

**CITIGROUP ENERGY INC.
AND SUBSIDIARIES**

(An indirect wholly owned subsidiary of Citigroup Global Markets Holdings Inc.)

Consolidated Statement of Financial Condition
December 31, 2023

**CITIGROUP ENERGY INC.
AND SUBSIDIARIES**

(An indirect wholly owned subsidiary of Citigroup Global Markets Holdings Inc.)

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KPMG LLP
345 Park Avenue
New York, NY 10154-0102

Independent Auditors' Report

To the Board of Directors
Citigroup Energy Inc.:

Opinion

We have audited the consolidated statement of financial condition of Citigroup Energy Inc. and its subsidiaries (the Company) as of December 31, 2023, and the related notes (collectively, the consolidated financial statement).

In our opinion, the accompanying consolidated financial statement presents fairly, in all material respects, the financial position of the Company as of December 31, 2023, in accordance with U.S. generally accepted accounting principles.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (GAAS). Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Consolidated Financial Statement section of our report. We are required to be independent of the Company and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management for the Consolidated Financial Statement

Management is responsible for the preparation and fair presentation of the consolidated financial statement in accordance with U.S. generally accepted accounting principles, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statement that is free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statement, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Company's ability to continue as a going concern for one year after the date that the consolidated financial statement is available to be issued.

Auditors' Responsibilities for the Audit of the Consolidated Financial Statement

Our objectives are to obtain reasonable assurance about whether the consolidated financial statement as a whole is free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the consolidated financial statement.



In performing an audit in accordance with GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the consolidated financial statement, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statement.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the consolidated financial statement.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Company's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control related matters that we identified during the audit.

KPMG LLP

New York, New York
February 29, 2024

CITIGROUP ENERGY INC. AND SUBSIDIARIES
(An indirect wholly owned subsidiary of Citigroup Global Markets Holdings Inc.)
Consolidated Statement of Financial Condition
December 31, 2023
(Dollars in millions, except share data)

Assets	
Cash	\$ 29
Trading account assets:	
Derivatives	2,681
Physical commodities	1,125
Other trading assets	111
Receivables:	
Loans to Citicorp LLC	3,305
Brokerage	951
Fair value option loans	730
Other assets	103
Total assets	\$ 9,035
Liabilities and Stockholder's Equity	
Liabilities:	
Short-term borrowings, at fair value	\$ 11
Trading account liabilities:	
Derivatives	2,556
Accrued expenses and other liabilities	255
Long-term debt (including \$1,177 at fair value)	3,792
Total liabilities	6,614
Stockholder's equity	
Common stock (without par value, 200 shares authorized; 200 shares issued and outstanding)	—
Additional paid-in capital	936
Retained earnings	1,504
Accumulated other comprehensive income (loss) (AOCI)	(19)
Total stockholder's equity	2,421
Total liabilities and stockholder's equity	\$ 9,035

The accompanying Notes are an integral part of the Consolidated Statement of Financial Condition.

CITIGROUP ENERGY INC.

(An indirect wholly owned subsidiary of Citigroup Global Markets Holdings Inc.)

Notes to Consolidated Statement of Financial Condition

December 31, 2023

(1) Summary of Significant Accounting Policies

(a) *Principles of Consolidation and Description of Business*

The Consolidated Statement of Financial Condition includes the accounts of Citigroup Energy Inc. (CEI) and its subsidiaries prepared in accordance with U.S. generally accepted accounting principles (GAAP). CEI is a direct wholly owned subsidiary of Citigroup Financial Products Inc. (CFPI, or Parent), and is an indirect wholly owned subsidiary of Citigroup Global Markets Holdings Inc. The Company's ultimate parent is Citigroup Inc. (Citigroup or Citi).

Throughout these Notes, "CEI" and the "Company" refer to Citigroup Energy Inc. and its consolidated subsidiaries. The Company consolidates subsidiaries in which it holds, directly or indirectly, more than 50% of the voting rights or where it exercises control.

CEI is a Delaware Corporation and is a dealer in commodity swaps and options and other derivative products. CEI is a registered swap dealer with the Commodity Futures Trading Commission (CFTC) and National Futures Association (NFA).

The Company evaluated subsequent events through February 23, 2024, the date that Citigroup's Consolidated Financial Statements and Notes were submitted to the U.S. Securities and Exchange Commission (SEC) in its Annual Report on Form 10-K for the year ended December 31, 2023.

(b) *Use of Estimates*

Management must make estimates and assumptions that affect the Consolidated Statement of Financial Condition and the related Notes. Such estimates are used in connection with certain fair value measurements. See Note 6 for further discussions on estimates used in the determination of fair value. Moreover, estimates are significant in determining the amounts of provisions for probable losses that may arise from credit-related exposures, probable and estimable losses related to litigation and regulatory proceedings, and income taxes. While management makes its best judgment, actual amounts or results could differ from those estimates.

(c) *Cash*

Cash represents funds deposited with financial institutions, including \$28 million deposited with affiliated banks.

(d) *Trading Account Assets and Liabilities*

Trading account assets include derivatives in a net receivable position, physical commodities inventory, and receivables related to terminated derivative transactions. *Trading account liabilities* include derivatives in a net payable position. Other than physical commodities inventory, all trading account assets and liabilities are carried at fair value.

As part of its commodity trading activities, the Company trades various physical commodities including carbon emissions credits, base metals, natural gas and oil and other refined products. CEI's physical commodities inventory is carried at the lower of cost or market. The carrying amount of physical commodities inventory designated as part of a fair value hedge is adjusted for changes in fair value in accordance with ASC 815, *Derivatives and Hedging*.

(e) *Borrowing and lending of funds with Citicorp LLC*

Citicorp LLC (Citicorp), a direct wholly owned subsidiary of Citigroup, provides liquidity support to CEI in the form of *Short-term borrowings* and *Long-term debt*. CEI also lends excess liquidity to Citicorp.

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(f) Brokerage receivables

CEI's brokerage receivables are due from an affiliate, Citigroup Global Markets Inc. (CGMI). CGMI provides brokerage services to CEI, including acting as clearing broker on CEI's behalf.

(g) Fair value option loans

CEI has elected fair value accounting for certain commodities financing transactions and structured loans for renewable energy. Such loans are carried at fair value.

(h) Long-term debt

Long-term debt is accounted for at amortized cost, except where the Company has elected to report the debt instruments, including certain structured notes, at fair value. CEI has no subordinated debt outstanding as of December 31, 2023, and has not issued any subordinated debt during the year ending December 31, 2023.

(i) Risk Management Activities—Derivatives Used for Hedging Purposes

The Company manages its exposures to market movements outside of its trading activities through the use of derivatives, including commodity futures. These end-user derivatives are carried at fair value. See Note 5 for a further discussion of the Company's hedging and derivative activities.

(j) Instrument-Specific Credit Risk

The Company presents separately in *Accumulated other comprehensive income (loss) (AOCI)* the portion of the total change in the fair value of a liability resulting from a change in the instrument-specific credit risk, when the entity has elected to measure the liability at fair value in accordance with the fair value option for financial instruments. Accordingly, the change in fair value of liabilities for which the fair value option was elected, related to changes in Citigroup's own credit spreads, is presented in *AOCI*.

(k) Income Taxes

The Company is subject to the income tax laws of the U.S. and its states and municipalities, as well as the non-U.S. jurisdiction in which it operates. These tax laws are complex and may be subject to different interpretations by the taxpayer and the relevant governmental taxing authorities.

Disputes over interpretations of the tax laws may be subject to review and adjudication by the court systems of the various tax jurisdictions or, may be settled with the taxing authority upon examination or audit.

Deferred taxes are recorded for the future consequences of events that have been recognized in financial statements or tax returns, based upon enacted tax laws and rates. Deferred tax assets are recognized subject to management's judgment about whether realization is more-likely-than-not. ASC 740, *Income Taxes*, sets out a consistent framework to determine the appropriate level of tax reserves to maintain for uncertain tax positions. This interpretation uses a two-step approach wherein a tax benefit is recognized if a position is more-likely-than-not to be sustained. The amount of the benefit is then measured to be the highest tax benefit that is more than 50% likely to be realized. ASC 740 also sets out disclosure requirements to enhance transparency of an entity's tax reserves.

See Note 2 for a further description of the Company's income tax assets and liabilities.

(l) Related Party Transactions

CEI has related party transactions with certain of its subsidiaries and affiliates. These transactions include cash accounts, derivative transactions and the borrowing and lending of funds, and are entered

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into in the ordinary course of business. See Note 7 for details on the Company's related party transactions.

(2) Income Taxes

The Company's U.S. federal, state and local income taxes, and state and local unitary deferred taxes, are determined based on an income tax sharing agreement with Citigroup. Under the tax sharing agreement, the Company settles its current tax liability with Citigroup throughout the year, except for any tax liabilities expected to be payable as a separate taxpayer.

As of December 31, 2023, the Company had federal and state income taxes payable in the amount of \$172 million.

Deferred income taxes at December 31, 2023 related to the following:

In millions of dollars

Deferred tax assets:	
Investments	\$ 2
Deferred compensation and employee benefits	10
Allocated deferred state taxes	23
Fixed assets	10
Tax credit and net operating loss carry-forwards	6
Other deferred tax assets	1
Gross deferred tax assets	52
Valuation allowance	—
Deferred tax assets after valuation allowance	52
Deferred tax liabilities:	
Other deferred tax liabilities	(1)
Deferred tax liabilities	(1)
Net deferred tax assets	\$ 51

At December 31, 2023, the Company has a valuation allowance of \$117 thousand on deferred tax assets applicable to state net operating losses. Although realization is not assured, the Company believes that the realization of the recognized deferred tax assets is more likely than not based on expectations as to future taxable income in the jurisdictions in which it operates and available tax planning strategies (as defined in ASC 740, *Income Taxes*) that would be implemented, if necessary, to prevent a carryforward from expiring.

Foreign net operating loss carry-forwards expire from 2039 to 2042 and state and local net operating loss carry-forwards expire in 2034.

The following are the major tax jurisdictions in which the Company and its affiliates operate and the earliest tax year subject to examination:

Jurisdiction	Tax year
United States	2016
New York State	2012
New York City	2012
California	2016

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(3) Long Term Debt

<i>In millions of dollars</i>	Weighted average interest rate ⁽¹⁾	Maturities	December 31, 2023
Long-term debt with affiliates	7.3%	2024-2033	\$ 2,615
Fair value option long-term debt		2026-2039	1,177
Total			\$ 3,792

(1) The weighted average interest rate excludes structured notes accounted for at fair value.

Aggregate annual maturities of long-term debt obligations are as follows:

<i>In millions of dollars</i>	December 31, 2023
2024	\$ 306
2025	308
2026	1,117
Thereafter	2,061
Total	\$ 3,792

(4) Capital Requirements

The Company is a registered swap dealer with the NFA and the CFTC and is subject to §CFTC 23.101 Minimum Financial Requirements for Swap Dealers and Major Swap Participants. The Company has elected to calculate capital under §CFTC 23.101(a)(1)(i), using the Bank-Based method which is based primarily on existing capital requirements for Bank Holding Companies (BHC). The Company is required to satisfy the following requirements. Maintain Capital of not less than a) Common Equity Tier 1 Capital of \$20 million; b) Common Equity Tier 1 Capital equal to at least 6.5% of the Company's BHC Equivalent Risk-weighted Assets; c) Common Equity Tier 1 Capital & Tier 2 Capital, equal to at least 8% of the Company's BHC Equivalent Risk-weighted Assets; d) Total Capital equal to at least 8% of the Company's Uncleared Swap Margin and e) the amount of capital required by the NFA. The Company is required to obtain pre-approval from the NFA of any subordinated loan agreement in order for the subordinated debt to be used for regulatory capital.

As of December 31, 2023, the Company had regulatory net capital of \$2.4 billion, which was \$1.3 billion in excess of the minimum net capital requirement of \$1.1 billion.

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(5) Derivatives

In the ordinary course of business, the Company enters into various types of derivative transactions, which include:

- *Futures and forward contracts*, which are commitments to buy or sell at a future date a financial instrument or commodity at a contracted price that may be settled in cash or through delivery of an item readily convertible to cash.
- *Swap contracts*, which are commitments to settle in cash at a future date or dates that may range from a few days to a number of years, based on differentials between specified indices or financial instruments, as applied to a notional principal amount.
- *Option contracts*, which give the purchaser, for a premium, the right, but not the obligation, to buy or sell within a specified time a financial instrument or commodity at a contracted price that may also be settled in cash, based on differentials between specified indices or prices.

Swaps, forwards, and some option contracts are over-the-counter (OTC) derivatives that are bilaterally negotiated with counterparties and settled with those counterparties. The Company enters into derivative contracts relating to commodity, interest rate and other market/credit risks for the following reasons:

- *Trading Purposes*: The Company trades derivatives as an active market maker. The Company offers its customers derivatives in connection with their risk management actions to transfer, modify or reduce their commodity and other market/credit risks or for their own trading purposes. The Company also manages its derivative risk positions through offsetting trade activities, controls focused on price verification and daily reporting of positions to senior managers.
- *Hedging*: The Company uses derivatives in connection with its own risk management activities to hedge certain risks. Hedging may be accomplished by applying hedge accounting in accordance with ASC 815, *Derivatives and Hedging*. For example, commodity futures contracts are used to hedge commodity price risk exposures.

Derivatives may expose the Company to market, credit or liquidity risks in excess of the amounts recorded on the Statement of Financial Condition. Market risk on a derivative product is the exposure created by potential fluctuations in market prices, interest rates and other factors and is a function of the type of product, the volume of transactions, the tenor and terms of the agreement and the underlying volatility. Credit risk is the exposure to loss in the event of nonperformance by the other party to satisfy a derivative liability where the value of any collateral held by the Company is not adequate to cover such losses. The recognition in earnings of unrealized gains on derivative transactions is subject to management's assessment of the probability of counterparty default. Liquidity risk is the potential exposure that arises when the size of a derivative position may affect the ability to monetize the position in a reasonable period of time and at a reasonable cost in periods of high volatility and financial stress.

Derivative transactions are customarily documented under industry standard master netting agreements, which provide that following an event of default, the non-defaulting party may promptly terminate all transactions between the parties and determine the net amount due to be paid to, or by, the defaulting party. Events of default include (i) failure to make a payment on a derivative transaction that remains uncured following applicable notice and grace periods, (ii) breach of agreement that remains uncured after applicable notice and grace periods, (iii) breach of a representation, (iv) cross default, either to third-party debt or to other derivative transactions entered into between the parties, or, in some cases, their affiliates, (v) the occurrence of a merger or consolidation that results in the creditworthiness of a party becoming materially weaker, and (vi) the cessation or repudiation of any applicable guarantee or other credit support document. Obligations under master netting agreements are often secured by collateral posted under an industry

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standard credit support annex to the master netting agreement. An event of default may also occur under a credit support annex if a party fails to make a collateral delivery that remains uncured following applicable notice and grace periods.

The netting and collateral rights incorporated in the master netting agreements are considered to be legally enforceable if a supportive legal opinion has been obtained from counsel of recognized standing that provides (i) the requisite level of certainty regarding enforceability and (ii) that the exercise of rights by the non-defaulting party to terminate and close-out transactions on a net basis under these agreements will not be stayed or avoided under applicable law upon an event of default, including bankruptcy, insolvency or similar proceeding.

A legal opinion may not be sought for certain jurisdictions where local law is silent or unclear as to the enforceability of such rights or where adverse case law or conflicting regulation may cast doubt on the enforceability of such rights. In some jurisdictions and for some counterparty types, the insolvency law may not provide the requisite level of certainty.

Exposure to credit risk on derivatives is affected by market volatility, which may impair the ability of counterparties to satisfy their obligations to the Company. Credit limits are established and closely monitored for customers engaged in derivatives transactions. CEI considers the level of legal certainty regarding enforceability of its offsetting rights under master netting agreements and credit support annexes to be an important factor in its risk management process. Specifically, CEI generally transacts much lower volumes of derivatives under master netting agreements where CEI does not have the requisite level of legal certainty regarding enforceability, because such derivatives consume greater amounts of single counterparty credit limits than those executed under enforceable master netting agreements.

Cash collateral is often posted by a party to a master netting agreement to secure the net open exposure of the other party; the receiving party is free to commingle/rehypothebate such collateral in the ordinary course of its business.

Information pertaining to CEI's derivatives activities, based on notional amounts, is presented in the following table. Derivative notional amounts are reference amounts from which contractual payments are derived and do not represent a complete measure of CEI's exposure to derivative transactions. CEI's derivative exposure arises primarily from market fluctuations (i.e., market risk), counterparty failure (i.e., credit risk) and/or periods of high volatility or financial stress (i.e., liquidity risk), as well as any market valuation adjustments that may be required on the transactions. Moreover, notional amounts do not reflect the netting of offsetting trades. For example, if CEI enters into a receive-fixed interest rate swap with \$100 million notional, and offsets this risk with an identical but opposite pay-fixed position with a different counterparty, \$200 million in derivative notionals is reported, although these offsetting positions may result in de minimis overall market risk.

In addition, aggregate derivative notional amounts can fluctuate from period to period in the normal course of business based on CEI's levels of client activity and other factors.

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Derivative Notionals

<i>In millions of dollars at December 31, 2023</i>	Hedging instruments under ASC 815	Trading derivative instruments
Commodity contracts:		
Swaps	\$ —	21,583
Futures and forwards	905	32,381
Written options	—	1,822
Purchased options	—	1,901
Total commodity contract notionals	905	57,687
Interest rate swaps contracts	—	15,551
Credit derivatives		
Protection sold	—	206
Protection purchased	—	1,388
Total credit derivatives	—	1,594
Total derivative notionals	\$ 905	74,832

The following table presents the gross and net fair values of the Company's derivative transactions and the related offsetting amounts as of December 31, 2023. Gross positive fair values are offset against gross negative fair values by counterparty, pursuant to enforceable master netting agreements. Under ASC 815-10-45, payables and receivables in respect of cash collateral received from or paid to a given counterparty pursuant to a credit support annex are included in the offsetting amount if a legal opinion supporting the enforceability of netting and collateral rights has been obtained. All derivatives are reported on the Consolidated Statement of Financial Condition at fair value and are classified in *Trading account assets* and *Trading account liabilities*.

Derivative Mark-to-Market (MTM) Receivables/Payables

<i>In millions of dollars at December 31, 2023</i>	Assets ⁽¹⁾⁽²⁾	Liabilities ⁽¹⁾⁽²⁾
Derivative instruments:		
Over-the-counter commodity contracts	\$ 6,336	6,325
Exchange traded commodity contracts	38	62
Commodity contracts	6,374	6,387
Over-the-counter interest rate contracts	408	192
Over-the-counter credit derivatives	15	52
Total derivatives	6,797	6,631
Less: Netting agreements ⁽³⁾	(3,839)	(3,839)
Less: Netting cash collateral received/paid ⁽⁴⁾	(277)	(236)
Net receivables / payables	\$ 2,681	2,556

(1) The derivatives fair values are also presented in Note 6.

(2) Over-the-counter (OTC) derivatives are derivatives executed and settled bilaterally with counterparties without the use of an organized exchange or central clearing house. Exchange-traded derivatives include derivatives executed directly on an organized exchange that provides pre-trade price transparency.

(3) Represents the netting of derivative receivable and payable balances with the same counterparty under enforceable netting agreements.

(4) Represents the netting of cash collateral paid and received by counterparties under enforceable credit support agreements with appropriate legal opinion supporting enforceability of netting.

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Accounting for Derivative Hedging

The Company accounts for its hedging activities in accordance with ASC 815, *Derivatives and Hedging*. As a general rule, hedge accounting is permitted where the Company is exposed to a particular risk, such as price risk, that causes changes in the fair value of an asset or liability that may affect earnings. Derivative contracts hedging the risks associated with changes in fair value are referred to as fair value hedges.

To qualify as an accounting hedge under the hedge accounting rules, a hedging relationship must be highly effective in offsetting the risk designated as being hedged. The hedging relationship must be formally documented at inception, detailing the particular risk management objective and strategy for the hedge. This includes the item and risk(s) being hedged, the hedging instrument being used and how effectiveness will be assessed. The effectiveness of these hedging relationships is evaluated at hedge inception and on an ongoing basis both on a retrospective and prospective basis, typically using quantitative measures of correlation. Hedge effectiveness assessment methodologies are performed in a similar manner for similar hedges, and are used consistently throughout the hedging relationships.

Fair Value Hedges

Hedging of Commodity Price Risk

The Company hedges the change in fair value attributable to spot price movements for certain physical commodities inventories. The hedging instrument is a futures contract to sell the underlying commodity. In this hedge, the change in the carrying value of the hedged inventory due to spot price movements is reflected in earnings, which offsets the change in the fair value of the hedging derivative that is also reflected in earnings. Although the entire change in the fair value of the hedging instrument is recorded in earnings, CEI excludes changes in the fair value of the forward points (i.e., spot-forward difference) of the futures contract from the assessment of hedge effectiveness, and they are generally reflected directly in earnings over the life of the hedge.

Cumulative Basis Adjustment

Upon electing to apply ASC 815 fair value hedge accounting, the carrying value of the hedged item is adjusted to reflect the cumulative changes in the hedged risk. This cumulative basis adjustment becomes part of the carrying amount of the hedged item until the hedged item is derecognized from the balance sheet. The table below presents the carrying amount of CEI's hedged assets under qualifying fair value hedges at December 31, 2023, along with the cumulative basis adjustments included in the carrying value of those hedged assets.

In millions of dollars at December 31, 2023

Balance sheet line item in which hedged item is recorded	Carrying amount of hedged asset	Cumulative basis adjustment increasing the carrying amount	
		Active	De-designated
Trading account assets	\$ 976	58	—

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(6) Fair Value Measurement

ASC 820-10, *Fair Value Measurement*, defines fair value, establishes a consistent framework for measuring fair value and requires disclosures about fair value measurements. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, and therefore represents an exit price. Among other things, the standard requires the Company to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value.

Under ASC 820-10, the probability of counterparty default is factored into the valuation of derivative and debt positions, and the impact of CEI's own credit risk is also factored into the valuation of derivatives and debt liabilities that are measured at fair value.

Fair Value Hierarchy

ASC 820-10 specifies a hierarchy of inputs based on whether the inputs are observable or unobservable. Observable inputs are developed using market data and reflect market participant assumptions, while unobservable inputs reflect the Company's market assumptions. These two types of inputs have created the following fair value 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 and significant value drivers are *observable* in the market.
- Level 3: Valuations derived from valuation techniques in which one or more significant inputs or significant value drivers are *unobservable*.

As required under the fair value hierarchy, the Company considers relevant and observable market inputs in its valuations where possible. The fair value hierarchy classification approach typically utilizes rules-based and data-driven selection criteria to determine whether an instrument is classified as Level 1, Level 2 or Level 3:

- The determination of whether an instrument is quoted in an active market and therefore considered a Level 1 instrument is based upon the frequency of observed transactions and the quality of independent market data available on the measurement date.
- A Level 2 classification is assigned where there is observability of prices/market inputs to models, or where any unobservable inputs are not significant to the valuation. The determination of whether an input is considered observable is based on the availability of independent market data and its corroboration, for example through observed transactions in the market.
- Otherwise, an instrument is classified as Level 3.

Determination of Fair Value

For assets and liabilities carried at fair value, the Company measures fair value using the procedures set out below, irrespective of whether the assets and liabilities are measured at fair value as a result of an election, a non-recurring lower-of-cost-or-market (LOCOM) adjustment, or because they are required to be measured at fair value.

When available, the Company uses quoted market prices from active markets to determine fair value and classifies such items as Level 1. In some specific cases where a market price is available, the Company will

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apply practical expedients (such as matrix pricing) to calculate fair value, in which case the items may be classified as Level 2.

The Company may also apply a price-based methodology that utilizes, where available, quoted prices or other market information obtained from recent trading activity in positions with the same or similar characteristics to the position being valued. If relevant and observable prices are available, those valuations may be classified as Level 2. However, when there are one or more significant unobservable “price” inputs, those valuations will be classified as Level 3. Furthermore, when a quoted price is considered stale, a significant adjustment to the price of a similar security may be necessary to reflect differences in the terms of the actual security or loan being valued, or alternatively, when prices from independent sources may be insufficient to corroborate a valuation, the “price” inputs are considered unobservable and the fair value measurements are classified as Level 3.

If quoted market prices are not available, fair value is based upon internally developed valuation techniques that use, where possible, current market-based parameters, such as forward prices and commodity price volatility and correlation. Items valued using such internally generated valuation techniques are classified according to the lowest level input or value driver that is significant to the valuation. Thus, an item may be classified as Level 3 even though there may be some significant inputs that are readily observable.

Fair value estimates from internal valuation techniques are verified, where possible, to prices obtained from independent vendors or brokers. Vendors’ and brokers’ valuations may be based on a variety of inputs ranging from observed prices to proprietary valuation models, and the Company assesses the quality and relevance of this information in determining the estimate of fair value. The following section describes the valuation methodologies used by the Company to measure various financial instruments at fair value. Where appropriate, the description includes details of the valuation models, the key inputs to those models and any significant assumptions.

Market Valuation Adjustments

Generally, the unit of account for a financial instrument is the individual financial instrument. The Company applies market valuation adjustments that are consistent with the unit of account, which does not include adjustment due to the size of the Company’s position, except as follows. ASC 820-10 permits an exception, through an accounting policy election, to measure the fair value of a portfolio of financial assets and financial liabilities on the basis of the net open risk position when certain criteria are met. CEI has elected to measure certain portfolios of financial instruments that meet those criteria, such as derivatives, on the basis of the net open risk position. The Company applies market valuation adjustments, including adjustments to account for the size of the net open risk position, consistent with market participant assumptions.

Valuation adjustments are applied to items classified as Level 2 or Level 3 in the fair value hierarchy to ensure that the fair value reflects the price at which the net open risk position could be exited. These valuation adjustments are based on the bid/offer spread for an instrument in the market. When CEI has elected to measure certain portfolios of financial investments, such as derivatives, on the basis of the net open risk position, the valuation adjustment may take into account the size of the position.

Credit valuation adjustments (CVA) and funding valuation adjustments (FVA) are applied to the relevant population of over-the-counter (OTC) derivative instruments where adjustments to reflect counterparty credit risk, own credit risk and term funding risk are required to estimate fair value. This principally includes derivatives with a base valuation (e.g., discounted using overnight indexed swap (OIS)) requiring adjustment for these effects, such as uncollateralized commodity swaps. The CVA represents a portfolio-

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level adjustment to reflect the risk premium associated with the counterparty's (assets) or CEI's (liabilities) non-performance risk.

The FVA represents a market funding risk premium inherent in the uncollateralized portion of a derivative portfolio and in certain collateralized derivative portfolios that do not include standard credit support annexes (CSAs), such as where the CSA does not permit the reuse of collateral received. CEI's FVA methodology leverages the existing CVA methodology to estimate a funding exposure profile. The calculation of this exposure profile considers collateral agreements in which the terms do not permit the Company to reuse the collateral received, including where counterparties post collateral to third-party custodians. CEI's CVA and FVA methodologies consist of two steps:

- First, the exposure profile for each counterparty is determined using the terms of all individual derivative positions and a Monte Carlo simulation or other quantitative analysis to generate a series of expected cash flows at future points in time. The calculation of this exposure profile considers the effect of credit risk mitigants and sources of funding, including pledged cash or other collateral and any legal right of offset that exists with a counterparty through arrangements such as netting agreements. Individual derivative contracts that are subject to an enforceable master netting agreement with a counterparty are aggregated as a netting set for this purpose, since it is those aggregate net cash flows that are subject to nonperformance risk. This process identifies specific, point-in-time future cash flows that are subject to nonperformance and term funding risk, rather than using the current recognized net asset or liability as a basis to measure the CVA and FVA.
- Second, for CVA, market-based views of default probabilities derived from observed credit spreads in the credit default swap (CDS) market are applied to the expected future cash flows determined in step one. CEI's own credit CVA is determined using Citi-specific CDS spreads for the relevant tenor. Generally, counterparty CVA is determined using CDS spread indices for each credit rating and tenor. For certain identified netting sets where individual analysis is practicable (e.g., exposures to counterparties with liquid CDSs), counterparty-specific CDS spreads are used. For FVA, a term structure of spreads is applied to the expected funding exposures (e.g., the market liquidity spread used to represent the term funding premium associated with certain OTC derivatives).

The CVA and FVA are designed to incorporate a market view of the credit and funding risk, respectively, inherent in the derivative portfolio. However, most unsecured derivative instruments are negotiated bilateral contracts and are not commonly transferred to third parties. Derivative instruments are normally settled contractually or, if terminated early, are terminated at a value negotiated bilaterally between the counterparties. Thus, the CVA and FVA may not be realized upon a settlement or termination in the normal course of business. In addition, all or a portion of these adjustments may be reversed or otherwise adjusted in future periods in the event of changes in the credit or funding risk associated with the derivative instruments.

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The table below summarizes the CVA and FVA applied to the fair value of derivative instruments at December 31, 2023:

Credit and funding valuation adjustments contra-liability (contra-asset)

In millions of dollars at December 31, 2023

Counterparty CVA	\$ (74)
Asset FVA	(40)
CEI (own credit) CVA ⁽¹⁾	10
Liability FVA	14
Total CVA and FVA—derivative instruments	\$ (90)

(1) Determined using Citi-specific CDS spreads.

Trading Account Assets and Liabilities—Derivatives

Exchange-traded derivatives, measured at fair value using quoted (i.e., exchange) prices in active markets, where available, are classified as Level 1 of the fair value hierarchy.

Derivatives without a quoted price in an active market and derivatives executed over the counter are valued using internal valuation techniques. These derivative instruments are classified as either Level 2 or Level 3 depending on the observability of the significant inputs to the model.

The valuation techniques depend on the type of derivative and the nature of the underlying instrument. The principal techniques used to value these instruments are discounted cash flows and internal models, such as derivative pricing models (e.g., Black-Scholes and Monte Carlo simulations).

The key inputs depend upon the type of derivative and the nature of the underlying instrument and include commodity volatilities and commodity correlation.

Short-Term Borrowings and Long-Term Debt

Where fair value accounting has been elected, the fair value of non-structured liabilities is determined by utilizing internal models using the appropriate discount rate for the applicable maturity. Such instruments are classified as Level 2 of the fair value hierarchy when all significant inputs are readily observable.

The Company determines the fair value of hybrid financial instruments, including structured liabilities, using the appropriate derivative valuation methodology (described above in “Trading Account Assets and Liabilities—Derivatives”) given the nature of the embedded risk profile. Such instruments are classified as Level 2 or Level 3 depending on the observability of significant inputs to the model.

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Items Measured at Fair Value on a Recurring Basis

The following table presents for each of the fair value hierarchy levels the Company's assets and liabilities that are measured at fair value on a recurring basis at December 31, 2023. The Company may hedge positions that have been classified in the Level 3 category with other financial instruments (hedging instruments) that may be classified as Level 3, but also with financial instruments classified as Level 2. The effects of these hedges are presented gross in the following table.

Fair Value Levels	Gross					
<i>In millions of dollars at December 31, 2023</i>	Level 1	Level 2	Level 3	inventory	Netting ⁽¹⁾	Total
Trading account assets:						
Derivatives:						
Commodity contracts	\$ —	5,552	822	6,374		
Interest rate contracts	—	408	—	408		
Credit derivatives	—	15	—	15		
Total derivatives	—	5,975	822	6,797		
Netting agreements					(3,839)	
Netting of cash collateral received					(277)	
Total derivatives	—	5,975	822	6,797	(4,116)	2,681
Other trading assets	—	—	111	111		111
Fair value option loans	—	668	62	730	—	730
Total assets	\$ —	6,643	995	7,638	(4,116)	3,522
Total as a percentage of gross assets ⁽²⁾	—%	87.0%	13.0%			
Trading account liabilities:						
Derivatives:						
Commodity contracts	\$ —	5,955	432	6,387		
Interest rate contracts	—	192	—	192		
Credit derivatives	—	52	—	52		
Total derivatives	—	6,199	432	6,631		
Netting agreements					(3,839)	
Netting of cash collateral paid					(236)	
Total derivatives	—	6,199	432	6,631	(4,075)	2,556
Short-term borrowings	—	7	4	11	—	11
Long-term debt	—	1,177	—	1,177	—	1,177
Total liabilities	\$ —	7,383	436	7,819	(4,075)	3,744
Total as a percentage of gross liabilities ⁽²⁾	—%	94.4%	5.6%			

(1) Represents netting of derivative exposures covered by a qualifying master netting agreement and cash collateral offsetting.

(2) Because the amount of the cash collateral paid/received has not been allocated to the Level 2 and 3 subtotals, these percentages are calculated based on total assets and liabilities measured at fair value on a recurring basis, excluding the cash collateral paid/received on derivatives.

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Valuation Techniques and Inputs for Level 3 Fair Value Measurements

The Company's Level 3 inventory consists of both cash instruments and derivatives of varying complexity. The following table presents the valuation techniques covering the majority of Level 3 inventory and the most significant unobservable inputs used in Level 3 fair value measurements. Methodologies are applied consistently.

<i>As of December 31, 2023</i>	Fair value <i>(in millions)</i>	Methodology	Input	Low	High	Weighted Average⁽¹⁾
Assets						
Derivatives – Gross ⁽²⁾ :						
Commodity derivatives (gross)	1,254	Model-based	Forward Price	31.70 %	425.51 %	142.29 %
			Commodity Volatility	14.72 %	149.99 %	35.03 %
			Commodity Correlation	(45.33) %	93.02 %	57.15 %
Other trading assets ⁽³⁾	111	Recovery analysis	Recovery Rate	86.00 %	86.00 %	86.00 %
Fair value option loans	62	Model-based	Forward Price	33.48 %	348.43 %	115.47 %
			Commodity Volatility	26.51 %	66.80 %	31.79 %
			Commodity Correlation	(45.33) %	93.02 %	(7.28) %
Liabilities						
Short-term borrowings	4	Model-based	Forward Price	31.96 %	283.68 %	125.13 %
			Commodity Volatility	27.26 %	92.65 %	41.30 %
			Commodity Correlation	(45.33) %	93.02 %	62.58 %

(1) Weighted averages are calculated based on the fair values of the instruments.

(2) Trading account derivatives—assets and liabilities—are presented on a gross absolute value basis.

(3) The methodology involving the input applies to only one position.

Uncertainty of Fair Value Measurements Relating to Unobservable Inputs

Valuation uncertainty arises when there is insufficient or dispersed market data to allow a precise determination of the exit value of a fair-valued position or portfolio in today's market. This is especially prevalent in Level 3 fair value instruments, where uncertainty exists in valuation inputs that may be both unobservable and significant to the instrument's (or portfolio's) overall fair value measurement. The uncertainties associated with key unobservable inputs on the Level 3 fair value measurements may not be independent of one another. In addition, the amount and direction of the uncertainty on a fair value measurement for a given change in an unobservable input depends on the nature of the instrument as well as whether the Company holds the instrument as an asset or a liability. For certain instruments, the pricing, hedging and risk management are sensitive to the correlation between various inputs rather than on the analysis and aggregation of the individual inputs.

The following section describes some of the most significant unobservable inputs used by the Company in Level 3 fair value measurements.

Commodity Volatility

Volatility represents the speed and severity of commodity price changes and is a key factor in pricing options. Typically, instruments can become more expensive if volatility increases. For example, as an index becomes more volatile, the cost to CEI of maintaining a given level of exposure increases because more frequent rebalancing of the portfolio is required. Volatility generally depends on the tenor of the underlying instrument and the strike price or level defined in the contract. Volatilities for certain combinations of tenor and strike are not observable and need to be estimated using alternative methods, such as using comparable

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instruments, historical analysis or other sources of market information. This leads to uncertainty around the final fair value measurement of instruments with unobservable volatilities.

Commodity Correlation

Correlation is a measure of the co-movement between two or more variables. A variety of correlation-related assumptions are required for a wide range of commodity derivatives. For almost all of these instruments, correlations are not directly observable in the market and must be estimated using historical information. Estimating correlation can be especially difficult where it may vary over time. Extracting correlation information from market data can require judgement. Changes in correlation levels can have a major impact, favorable or unfavorable, on the value of an instrument, depending on its nature.

Forward Price

The price input is a significant unobservable input for certain commodity instruments; however, the range of price inputs varies depending on the nature of the position and other factors.

Estimated Fair Value of Financial Instruments Not Carried at Fair Value

The following table presents the carrying value and fair value of CEI's financial instruments that are not carried at fair value. The table below therefore excludes items measured at fair value on a recurring basis presented in the tables above.

The disclosure also excludes the effect of taxes, any premium or discount that could result from offering for sale at one time the entire holdings of a particular instrument and other expenses that would be incurred in a market transaction. In addition, the table excludes the values of non-financial assets and liabilities.

Fair values vary from period to period based on changes in a wide range of factors, including interest rates, credit quality, commodity prices and market perceptions of value, and as existing assets and liabilities run off and new transactions are entered into.

<i>In millions of dollars</i>	December 31, 2023		Estimated fair value		
	Carrying value	Estimated fair value	Level 1	Level 2	Level 3
Assets:					
Loans to Citicorp LLC	\$ 3,305	3,305	—	3,305	—
Brokerage receivables	951	951	—	—	951
Physical commodities ⁽¹⁾	1,125	1,136	—	1,106	30
Other financial assets ⁽²⁾	33	33	4	25	4
Liabilities:					
Long-term debt	\$ 2,615	2,615	—	2,615	—
Other financial liabilities ⁽³⁾	23	23	—	—	23

(1) Physical commodities accounted for at the lower of cost or fair value. See Note 1 for additional details.

(2) Includes cash and other financial instruments included in *Other assets* on the Consolidated Statement of Financial Condition, for all of which the carrying value is a reasonable estimate of fair value.

(3) Includes other financial instruments included in *Accrued expenses and other liabilities* on the Consolidated Statement of Financial Condition, for all of which the carrying value is a reasonable estimate of fair value.

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(7) Related Party Transactions

CFPI, an indirect, wholly owned subsidiary of Citigroup, owns 100% of the outstanding common stock of the Company. Pursuant to various intercompany agreements, a number of significant transactions are carried out between the Company and Citigroup and/or their affiliates. These transactions, which are primarily short-term in nature, include derivative securities transactions and the borrowing of funds.

Detailed below is a summary of the Company's transactions with other Citigroup affiliates which are included in the accompanying Consolidated Statement of Financial Condition as of December 31, 2023.

Balance Sheet Items

In millions of dollars at December 31, 2023

Assets	
Cash	\$ 28
Derivatives	201
Loans to Citicorp	3,305
Brokerage receivables	951
Total assets	\$ 4,485
Liabilities	
Derivatives	\$ 287
Accrued expenses and other liabilities	31
Long-term debt	2,616
Total liabilities	\$ 2,934

(8) Commitments and Contingencies

In the normal course of its business, CEI is subject to inquiries and audits by various regulatory authorities. As a regulated entity, the Company may be subject to disciplinary actions as a result of current or future examinations which could have a material adverse effect on the Company's financial position, results of operations or liquidity over and above any previously accrued amounts. As of December 31, 2023, CEI has no contingency reserves.

Citigroup and CEI seek to resolve all litigation, regulatory, tax and other matters in the manner management believes is in the best interests of Citigroup and its shareholders, and contests liability, allegations of wrongdoing and, where applicable, the amount of damages or scope of any penalties or other relief sought as appropriate in each pending matter.

Subject to the foregoing, it is the opinion of Citigroup's management, based on current knowledge, that the eventual outcome of all matters described in this Note would not likely have a material adverse effect on the consolidated financial condition of CEI. Nonetheless, given the substantial or indeterminate amounts sought in certain of these matters, and the inherent unpredictability of such matters, an adverse outcome in certain of these matters could, from time to time, have a material adverse effect on CEI's consolidated results of operations or cash flows in particular quarterly or annual periods.