to engage in any substantial gainful business activity by reason of any medically determinable physical or mental impairment that can be expected to result in death, or which has lasted or can be expected to last for a continuous period of not less than 12 months, as determined by the Company's head of Total Rewards, based upon medical evidence.
- **Death**
  If your employment with the Company terminates by reason of death, your unvested RSUs will become fully vested and shares of Common Stock, less any shares withheld to satisfy any applicable income and payroll tax withholding requirements, will be issued or delivered to your beneficiary or your estate (as applicable), as soon as administratively practicable, but not later than 2½ months, following the date of your death.
- **Change in Control**
  In the event of a Change in Control prior to the end of the Restriction Period pursuant to which your RSU Award is effectively continued, assumed or replaced by the surviving or acquiring corporation in such Change in Control (with appropriate adjustments to the number and kind of shares, in each case, that preserve the material terms and conditions of the outstanding RSU Award as in effect immediately prior to the Change in Control) and your employment is terminated either by the Company or its successor without Cause or by you for Good Reason, as defined in the Plan, within the 24–month period commencing on the date of the Change in Control, all of the RSUs will immediately become fully vested and shares of Common Stock, less any shares withheld to satisfy any applicable income and payroll tax withholding requirements, will be issued or delivered to you as soon as administratively practicable, but not later than two and one-half months, after your termination of employment.

For purposes of this RSU Award, references to employment with the Company shall also mean employment with a Subsidiary. The extent to which you shall be considered employed during any periods during which you are on a leave of absence shall be determined in accordance with Company policy.

Transferability of Award
Subject to certain exceptions set forth in the Plan, the RSU Award may not be assigned, transferred, pledged or hypothecated in any way. The RSU Award is not subject to execution, attachment or similar process. Any attempt at such, contrary to the provisions of the Plan, will be null and void and without effect. Note that once RSUs vest and shares of Common Stock are actually issued or delivered, you will have the ability to transfer those shares.

Designation of Beneficiary
You may designate a beneficiary (or beneficiaries) to whom any shares of Common Stock that are issued to your stock plan account with the Company's stock plan administrator upon the vesting of the RSUs will be paid upon your death. If you do not designate a beneficiary, such shares will be paid to your estate or to such other payee determined in accordance with procedures established by the Company's stock plan administrator.

Administration of the Plan
The RSU Award shall, at all times, be subject to the terms and provisions of the Plan and the Plan shall be administered in accordance with the terms of, and as provided in, the Plan. In the event of conflict between the terms and provisions of this Award Notice and the terms and provisions of the Plan, the provisions of the Plan shall control.

Code Section 409A
It is intended that this Award Notice and the administration of the RSU Award comply with Section 409A of the Internal Revenue Code of 1986, as amended, and the Treasury Regulations promulgated, and other official guidance issued thereunder ("Code Section 409A"), to the extent applicable. The Plan and this Award Notice shall be interpreted and construed on a basis consistent with such intent. Notwithstanding anything contained herein to the contrary, no shares may be issued or delivered unless in compliance with Code Section 409A to the extent that Code Section 409A applies. To the extent this Award Notice provides for the RSU Award to be settled by reference to your termination of employment, your employment shall be deemed to have terminated upon your "separation from service," within the meaning of Code Section 409A. The Committee reserves the right (including the right to delegate such right) to unilaterally amend this Award Notice (and thus the terms of the RSU Award) without your consent solely in order to maintain an exclusion from the application of, or to maintain compliance with, Code Section 409A. Your acceptance of this RSU Award constitutes acknowledgement and consent to such rights of the Committee. This provision does not create an obligation on the part of the Company to modify the terms of this Award Notice or the Plan and does not guarantee that this RSU Award or the delivery of shares of Common Stock upon settlement of the RSU Award will not be subject to taxes, interest and penalties or any other adverse tax consequences under Code Section 409A. Nothing in this Award Notice shall provide a basis for any person to take any action against the Company or any of its Subsidiaries or affiliates based on matters covered by Code Section 409A, including the tax treatment of any amounts paid under this Award Notice, and neither the Company nor any of its Subsidiaries or affiliates will have any liability under any circumstances to you or any other party if the RSU Award, the delivery of shares of Common Stock upon vesting/settlement of the RSU Award or other payment or tax event hereunder that is intended to be exempt from, or compliant with, Code Section 409A, is not so exempt or compliant or for any action taken by the Committee with respect thereto.

Tax Impact
Please refer to the Plan prospectus and support materials for a general description of the tax consequences of an RSU Award. You may also wish to consult with your personal tax advisor regarding how the RSU Award impacts your individual tax situation. Nothing contained in this Award Notice or in the Plan prospectus shall be construed as a guarantee of any particular tax effect for any benefits or amounts deferred or paid pursuant to this Award Notice.

Withholding
The distribution of shares of Common Stock in connection with the vesting of the RSU Award is a taxable event in many taxing jurisdictions. In some countries, including the United States, the Company is required to withhold taxes upon the taxable event. To satisfy this withholding obligation, you hereby authorize the Company to withhold that number of shares that would satisfy the withholding obligation from the shares otherwise to be issued or delivered to you under the RSU Award. The following conditions apply to such withholding: (a) the value of the shares of Common Stock withheld must equal the minimum withholding obligation; and (b) the value of the shares of Common Stock withheld shall be the Fair Market Value determined as of the date the RSUs become vested. For this purpose and for all purposes of this RSU Award, Fair Market Value shall mean the mean between the high and low prices at which a share of Common Stock of the Company is traded on the New York Stock Exchange. Alternatively, by your acceptance of this RSU Award, you hereby authorize the Company (or your employer), or their respective agents, to select any of the following methods to satisfy withholding

obligations upon a taxable event applicable to your RSU Award (i) a cash payment by you to the Company, (ii) your delivery (either actual delivery or by attestation procedures established by the Company) to the Company of previously issued whole shares of Common Stock having an aggregate Fair Market Value equal to the amount necessary to satisfy any such obligation, (iii) withholding from proceeds from the sale of shares of Common Stock acquired upon vesting of the RSU Award through a mandatory sale arranged by the Company (on your behalf pursuant to this authorization), or (iv) any other method of withholding determined by the Company and permitted by applicable laws and the Plan; provided, however, that if you are subject to Section 16 of the Exchange Act, you shall be permitted to select among the methods set forth in (i) through (iv) above in lieu of the net share withholding method set forth in the immediately preceding sentence. Notwithstanding the foregoing, the net share withholding method described above will not be used for social security, FICA or other employment tax-related withholding obligations that become payable in a year prior to the year that shares are issued or delivered to you and, instead, you authorize the Company (or your employer) to use a method determined appropriate by the Company and permitted by applicable laws and the Plan.

Compliance with Securities Laws
The RSU Award is subject to the condition that if the listing, registration or qualification of the shares of Common Stock subject to the RSU Award upon any securities exchange or under any law, or the consent or approval of any governmental body, or the taking of any other action is necessary or desirable as a condition of, or in connection with, the issuance or delivery of shares hereunder, the shares of Common Stock subject to the RSU Award shall not be issued or delivered, in whole or in part, unless such listing, registration, qualification, consent, approval or other action shall have been effected or obtained, free of any conditions not acceptable to the Company. The Company agrees to use reasonable efforts to effect or obtain any such listing, registration, qualification, consent, approval or other action.

Adjustment of Shares
Provisions are made within the Plan covering the effect of stock dividends, stock splits, changes in par value, changes in kind of stock, sale, merger, recapitalization, reorganization, etc.

Awards Subject to Forfeiture, Clawback and Setoff
The RSU Award is subject to certain forfeiture conditions set forth in the Plan, which in the event such conditions are determined to have occurred, may result in immediate forfeiture and cancellation of your outstanding RSU Award or an obligation to repay the Company the total amount of award gain realized upon settlement of your RSU Award. Also, the Company generally may deduct from and set off against any amounts the Company owes to you, including amounts payable in connection with this RSU Award, such amounts you may owe to the Company.

Effect on Other Benefits
The RSU Award is not intended to and shall not impact the coverage of or the amount of any other employee benefit plans in which you participate that are sponsored by the Company or any of its Subsidiaries or affiliates.

Imposition of Other Requirements
The Company reserves the right to impose other requirements on your participation in the Plan, on the RSUs and on any shares of Common Stock acquired under the Plan, to the extent the Company determines it is necessary or advisable for legal or administrative reasons, and to require you to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing.

Award Confers No Rights to Continued Employment
In no event shall the granting of the RSU Award or its acceptance by you, or any provision of the Award Notice or the Plan, give or be deemed to give you any right to continued employment by the Company, any Subsidiary or any affiliate of the Company or affect in any manner the right of the Company, any Subsidiary or any affiliate of the Company to terminate your employment at any time.

Decisions of Board or Committee

The Board or the Committee shall have the right to resolve all questions which may arise in connection with the RSU Award. Any interpretation, determination or other action made or taken by the Board or the Committee regarding the Plan or this RSU Award shall be final, binding and conclusive.

Successors

This Award Notice shall be binding upon and inure to the benefit of any successor or successors of the Company and any person or persons who shall acquire any rights hereunder in accordance with this Award Notice or the Plan.

Severability

The invalidity or unenforceability of any particular provision of this Award Notice shall not affect the other provisions hereof and this Award Notice shall be construed in all respects as if such invalid or unenforceable provision was omitted.

Governing Law & Venue

This Award Notice, the RSU Award and all determinations made and actions taken pursuant hereto and thereto, to the extent not governed by the laws of the United States, shall be governed by the laws of the State of Delaware and construed in accordance therewith without giving effect to principles of conflicts of laws. You expressly consent to the exclusive jurisdiction of the federal and state courts serving Irving, Texas for all lawsuits and actions arising out of or relating to the RSU Award and this Award Notice, and you expressly waive any defense that such courts lack personal jurisdiction over you. All such lawsuits and actions shall be tried in the federal or state courts serving Irving, Texas to the exclusion of all other courts.

Entire Agreement

This Award Notice and the Plan constitute the entire agreement between you and the Company with respect to the subject matter hereof and supersede in their entirety all prior undertakings and agreements between you and the Company with respect to the subject matter hereof, and except as provided herein, may not be modified adversely to your interest except by means of a writing signed by you and the Company.

Acceptance of Award

You are required to electronically accept this Award Notice within your stock plan account with the Company's stock plan administrator according to the procedures then in effect in order to receive the RSU Award. Your acceptance of this Award Notice constitutes acknowledgement of receipt of the Plan and this RSU Award and consent to the terms of the Plan and this Award Notice as described in the Plan and this Award Notice. You have at least 14 calendar days to consider this Award Notice before accepting it, but you may voluntarily waive this period and accept sooner. Please be advised that you may consult with an attorney of your own choosing to seek independent advice before accepting this RSU Award. By accepting this Award Notice, you acknowledge that you have accepted it knowingly and voluntarily and with the full knowledge and understanding of its provisions after being given the opportunity to consult with counsel.

Notices

All notices, requests or other communications provided for in this Award Notice shall be made, if to the Company, to Caterpillar Inc., Equity Compensation Administration, 100 N.E. Adams Street, Peoria, IL 61629-4440 (or, if applicable, to any updated address provided by the Company for such purposes), and if to you, to your last known mailing address on file with the Company's stock plan administrator. All notices, requests or other communications provided for in this Award Notice shall be made in writing either (a) by personal delivery, (b) by facsimile or electronic mail with confirmation of receipt, (c) by mailing in the United States mail or (d) by express courier service. The notice, request or other communication shall be deemed to be received upon personal delivery, upon confirmation of receipt of facsimile or electronic mail transmission or upon receipt by the party entitled thereto if by United States mail or express courier service; provided, however, that if a notice, request or other communication sent to the Company is not received during regular business hours, it shall be deemed to be received on the next succeeding business day of the Company.

Confidentiality

If you disclose or make use of any "confidential information" (as defined below) for your own purpose or for the benefit of any person or entity, except as may be necessary in the ordinary course of your employment with the Company or any of its Subsidiaries, all of your unvested RSUs subject to this RSU Award will lapse and shall be immediately forfeited. For this purpose, "confidential information" means information that could cause harm to the Company, its Subsidiaries or its shareholders if disclosed to unauthorized users especially those outside of the Company and its Subsidiaries.

Post-Employment Restrictions

By accepting this RSU Award, you agree that until 12 months following your termination of employment, you will not directly or indirectly, without the prior written consent of Caterpillar Inc., do any of the following:

i. solicit any business competitive with any Company business from any person or entity who: (a) was a provider or customer to the Company within the 18 months before your termination of employment date and (b) with whom you had contact to further the Company's business or for whom you performed services, or supervised the provision of services for, during your employment;

ii. hire, employ, recruit or solicit any employee of or consultant to the Company who possesses confidential information of the Company;

iii. induce or influence any employee, consultant, customer or provider to the Company to terminate his, her or its employment or other relationship with the Company;

iv. engage or participate in, or in any way render services or assistance to, any business that competes, directly or indirectly, with any Company product or service that you participated in, engaged in, or had confidential information regarding, in any geographic territory over which you had responsibilities, during the 18 months before your termination of employment date; or

v. assist anyone in any of the activities listed above.

If you engage in any of the activities listed above without the prior written consent of Caterpillar Inc. within the first 12 months following your termination of employment, all unvested RSUs subject to this RSU Award will lapse and shall be immediately forfeited. For avoidance of doubt, any RSUs that would have otherwise vested upon achievement of the Performance Goals following your termination of employment due to Long Service Separation shall be forfeited.

The post-employment restrictions above shall not apply to you and will not be enforced by the Company to the extent any laws, rules, codes of professional responsibility or conduct, professional standards or regulations applicable to you and your employment with the Company prohibit such restrictions.

If you reside or work in the State of California, only subsection (ii) above is applicable to you. If you reside or work in the State of Colorado, you further acknowledge that the Company provided you with a separate notice advising you of the above post-employment restrictions in accordance with CRS § 8-2-113.

If you reside or work in the District of Columbia, the District's Ban on Non-Compete Agreements Amendment Act of 2020 limits the use of non-compete agreements. It allows employers to request non-compete agreements from highly compensated employees, as that term is defined in the Ban on Non-Compete Agreements Amendment Act of 2020, under certain conditions. The Company has determined that you are a highly compensated employee. For more information about the Ban on Non-Compete Agreements Amendment Act of 2020, contact the District of Columbia Department of Employment Services (DOES).

For purposes of this Post-Employment Restrictions section, "Company" also includes each and all of the Company's parents, Subsidiaries, and affiliates.

Further Information

For more detailed information about the Plan, please refer to the Plan prospectus or the Plan itself. Copies of these documents can be obtained on the Company's intranet site. If you do not have intranet access or have any questions regarding the administration of Caterpillar's equity compensation program, please contact executivecompensation@cat.com.

Appendix A
Performance-Based Restricted Stock Unit Award

Performance Period Start Date: %%GRANT_USER_DEFINED_FIELD_11%-%
Performance Period End Date: %%GRANT_USER_DEFINED_FIELD_12%-%
Performance Goal: %%GRANT_USER_DEFINED_FIELD_13%-%

The Performance Goal shall be [•]

Capitalized terms not defined in this Appendix A shall have the meanings specified in the Plan and in the Award Notice.

Caterpillar Inc.
2023 Long-Term Incentive Plan
Nonqualified Stock Option Award Notice – China Payroll Addendum

%%FIRST_NAME_MIDDLE_NAME_LAST_NAME%-%

Grant Date: %%OPTION_DATE,'Month DD, YYYY'%-%
Grant Number: %%OPTION_NUMBER%-%
Units Granted: %%TOTAL_SHARES_GRANTED,'999,999,999'%-%
Option Price: %%OPTION_PRICE,'$999,999,999.99'%-%
Expiration Date: %%EXPIRE_DATE_PERIOD1,'Month DD, YYYY'%-%

Notwithstanding any provision in the Award Notice or the Plan to the contrary, unless and until the Company determines otherwise, the method of exercise of the Option Award shall be limited to a mandatory cashless, sell-all/sell-to-cover exercise method.

EXHIBIT 31.1

SECTION 302 CERTIFICATION

I, D. James Umpleby III, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Caterpillar Inc.;

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

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

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

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

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

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

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

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

    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.

August 2, 2023	*/s/ D. James Umpleby III*	Chief Executive Officer
	D. James Umpleby III	

EXHIBIT 31.2

SECTION 302 CERTIFICATION

I, Andrew R.J. Bonfield, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Caterpillar Inc.;

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

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

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

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

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

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

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

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

   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.

August 2, 2023	*/s/ Andrew R.J. Bonfield*	Chief Financial Officer
	Andrew R.J. Bonfield	

EXHIBIT 32

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

In connection with the quarterly report of Caterpillar Inc. (the “Company”) on Form 10-Q for the period ending June 30, 2023 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), the undersigned hereby certify pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of our knowledge:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

August 2, 2023	*/s/ D. James Umpleby III*	Chief Executive Officer
	D. James Umpleby III	
August 2, 2023	*/s/ Andrew R.J. Bonfield*	Chief Financial Officer
	Andrew R.J. Bonfield	

A signed original of this written statement required by Section 906 has been provided to Caterpillar Inc. and will be retained by Caterpillar Inc. and furnished to the Securities and Exchange Commission or its staff upon request.