FORM 10-Q

Quarterly report pursuant to sections 13 or 15(d)

Filing Date: **2020-08-13** | Period of Report: **2020-06-30**
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CALPINE CORP
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 10-Q

(Mark One)

[X] QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended June 30, 2020

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 No. 001-12079

CALPINE®

Calpine Corporation
(A Delaware Corporation)
I.R.S. Employer Identification No. 77-0212977
717 Texas Avenue, Suite 1000, Houston, Texas 77002
Telephone: (713) 830-2000

Securities registered pursuant to Section 12(b) of the Act: None

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 [X]

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 during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes [X] No [ ]

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See 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	[X]	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 [X]

Indicate the number of shares outstanding of each of the registrant's classes of common stock, as of the latest practicable date: 105.2 shares of common stock, par value $0.001, were outstanding as of August 12, 2020, none of which were publicly traded.

CALPINE CORPORATION AND SUBSIDIARIES

REPORT ON FORM 10-Q
For the Quarter Ended June 30, 2020

INDEX

DEFINITIONS

As used in this report for the quarter ended June 30, 2020 (this "Report"), the following abbreviations and terms have the meanings as listed below. Additionally, the terms "Calpine," "we," "us" and "our" refer to Calpine Corporation and its consolidated subsidiaries, unless the context clearly indicates otherwise. The term "Calpine Corporation" refers only to Calpine Corporation and not to any of its subsidiaries. Unless and as otherwise stated, any references in this Report to any agreement means such agreement and all schedules, exhibits and attachments in each case as amended, restated, supplemented or otherwise modified to the date of filing this Report.

ABBREVIATION	DEFINITION
2019 Form 10-K	Calpine Corporation's Annual Report on Form 10-K for the year ended December 31, 2019, filed with the SEC on February 25, 2020
2022 First Lien Notes	The $750 million aggregate principal amount of 6.0% senior secured notes due 2022, issued October 31, 2013, repaid on December 20, 2019 and January 21, 2020
2023 Senior Unsecured Notes	The $1.25 billion aggregate principal amount of 5.375% senior unsecured notes due 2023, issued July 22, 2014, repaid on December 27, 2019 and January 21, 2020
2024 First Lien Notes	The $490 million aggregate principal amount of 5.875% senior secured notes due 2024, issued October 31, 2013, repaid on December 20, 2019 and January 21, 2020
2024 First Lien Term Loan	The $1.6 billion first lien senior secured term loan, dated May 28, 2015 (as amended December 21, 2016), among Calpine Corporation, as borrower, the lenders party thereto, Morgan Stanley Senior Funding, Inc., as administrative agent and Goldman Sachs Credit Partners L.P., as collateral agent
2024 Senior Unsecured Notes	The $650 million aggregate principal amount of 5.5% senior unsecured notes due 2024, issued February 3, 2015, repaid on August 10, 2020 and August 12, 2020
2025 Senior Unsecured Notes	The $1.55 billion aggregate principal amount of 5.75% senior unsecured notes due 2025, issued July 22, 2014, repaid on August 10, 2020 and August 12, 2020
2026 First Lien Notes	Collectively, the $625 million aggregate principal amount of 5.25% senior secured notes due 2026, issued May 31, 2016, and the $560 million aggregate principal amount of 5.25% senior secured notes due 2026, issued on December 15, 2017
2026 First Lien Term Loans	Collectively, the $950 million first lien senior secured term loan, dated April 5, 2019, among Calpine Corporation, as borrower, the lenders party thereto, Morgan Stanley Senior Funding, Inc., as administrative agent and MUFG Union Bank, N.A., as collateral agent and the $750 million first lien senior secured term loan, dated August 12, 2019, among Calpine Corporation, as borrower, the lending party thereto, Credit Suisse AG, Cayman Islands Branch, as administrative agent and MUFG Union Bank, N.A., as collateral agent
2028 First Lien Notes	The $1.25 billion aggregate principal amount of 4.5% senior secured notes due 2028, issued December 20, 2019
2028 Senior Unsecured Notes	The $1.4 billion aggregate principal amount of 5.125% senior unsecured notes due 2028, issued December 27, 2019
2029 Senior Unsecured Notes	The $650 million aggregate principal amount of 4.625% senior unsecured notes due 2029, issued August 10, 2020

2031 Senior Unsecured Notes	The $850 million aggregate principal amount of 5.000% senior unsecured notes due 2031, issued August 10, 2020
Accounts Receivable Sales Program	Receivables purchase agreement between Calpine Solutions and Calpine Receivables and the purchase and sale agreement between Calpine Receivables and an unaffiliated financial institution, both which allows for the revolving sale of up to $250 million in certain trade accounts receivables to third parties
AOCI	Accumulated Other Comprehensive Income

ABBREVIATION	DEFINITION
Average availability	Represents the total hours during the period that our plants were in-service or available for service as a percentage of the total hours in the period
Average capacity factor, excluding peakers	A measure of total actual power generation as a percent of total potential power generation. It is calculated by dividing (a) total MWh generated by our power plants, excluding peakers, by (b) the product of multiplying (i) the average total MW in operation, excluding peakers, during the period by (ii) the total hours in the period
Btu	British thermal unit(s), a measure of heat content
CAISO	California Independent System Operator which is an entity that manages the power grid and operates the competitive power market in California
Calpine Receivables	Calpine Receivables, LLC, an indirect, wholly owned subsidiary of Calpine, which was established as a bankruptcy remote, special purpose subsidiary and is responsible for administering the Accounts Receivable Sales Program
Calpine Solutions	Calpine Energy Solutions, LLC, an indirect, wholly owned subsidiary of Calpine, which is a supplier of power to commercial and industrial retail customers in the United States with customers in 20 states, including presence in California, Texas, the mid-Atlantic and the Northeast
CCA	Community Choice Aggregators which are local governments that procure power on behalf of their residents, businesses and municipal accounts from an alternative supplier while still receiving transmission and distribution service from their existing utility
CCFC	Calpine Construction Finance Company, L.P., an indirect, wholly owned subsidiary of Calpine
CCFC Term Loan	The $1.0 billion first lien senior secured term loan entered into on December 15, 2017 among CCFC as borrower, the lenders party thereto, and Credit Suisse AG, Cayman Islands Branch, as administrative agent and collateral agent
CDHI	Calpine Development Holdings, Inc., an indirect, wholly owned subsidiary of Calpine
Champion Energy	Champion Energy Marketing, LLC, an indirect, wholly owned subsidiary of Calpine, which owns a retail electric provider that serves residential, governmental, commercial and industrial customers in deregulated electricity markets in 13 states and the District of Columbia, including presence in Texas, the mid-Atlantic and Northeast
Chapter 11	Chapter 11 of the U.S. Bankruptcy Code
Cogeneration	Using a portion or all of the steam generated in the power generating process to supply a customer with steam for use in the customer's operations
Commodity expense	The sum of our expenses from fuel and purchased energy expense, commodity transmission and transportation expense, environmental compliance expenses, ancillary retail expense and realized settlements from our marketing, hedging and optimization activities including natural gas and fuel oil transactions hedging future power sales
Commodity Margin	Measure of profit that includes revenue recognized on our wholesale and retail power sales activity, electric capacity sales, REC sales, steam sales, realized settlements associated with our marketing, hedging, optimization and trading activities, fuel and purchased energy expenses, commodity transmission and transportation expenses, environmental compliance expenses and ancillary retail expense. Commodity Margin is a measure of segment profit or loss under FASB

	Accounting Standards Codification 280 used by our chief operating decision maker to make decisions about allocating resources to the relevant segments and assessing their performance
Commodity revenue	The sum of our revenues recognized on our wholesale and retail power sales activity, electric capacity sales, REC sales, steam sales and realized settlements from our marketing, hedging, optimization and trading activities
Company	Calpine Corporation, a Delaware corporation, and its subsidiaries

ABBREVIATION	DEFINITION
Corporate Revolving Facility	The approximately $2.0 billion aggregate amount revolving credit facility credit agreement, dated as of December 10, 2010, as amended on June 27, 2013, July 30, 2014, February 8, 2016, December 1, 2016, September 15, 2017, October 20, 2017, March 8, 2018, May 18, 2018, April 5, 2019 and August 12, 2019 among Calpine Corporation, the Bank of Tokyo-Mitsubishi UFJ, Ltd., as successor administrative agent, MUFG Union Bank, N.A., as successor collateral agent, the lenders party thereto and the other parties thereto
CPUC	California Public Utilities Commission
ERCOT	Electric Reliability Council of Texas which is an entity that manages the flow of electric power to Texas customers representing approximately 90 percent of the state's electric load
Exchange Act	U.S. Securities Exchange Act of 1934, as amended
FASB	Financial Accounting Standards Board
FDIC	U.S. Federal Deposit Insurance Corporation
FERC	U.S. Federal Energy Regulatory Commission
First Lien Notes	Collectively, the 2022 First Lien Notes, the 2024 First Lien Notes, the 2026 First Lien Notes and the 2028 First Lien Notes
First Lien Term Loans	Collectively, the 2024 First Lien Term Loan and the 2026 First Lien Term Loans
Geysers Assets	Our geothermal power plant assets, including our steam extraction and gathering assets, located in northern California consisting of 13 operating power plants
GPC	Geysers Power Company, LLC, an indirect, wholly owned subsidiary of Calpine
GPC Term Loan	The $900 million first lien senior secured term loan and $200 million letter of credit facility dated as of June 9, 2020, among Geysers Power Company, LLC, the guarantors party thereto and MUFG Bank, Ltd, as administrative agent, MUFG Union Bank, N.A., as First Lien Collateral Agent, and the lenders and issuing banks parties thereto
Greenfield LP	Greenfield Energy Centre LP, a 50% partnership interest between certain of our subsidiaries and a third party which operates the Greenfield Energy Centre, a 1,038 MW natural gas-fired, combined-cycle power plant in Ontario, Canada
Heat Rate(s)	A measure of the amount of fuel required to produce a unit of power
IRS	U.S. Internal Revenue Service
ISO(s)	Independent System Operator(s), which is an entity that coordinates, controls and monitors the operation of an electric power system
ISO-NE	ISO New England Inc., an independent nonprofit RTO serving states in the New England area, including Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont
KWh	Kilowatt hour(s), a measure of power produced, purchased or sold
LIBOR	London Inter-Bank Offered Rate
Lyondell	LyondellBasell Industries N.V.

Market Heat Rate(s)	The regional power price divided by the corresponding regional natural gas price
MMBtu	Million Btu
MW	Megawatt(s), a measure of plant capacity
MWh	Megawatt hour(s), a measure of power produced, purchased or sold

ABBREVIATION	DEFINITION
NOL(s)	Net operating loss(es)
NYMEX	New York Mercantile Exchange
OCI	Other Comprehensive Income
OTC	Over-the-Counter
PG&E	Pacific Gas and Electric Company
PJM	PJM Interconnection is a RTO that coordinates the movement of wholesale electricity in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia
PPA(s)	Any term power purchase agreement or other contract for a physically settled sale (as distinguished from a financially settled future, option or other derivative or hedge transaction) of any power product, including power, capacity and/or ancillary services, in the form of a bilateral agreement or a written or oral confirmation of a transaction between two parties to a master agreement, including sales related to a tolling transaction in which the purchaser provides the fuel required by us to generate such power and we receive a variable payment to convert the fuel into power and steam
REC(s)	Renewable energy credit(s)
Risk Management Policy	Calpine's policy applicable to all employees, contractors, representatives and agents, which defines the risk management framework and corporate governance structure for commodity risk, interest rate risk, currency risk and other risks
RMR Contract(s)	Reliability Must Run contract(s)
RTO(s)	Regional Transmission Organization(s), which is an entity that coordinates, controls and monitors the operation of an electric power system and administers the transmission grid on a regional basis
SEC	U.S. Securities and Exchange Commission
Securities Act	U.S. Securities Act of 1933, as amended
Senior Unsecured Notes	Collectively, the 2023 Senior Unsecured Notes, the 2024 Senior Unsecured Notes, the 2025 Senior Unsecured Notes, the 2028 Senior Unsecured Notes, the 2029 Senior Unsecured Notes and the 2031 Senior Unsecured Notes
Spark Spread(s)	The difference between the sales price of power per MWh and the cost of natural gas to produce it
Steam Adjusted Heat Rate	The adjusted Heat Rate for our natural gas-fired power plants, excluding peakers, calculated by dividing (a) the fuel consumed in Btu reduced by the net equivalent Btu in steam exported to a third party by (b) the KWh generated. Steam Adjusted Heat Rate is a measure of fuel efficiency, so the lower our Steam Adjusted Heat Rate, the lower our cost of generation
Steamboat	Calpine Steamboat Holdings, LLC, an indirect, wholly owned subsidiary of Calpine
U.S. GAAP	Generally accepted accounting principles in the U.S.

VAR	Value-at-risk
VIE(s)	Variable interest entity(ies)

ABBREVIATION	DEFINITION
Whitby	Whitby Cogeneration Limited Partnership, a 50% partnership interest, which we sold on November 20, 2019, between certain of our subsidiaries and a third party, which operates Whitby, a 50 MW natural gas-fired, simple-cycle cogeneration power plant located in Ontario, Canada

Forward-Looking Statements

This Report contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act, and Section 21E of the Exchange Act. Forward-looking statements may appear throughout this Report, including without limitation, the "Management's Discussion and Analysis" section. We use words such as "believe," "intend," "expect," "anticipate," "plan," "may," "will," "should," "estimate," "potential," "project" and similar expressions to identify forward-looking statements. Such statements include, among others, those concerning our expected financial performance and strategic and operational plans, as well as all assumptions, expectations, predictions, intentions or beliefs about future events. We believe that the forward-looking statements are based upon reasonable assumptions and expectations. However, you are cautioned that any such forward-looking statements are not guarantees of future performance and that a number of risks and uncertainties could cause actual results to differ materially from those anticipated in the forward-looking statements. Such risks and uncertainties include, but are not limited to:

- Public health threats or outbreaks of communicable diseases, such as the ongoing COVID-19 pandemic and its impact on our business, suppliers, customers, employees and supply chains;
- Financial results that may be volatile and may not reflect historical trends due to, among other things, seasonality of demand, fluctuations in prices for commodities such as natural gas and power, changes in U.S. macroeconomic conditions, fluctuations in liquidity and volatility in the energy commodities markets and our ability and the extent to which we hedge risks;
- Laws, regulations and market rules in the wholesale and retail markets in which we participate and our ability to effectively respond to changes in laws, regulations or market rules or the interpretation thereof including those related to the environment, derivative transactions and market design in the regions in which we operate;
- Our ability to manage our liquidity needs, access the capital markets when necessary and comply with covenants under our Senior Unsecured Notes, First Lien Term Loans, First Lien Notes, Corporate Revolving Facility, CCFC Term Loan and other existing financing obligations;
- Risks associated with the operation, construction and development of power plants, including unscheduled outages or delays and plant efficiencies;
- Risks related to our geothermal resources, including the adequacy of our steam reserves, unusual or unexpected steam field well and pipeline maintenance requirements, variables associated with the injection of water to the steam reservoir and potential regulations or other requirements related to seismicity concerns that may delay or increase the cost of developing or operating geothermal resources;
- Extensive competition in our wholesale and retail businesses, including from renewable sources of power, interference by states in competitive power markets through subsidies or similar support for new or existing power plants, lower prices and other incentives offered by retail competitors, and other risks associated with marketing and selling power in the evolving energy markets;
- Structural changes in the supply and demand of power, resulting from the development of new fuels or technologies and demand-side management tools (such as distributed generation, power storage and other technologies);
- The expiration or early termination of our PPAs and the related results on revenues;
- Future capacity revenue may not occur at expected levels;
- Natural disasters, such as hurricanes, earthquakes, droughts and floods, acts of terrorism, cyber attacks or wildfires that may affect our power plants or the markets our power plants or retail operations serve and our corporate offices;
- Disruptions in or limitations on the transportation of natural gas or fuel oil and the transmission of power;
- Our ability to manage our counterparty and customer exposure and credit risk, including our commodity positions or if a significant customer were to seek bankruptcy protection under Chapter 11;
- Our ability to attract, motivate and retain key employees;
- Present and possible future claims, litigation and enforcement actions that may arise from noncompliance with market rules promulgated by the SEC, Commodity Futures Trading Commission, FERC and other regulatory bodies; and
- Other risks identified in this Report, in our 2019 Form 10-K and in other reports filed by us with the SEC.

Given the risks and uncertainties surrounding forward-looking statements, you should not place undue reliance on these statements. Many of these factors are beyond our ability to control or predict. Our forward-looking statements speak only as of the date of this Report. Other than as required by law, we undertake no obligation to update or revise forward-looking statements, whether as a result of new information, future events, or otherwise.

Where You Can Find Other Information

Our website is www.calpine.com. Information contained on our website is not part of this Report. Information that we furnish or file with the SEC, including our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and any amendments to, or exhibits included in, these reports are available for download, free of charge, through our website. Our SEC filings, including exhibits filed therewith, are also available directly on the SEC's website at www.sec.gov.

PART I — FINANCIAL INFORMATION

Item 1. ***Financial Statements***

CALPINE CORPORATION AND SUBSIDIARIES
CONSOLIDATED CONDENSED STATEMENTS OF OPERATIONS
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
	(in millions)			
Operating revenues:				
Commodity revenue	$ 1,852	$ 2,128	$ 3,795	$ 4,666
Mark-to-market gain (loss)	(113)	467	232	523
Other revenue	5	4	9	9
Operating revenues	1,744	2,599	4,036	5,198
Operating expenses:				
Fuel and purchased energy expense:				
Commodity expense	1,110	1,367	2,457	3,125
Mark-to-market (gain) loss	(148)	280	(4)	290
Fuel and purchased energy expense	962	1,647	2,453	3,415
Operating and maintenance expense	266	245	506	484
Depreciation and amortization expense	163	175	327	349
General and other administrative expense	31	34	62	66
Other operating expenses	14	19	31	38
Total operating expenses	1,436	2,120	3,379	4,352
Impairment losses	—	40	—	55
(Income) from unconsolidated subsidiaries	(4)	(5)	(4)	(11)
Income from operations	312	444	661	802
Interest expense	167	157	336	306
(Gain) loss on extinguishment of debt	8	3	8	(1)
Other (income) expense, net	5	5	9	28
Income before income taxes	132	279	308	469
Income tax expense (benefit)	(31)	9	15	19
Net income	163	270	293	450
Net income attributable to the noncontrolling interest	—	(4)	(2)	(9)
Net income attributable to Calpine	$ 163	$ 266	$ 291	$ 441

The accompanying notes are an integral part of these Consolidated Condensed Financial Statements.

CALPINE CORPORATION AND SUBSIDIARIES

CONSOLIDATED CONDENSED STATEMENTS OF COMPREHENSIVE INCOME
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
	(in millions)			
Net income	$ 163	$ 270	$ 293	$ 450
Cash flow hedging activities:				
Loss on cash flow hedges before reclassification adjustment for cash flow hedges realized in net income	(22)	(29)	(132)	(52)
Reclassification adjustment for (gain) loss on cash flow hedges realized in net income	25	(3)	31	(5)
Foreign currency translation gain (loss)	3	1	(4)	3
Income tax benefit (expense)	(1)	1	2	1
Other comprehensive income (loss)	5	(30)	(103)	(53)
Comprehensive income	168	240	190	397
Comprehensive (income) attributable to the noncontrolling interest	—	(3)	(2)	(8)
Comprehensive income attributable to Calpine	$ 168	$ 237	$ 188	$ 389

The accompanying notes are an integral part of these Consolidated Condensed Financial Statements.

CALPINE CORPORATION AND SUBSIDIARIES

CONSOLIDATED CONDENSED BALANCE SHEETS

(Unaudited)

	June 30, 2020	December 31, 2019
	(in millions, except share and per share amounts)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 677	$ 1,131
Accounts receivable, net of allowance of $9 and $9	683	757
Inventories	517	543
Margin deposits and other prepaid expense	346	367
Restricted cash, current	225	299
Derivative assets, current	199	156
Other current assets	42	49
Total current assets	2,689	3,302
Property, plant and equipment, net	11,937	11,963
Restricted cash, net of current portion	16	46
Investments in unconsolidated subsidiaries	67	70
Long-term derivative assets	250	246
Goodwill	242	242
Intangible assets, net	316	340
Other assets	438	440
Total assets	$ 15,955	$ 16,649
LIABILITIES & STOCKHOLDER’S EQUITY		
Current liabilities:		
Accounts payable	$ 569	$ 714
Accrued interest payable	108	61
Debt, current portion	231	1,268
Derivative liabilities, current	168	225
Other current liabilities	531	657
Total current liabilities	1,607	2,925
Debt, net of current portion	10,874	10,438
Long-term derivative liabilities	196	63
Other long-term liabilities	479	565
Total liabilities	13,156	13,991
Commitments and contingencies (see Note 9)		
Stockholder’s equity:		
Common stock, $0.001 par value per share; authorized 5,000 shares, 105.2 shares issued and outstanding	—	—
Additional paid-in capital	9,651	9,584
Accumulated deficit	(6,632)	(6,923)
Accumulated other comprehensive loss	(220)	(114)

Total Calpine stockholder’s equity	2,799	2,547
Noncontrolling interest	—	111
Total stockholder’s equity	2,799	2,658
Total liabilities and stockholder’s equity	$ 15,955	$ 16,649

The accompanying notes are an integral part of these Consolidated Condensed Financial Statements.

CALPINE CORPORATION AND SUBSIDIARIES

CONSOLIDATED CONDENSED STATEMENTS OF STOCKHOLDER’S EQUITY

For the Three and Six Months Ended June 30, 2020 and 2019
(Unaudited)
(in millions)

	Common Stock	Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Noncontrolling Interest	Total Stockholder’s Equity
Balance, December 31, 2019	$ —	$ 9,584	$ (6,923)	$ (114)	$ 111	$ 2,658
Net income	—	—	128	—	2	130
Other comprehensive loss	—	—	—	(108)	—	(108)
Acquisition of noncontrolling interest (Note 3)	—	67	—	(3)	(113)	(49)
Balance, March 31, 2020	$ —	$ 9,651	$ (6,795)	$ (225)	$ —	$ 2,631
Net income	—	—	163	—	—	163
Other comprehensive income	—	—	—	5	—	5
Balance, June 30, 2020	$ —	$ 9,651	$ (6,632)	$ (220)	$ —	2,799

	Common Stock	Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Noncontrolling Interest	Total Stockholder’s Equity
Balance, December 31, 2018	$ —	$ 9,582	$ (6,542)	$ (77)	$ 93	$ 3,056
Net income	—	—	175	—	5	180
Other comprehensive loss	—	—	—	(23)	—	(23)
Other	—	2	—	—	(2)	—
Balance, March 31, 2019	$ —	$ 9,584	$ (6,367)	$ (100)	$ 96	$ 3,213
Net income	—	—	266	—	4	270
Other comprehensive loss	—	—	—	(29)	(1)	(30)
Balance, June 30, 2019	$ —	$ 9,584	$ (6,101)	$ (129)	$ 99	$ 3,453

The accompanying notes are an integral part of these Consolidated Condensed Financial Statements.

CALPINE CORPORATION AND SUBSIDIARIES

CONSOLIDATED CONDENSED STATEMENTS OF CASH FLOWS
(Unaudited)

	Six Months Ended June 30,	
	2020	2019
	(in millions)	
Cash flows from operating activities:		
Net income	$ 293	$ 450
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization(1)	361	398
Loss on extinguishment of debt	6	—
Deferred income taxes	9	16
Impairment losses	—	55
Mark-to-market activity, net	(198)	(231)
(Income) from unconsolidated subsidiaries	(4)	(11)
Return on investments from unconsolidated subsidiaries	—	11
Other	10	(3)
Change in operating assets and liabilities:		
Accounts receivable	75	215
Accounts payable	(122)	(269)
Margin deposits and other prepaid expense	21	40
Other assets and liabilities, net	(146)	(61)
Derivative instruments, net	129	(91)
Net cash provided by operating activities	434	519
Cash flows from investing activities:		
Purchases of property, plant and equipment	(320)	(304)
Other	16	(11)
Net cash used in investing activities	(304)	(315)
Cash flows from financing activities:		
Borrowings under First Lien Term Loans	—	941
Repayment of CCFC Term Loan and First Lien Term Loans	(22)	(942)
Repayments of First Lien Notes	(429)	—
Repayments of Senior Unsecured Notes	(623)	(44)
Borrowings under revolving facilities	450	220
Repayments of revolving facilities	(450)	(175)
Borrowings from project financing, notes payable and other	900	34
Repayments of project financing, notes payable and other	(412)	(77)
Financing costs	(46)	(8)
Acquisition of noncontrolling interest(2) (Note 3)	(49)	—
Other	(7)	—
Net cash used in financing activities	(688)	(51)
Net increase (decrease) in cash, cash equivalents and restricted cash	(558)	153
Cash, cash equivalents and restricted cash, beginning of period	1,476	406

Cash, cash equivalents and restricted cash, end of period[3]	$ 918	$ 559

The accompanying notes are an integral part of these Consolidated Condensed Financial Statements.

CALPINE CORPORATION AND SUBSIDIARIES

CONSOLIDATED CONDENSED STATEMENTS OF CASH FLOWS — (CONTINUED)
(Unaudited)

	Six Months Ended June 30,	
	2020	2019
	(in millions)	
Cash paid during the period for:		
Interest, net of amounts capitalized	$ 221	$ 283
Income taxes	$ 2	$ 8
Supplemental disclosure of non-cash investing and financing activities:		
Change in capital expenditures included in accounts payable and other current liabilities	$ (27)	$ 19
Plant tax settlement offset in prepaid assets	$ —	$ (4)
Asset retirement obligation adjustment offset in operating activities	$ —	$ (10)
Garrison Energy Center and RockGen Energy Center property, plant and equipment, net, classified as current assets held for sale	$ —	$ (335)
Garrison Energy Center capital lease liability classified as current liabilities held for sale	$ —	$ 22

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(1) Includes amortization recorded in Commodity revenue and Commodity expense associated with intangible assets and amortization recorded in interest expense associated with debt issuance costs and discounts.

(2) On January 28, 2020, we completed the acquisition of the 25% noncontrolling interest of Russell City Energy Company, LLC for $35 million plus working capital adjustments of approximately $14 million for a total purchase price of approximately $49 million.

(3) Our cash and cash equivalents, restricted cash, current and restricted cash, net of current portion are stated as separate line items on our Consolidated Condensed Balance Sheets.

The accompanying notes are an integral part of these Consolidated Condensed Financial Statements.

CALPINE CORPORATION AND SUBSIDIARIES

NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS
June 30, 2020
(Unaudited)

1. Basis of Presentation and Summary of Significant Accounting Policies

We are one of the largest power generators in the U.S. We own and operate primarily natural gas-fired and geothermal power plants in North America and have a significant presence in major competitive wholesale and retail power markets in California, Texas, and the Northeast and mid-Atlantic regions of the U.S. We sell power, steam, capacity, renewable energy credits and ancillary services to our wholesale customers, which include utilities, independent electric system operators and industrial companies, retail power providers, municipalities, CCAs and other governmental entities and power marketers. Additionally, through our retail brands, we market retail energy and related products to commercial, industrial, governmental and residential customers. We continue to focus on providing products and services that are beneficial to our wholesale and retail customers. We purchase primarily natural gas and some fuel oil as fuel for our power plants and engage in related natural gas transportation and storage transactions. We also purchase power and related products for sale to our customers and purchase electric transmission rights to deliver power to our customers. Additionally, consistent with our Risk Management Policy, we enter into natural gas, power, environmental product, fuel oil and other physical and financial commodity contracts to hedge certain business risks and optimize our portfolio of power plants.

Basis of Interim Presentation — The accompanying unaudited, interim Consolidated Condensed Financial Statements of Calpine Corporation, a Delaware corporation, and consolidated subsidiaries have been prepared pursuant to the rules and regulations of the SEC. In the opinion of management, the Consolidated Condensed Financial Statements include the normal, recurring adjustments necessary for a fair statement of the information required to be set forth therein. Certain information and note disclosures, normally included in financial statements prepared in accordance with U.S. GAAP, have been condensed or omitted from these statements pursuant to such rules and regulations and, accordingly, these financial statements should be read in conjunction with our audited Consolidated Financial Statements for the year ended December 31, 2019, included in our 2019 Form 10-K. The results for interim periods are not indicative of the results for the entire year primarily due to acquisitions and disposals of assets, seasonal fluctuations in our revenues and expenses, timing of major maintenance expense, variations resulting from the application of the method to calculate the provision for income tax for interim periods, volatility of commodity prices and mark-to-market gains and losses from commodity and interest rate derivative contracts.

Use of Estimates in Preparation of Financial Statements — The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues, expenses and related disclosures included in our Consolidated Condensed Financial Statements. Actual results could differ from those estimates.

Cash and Cash Equivalents — We consider all highly liquid investments with an original maturity of three months or less to be cash equivalents. We have cash and cash equivalents held in non-corporate accounts relating to certain project finance facilities and lease agreements that require us to establish and maintain segregated cash accounts. These accounts have been pledged as security in favor of the lenders under such project finance facilities, and the use of certain cash balances on deposit in such accounts is limited, at least temporarily, to the operations of the respective projects.

Restricted Cash — Certain of our debt agreements, lease agreements or other operating agreements require us to establish and maintain segregated cash accounts, the use of which is restricted, making these cash funds unavailable for general use. These amounts are held by depository banks in order to comply with the contractual provisions requiring reserves for payments such as for debt service, rent and major maintenance or with applicable regulatory requirements. Funds that can be used to satisfy obligations due during the next 12 months are classified as current restricted cash, with the remainder classified as non-current restricted cash. Restricted cash is generally invested in accounts earning market rates; therefore, the carrying value approximates fair value. Such cash is excluded from cash and cash equivalents on our Consolidated Condensed Balance Sheets.

The table below represents the components of our restricted cash as of June 30, 2020 and December 31, 2019 (in millions):

	June 30, 2020			December 31, 2019		
	Current	Non-Current	Total	Current	Non-Current	Total
Debt service[1]	$ 55	$ 8	$ 63	$ 58	$ 8	$ 66
Construction/major maintenance[2]	35	7	42	28	6	34
Security/project/insurance[3]	130	—	130	209	31	240
Other	5	1	6	4	1	5
Total	$ 225	$ 16	$ 241	$ 299	$ 46	$ 345

(1) At June 30, 2020, includes $52 million in restricted cash that will be transferred to cash and cash equivalents during the third quarter of 2020 as a result of PG&E's emergence from bankruptcy.

(2) At June 30, 2020, includes $2 million in restricted cash that will be transferred to cash and cash equivalents during the third quarter of 2020 as a result of PG&E's emergence from bankruptcy.

(3) At December 31, 2019, includes $119 million in restricted cash associated with margin deposits received from PG&E that were returned to PG&E and replaced with letters of credit during the second quarter of 2020. At June 30, 2020, includes $34 million in restricted cash that will be transferred to cash and cash equivalents during the third quarter of 2020 as a result of PG&E's emergence from bankruptcy.

Accounts Receivable — Accounts receivable represents amounts due from customers. Accounts receivable are recorded at invoiced amounts, net of reserves and allowances, and do not bear interest as the balances are short term in nature. On January 1, 2020, we adopted the provisions of Accounting Standards Update 2016-13, "Measurement of Credit Losses on Financial Instruments" ("ASU 2016-13"). We use a variety of information to determine our allowance for expected credit losses based on multiple factors including the length of time receivables are past due, current and future economic trends and conditions affecting our customer base, significant one-time events, historical write-off experience and forward-looking information such as internally developed forecasts. See below for further information related to our adoption of ASU 2016-13.

Property, Plant and Equipment, Net — At June 30, 2020 and December 31, 2019, the components of property, plant and equipment are stated at cost less accumulated depreciation as follows (in millions):

	June 30, 2020	December 31, 2019	Depreciable Lives
Buildings, machinery and equipment	$ 16,488	$ 16,510	1.5 – 50 Years
Geothermal properties	1,595	1,553	13 – 58 Years
Other	282	291	3 – 50 Years
	18,365	18,354	
Less: Accumulated depreciation	6,907	6,851	
	11,458	11,503	
Land	128	128	
Construction in progress	351	332	
Property, plant and equipment, net	$ 11,937	$ 11,963	

Capitalized Interest — The total amount of interest capitalized was $3 million and $1 million during the three months ended June 30, 2020 and 2019, respectively, and $5 million and $8 million during the six months ended June 30, 2020 and 2019, respectively.

Goodwill — We assess the carrying amount of our goodwill annually for impairment during the third quarter and whenever events or changes in circumstances indicate that the carrying value may not be recoverable. We have not recorded any impairment losses or changes in the carrying amount of our goodwill during the three and six months ended June 30, 2020 and 2019.

Leases

Lessee — Supplemental balance sheet information related to our operating and finance leases is as follows as of June 30, 2020 and December 31, 2019 (in millions):

	Location on Consolidated Condensed Balance Sheet	June 30, 2020		December 31, 2019	
Right-of-use assets – operating leases	Other assets	$	165	$	171
Right-of-use assets – finance leases	Property, plant and equipment, net	$	102	$	107
Operating lease obligation, current	Other current liabilities	$	15	$	12
Operating lease obligation, long-term	Other long-term liabilities	$	164	$	170
Finance lease obligation, current	Debt, current portion	$	10	$	10
Finance lease obligation, long-term	Debt, net of current portion	$	58	$	63

Lessor — We apply lease accounting to PPAs that meet the definition of a lease and determine lease classification treatment at commencement of the agreement. Revenue recognized related to fixed lease payments on our operating leases was $57 million and $70 million during the three months ended June 30, 2020 and 2019, respectively, and $105 million and $139 million during the six months ended June 30, 2020 and 2019, respectively.

New Accounting Standards and Disclosure Requirements

Financial Instruments–Credit Losses — In June 2016, the FASB issued ASU 2016-13. The standard provides a new model for recognizing credit losses on financial assets carried at amortized cost using an estimate of expected credit losses, instead of the "incurred loss" methodology previously required for recognizing credit losses that delayed recognition until it was probable that a loss was incurred. The estimate of expected credit losses is to be based on consideration of past events, current conditions and reasonable and supportable forecasts of future conditions. The scope of the standard is limited to our trade account receivable balances and the standard is effective for fiscal years beginning after December 15, 2019. We adopted ASU 2016-13 on January 1, 2020 with no cumulative effect adjustment recognized upon adoption. The adoption of ASU 2016-13 did not have a material effect on our financial condition, results of operations or cash flows.

Fair Value Measurements — In August 2018, the FASB issued Accounting Standards Update 2018-13, “Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement.” The standard removes, modifies and adds disclosures about fair value measurements and is effective for fiscal years beginning after December 15, 2019. We adopted Accounting Standards Update 2018-13 on January 1, 2020, which did not have a material effect on our financial condition, results of operations or cash flows.

Income Taxes — In December 2019, the FASB issued Accounting Standards Update 2019-12, “Simplifying the Accounting for Income Taxes.” The standard is intended to simplify the accounting for income taxes by removing certain exceptions and improve consistent application by clarifying guidance related to the accounting for income taxes. The standard is effective for fiscal years beginning after December 15, 2020 with early adoption permitted including in interim periods. We adopted Accounting Standards Update 2019-12 on January 1, 2020, which did not have a material effect on our financial condition, results of operations or cash flows.

2. Revenue from Contracts with Customers

Disaggregation of Revenues with Customers

The following tables represent a disaggregation of our operating revenues for the three and six months ended June 30, 2020 and 2019 by reportable segment (in millions). See Note 11 for a description of our segments.

	Three Months Ended June 30, 2020					
	Wholesale					
	West	Texas	East	Retail	Elimination	Total
Third Party:						
Energy & other products	$ 163	$ 254	$ 99	$ 322	$ —	$ 838
Capacity	66	28	104	—	—	198
Revenues relating to physical or executory contracts – third party	$ 229	$ 282	$ 203	$ 322	$ —	$ 1,036
Affiliate[(1)]*:*	$ 9	$ 10	$ 20	$ 2	$ (41)	$ —
Revenues relating to leases and derivative instruments[(2)]						$ 707
Other						1
Total operating revenues						$ 1,744

	Three Months Ended June 30, 2019					
	Wholesale					
	West	Texas	East	Retail	Elimination	Total
Third Party:						
Energy & other products	$ 145	$ 318	$ 124	$ 413	$ —	$ 1,000
Capacity	36	33	154	—	—	223
Revenues relating to physical or executory contracts – third party	$ 181	$ 351	$ 278	$ 413	$ —	$ 1,223
Affiliate[(1)]*:*	$ 6	$ 14	$ 30	$ 1	$ (51)	$ —
Revenues relating to leases and derivative instruments[(2)]						$ 1,376
Total operating revenues						$ 2,599

	Six Months Ended June 30, 2020					
	Wholesale					
	West	Texas	East	Retail	Elimination	Total
Third Party:						
Energy & other products	$ 364	$ 473	$ 205	$ 646	$ —	$ 1,688
Capacity	128	56	209	—	—	393
Revenues relating to physical or executory contracts – third party	$ 492	$ 529	$ 414	$ 646	$ —	$ 2,081
Affiliate[(1)]*:*	$ 26	$ 20	$ 39	$ 3	$ (88)	$ —
Revenues relating to leases and derivative instruments[(2)]						$ 1,953

Other	2
Total operating revenues	$ 4,036

	Six Months Ended June 30, 2019					
	Wholesale					
	West	Texas	East	Retail	Elimination	Total
Third Party:						
Energy & other products	$ 437	$ 620	$ 327	$ 825	$ —	$ 2,209
Capacity	71	65	331	—	—	467
Revenues relating to physical or executory contracts – third party	$ 508	$ 685	$ 658	$ 825	$ —	$ 2,676
Affiliate[(1)]:	$ 17	$ 28	$ 57	$ 4	$ (106)	$ —
Revenues relating to leases and derivative instruments[(2)]						$ 2,522
Total operating revenues						$ 5,198

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(1) Affiliate energy, other and capacity revenues reflect revenues on transactions between wholesale and retail affiliates excluding affiliate activity related to leases and derivative instruments. All such activity supports retail supply needs from the wholesale business and/or allows for collateral margin netting efficiencies at Calpine.

(2) Revenues relating to contracts accounted for as leases and derivatives include energy and capacity revenues relating to PPAs that we are required to account for as operating leases and physical and financial commodity derivative contracts, primarily relating to power, natural gas and environmental products. Revenue related to derivative instruments includes revenue recorded in Commodity revenue and mark-to-market gain (loss) within our operating revenues on our Consolidated Condensed Statements of Operations.

Performance Obligations and Contract Balances

At June 30, 2020 and December 31, 2019, deferred revenue balances relating to contracts with our customers were included in other current liabilities on our Consolidated Condensed Balance Sheets and primarily relate to sales of environmental products and capacity. We classify deferred revenue as current or long-term based on the timing of when we expect to recognize revenue. The balance outstanding at June 30, 2020 and December 31, 2019 was $27 million and $14 million, respectively. The revenue recognized during the three months ended June 30, 2020 and 2019, relating to the deferred revenue balance at the beginning of each period was $2 million and $2 million, respectively. The revenue recognized during the six months ended June 30, 2020 and 2019, relating to the deferred revenue balance at the beginning of each period was $2 million and $3 million, respectively. Revenue recognized each period relating to deferred revenue balances resulted from our performance under the customer contracts. The change in the deferred revenue balance during the three and six months ended June 30, 2020 and 2019 was primarily due to the timing difference of when consideration was received and when the related good or service was transferred.

Performance Obligations not yet Satisfied

As of June 30, 2020, we have entered into certain contracts for fixed and determinable amounts with customers under which we have not yet completed our performance obligations which primarily includes agreements for which we are providing capacity from our generating facilities. We have revenues related to the sale of capacity through participation in various ISO capacity auctions estimated based upon cleared volumes and the sale of capacity to our customers of $346 million, $672 million, $449 million, $330 million and $203 million that will be recognized during the years ending December 31, 2020, 2021, 2022, 2023 and 2024, respectively, and $108 million thereafter. Revenues under these contracts will be recognized as we transfer control of the commodities to our customers.

3. Variable Interest Entities and Unconsolidated Investments

We consolidate all of our VIEs where we have determined that we are the primary beneficiary. There were no changes to our determination of whether we are the primary beneficiary of our VIEs for the six months ended June 30, 2020. See Note 7 in our 2019 Form 10-K for further information regarding our VIEs.

Consolidated VIEs

Our consolidated VIEs include natural gas-fired and geothermal power plants with an aggregate capacity of 7,354 MW and 6,669 MW at June 30, 2020 and December 31, 2019, respectively. For these VIEs, we may provide other operational and administrative support through various affiliate contractual arrangements among the VIEs, Calpine Corporation and its other wholly owned subsidiaries whereby we support the VIE through the reimbursement of costs and/or the purchase and sale of energy. Other than amounts contractually required, we provided no additional material support to our VIEs in the form of cash and other contributions during each of the three and six months ended June 30, 2020 and 2019.

The table below has been updated to incorporate GPC as a consolidated VIE following the issuance of the GPC Term Loan during the second quarter of 2020. The table details summarized financial information (excluding intercompany balances which are eliminated in consolidation) for our consolidated VIEs as of June 30, 2020 and December 31, 2019 (in millions):

	June 30, 2020	December 31, 2019
Assets:		
Current assets	$ 371	$ 371
Property, plant and equipment, net	3,846	3,454
Restricted cash, net of current portion	16	15
Other assets	151	53
Total assets	$ 4,384	$ 3,893
Liabilities:		
Current liabilities	$ 250	$ 303
Debt, net of current portion	2,083	1,635
Long-term derivative liabilities	10	8
Other long-term liabilities	60	53
Total liabilities	$ 2,403	$ 1,999

Noncontrolling Interest — On January 28, 2020, we completed the acquisition of the 25% noncontrolling interest of Russell City Energy Company, LLC, which was owned by a third party, for $35 million plus working capital adjustments of approximately $14 million for a total purchase price of approximately $49 million, resulting in a $67 million increase to additional paid-in capital. Prior to the acquisition, we accounted for the third party ownership interest as a noncontrolling interest.

Unconsolidated VIEs and Investments in Unconsolidated Subsidiaries

We have a 50% partnership interest in Greenfield LP which is also a VIE; however, we do not have the power to direct the most significant activities of this entity and therefore do not consolidate it. Greenfield LP is a limited partnership between certain subsidiaries of ours and of Mitsui & Co., Ltd., which operates the Greenfield Energy Centre, a 1,038 MW natural gas-fired, combined-cycle power plant located in Ontario, Canada.

Calpine Receivables is a VIE and a bankruptcy remote entity created for the special purpose of purchasing trade accounts receivable from Calpine Solutions under the Accounts Receivable Sales Program. We have determined that we do not have the power to direct the activities of the VIE that most significantly affect the VIE's economic performance nor the obligation to absorb losses or receive benefits from the VIE. Accordingly, we have determined that we are not the primary beneficiary of Calpine Receivables because we do not have the power to affect its financial performance as the unaffiliated financial institutions that purchase the receivables from Calpine Receivables control the selection criteria of the receivables sold and appoint the servicer of the receivables which controls management of default. Thus, we do not consolidate Calpine Receivables in our Consolidated Condensed Financial Statements and use the equity method of accounting to record our net interest in Calpine Receivables.

We account for these entities under the equity method of accounting and include our net equity interest in investments in unconsolidated subsidiaries on our Consolidated Condensed Balance Sheets. At June 30, 2020 and December 31, 2019, our equity method investments included on our Consolidated Condensed Balance Sheets were comprised of the following (in millions):

	Ownership Interest as of June 30, 2020	June 30, 2020		December 31, 2019	
Greenfield LP[1]	50%	$	63	$	66
Calpine Receivables	100%		4		4
Total investments in unconsolidated subsidiaries		$	67	$	70

(1) Includes our share of AOCI related to interest rate hedging instruments associated with our unconsolidated subsidiary Greenfield LP's debt.

Our risk of loss related to our investment in Greenfield LP is limited to our investment balance. Our risk of loss related to our investment in Calpine Receivables is $51 million which consists of our notes receivable from Calpine Receivables at June 30, 2020 and our initial investment associated with Calpine Receivables. See Note 10 for further information associated with our related party activity with Calpine Receivables.

Holders of the debt of our unconsolidated investments do not have recourse to Calpine Corporation and its other subsidiaries; therefore, the debt of our unconsolidated investments is not reflected on our Consolidated Condensed Balance Sheets. At June 30, 2020 and December 31, 2019, Greenfield LP's debt was approximately $276 million and $299 million, respectively, and based on our pro rata share of our investment in Greenfield LP, our share of such debt would be approximately $138 million and $150 million at June 30, 2020 and December 31, 2019, respectively.

Our equity interest in the net income from our investments in unconsolidated subsidiaries for the three and six months ended June 30, 2020 and 2019, is recorded in (income) from unconsolidated subsidiaries. The following table sets forth details of our (income) from unconsolidated subsidiaries for the periods indicated (in millions):

	Three Months Ended June 30,				Six Months Ended June 30,			
	2020		2019		2020		2019	
Greenfield LP	$	(3)	$	(4)	$	(4)	$	(6)
Whitby[1]		—		(2)		—		(6)
Calpine Receivables		(1)		1		—		1
Total	$	(4)	$	(5)	$	(4)	$	(11)

(1) On November 20, 2019, we sold our 50% interest in Whitby to a third party.

Distributions from Greenfield LP were nil during each of the three and six months ended June 30, 2020 and 2019. Distributions from Whitby were nil and $11 million during the three and six months ended June 30, 2019, respectively. We did not have material distributions from our investment in Calpine Receivables for the three and six months ended June 30, 2020 and 2019.

4. Debt

Our debt at June 30, 2020 and December 31, 2019, was as follows (in millions):

	June 30, 2020	December 31, 2019
First Lien Term Loans	$ 3,155	$ 3,167
Senior Unsecured Notes	3,042	3,663
First Lien Notes	2,408	2,835
CCFC Term Loan	962	967
GPC Term Loan	867	—
Project financing, notes payable and other	481	879
Finance lease obligations	68	73
Revolving facilities	122	122
Subtotal	11,105	11,706
Less: Current maturities	231	1,268
Total long-term debt	$ 10,874	$ 10,438

Our effective interest rate on our consolidated debt, excluding the effects of capitalized interest and mark-to-market gains (losses) on interest rate hedging instruments, decreased to 5.3% for the six months ended June 30, 2020, from 5.9% for the same period in 2019.

First Lien Term Loans

The amounts outstanding under our First Lien Term Loans are summarized in the table below (in millions):

	June 30, 2020	December 31, 2019
2024 First Lien Term Loan	$ 1,508	$ 1,514
2026 First Lien Term Loans	1,647	1,653
Total First Lien Term Loans	$ 3,155	$ 3,167

Senior Unsecured Notes

The amounts outstanding under our Senior Unsecured Notes are summarized in the table below (in millions):

	June 30, 2020	December 31, 2019
2023 Senior Unsecured Notes(1)	$ —	$ 623
2024 Senior Unsecured Notes(2)	479	479
2025 Senior Unsecured Notes(2)	1,175	1,174
2028 Senior Unsecured Notes(1)	1,388	1,387
Total Senior Unsecured Notes	$ 3,042	$ 3,663

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(1) On January 21, 2020, we redeemed the outstanding $623 million in aggregate principal amount of our 2023 Senior Unsecured Notes, which was included in debt, current portion on our Consolidated Condensed Balance Sheet at December 31, 2019, with the proceeds from the 2028 Senior Unsecured Notes, which was included in cash and cash equivalents on our Consolidated Condensed Balance Sheet at December 31, 2019.

(2) On August 10, 2020, we utilized proceeds from our 2029 Senior Unsecured Notes and 2031 Senior Unsecured Notes, together with cash on hand, to purchase approximately $255 million and $1,045 million in aggregate principal amount of our 2024 Senior Unsecured Notes and 2025 Senior Unsecured Notes, respectively. On August 12, 2020, we redeemed the remaining amounts outstanding under our 2024 Senior Unsecured Notes and 2025 Senior Unsecured Notes.

On August 10, 2020, we issued $650 million in aggregate principal amount of 4.625% senior unsecured notes due 2029 and $850 million in aggregate principal amount of 5.000% senior unsecured notes due 2031 in private placements. The 2029 Senior Unsecured Notes bear interest at 4.625% per annum and the 2031 Senior Unsecured Notes bear interest at 5.000% per annum with interest payable on both series of notes semi-annually on February 1 and August 1 of each year, beginning on February 1, 2021. The 2029 Senior Unsecured Notes and 2031 Senior Unsecured Notes mature on February 1, 2029 and February 1, 2031, respectively. We used the net proceeds from the 2029 Senior Unsecured Notes and 2031 Senior Unsecured Notes, together with cash on hand, to pay the consideration in connection with the tender offers and redeem any of the 2024 Senior Unsecured Notes and 2025 Senior Unsecured Notes not tendered in connection with the tender offers.

First Lien Notes

The amounts outstanding under our First Lien Notes are summarized in the table below (in millions):

	June 30, 2020	December 31, 2019
2022 First Lien Notes(1)	$ —	$ 245
2024 First Lien Notes(2)	—	184
2026 First Lien Notes	1,173	1,172
2028 First Lien Notes	1,235	1,234
Total First Lien Notes	$ 2,408	$ 2,835

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(1) On January 21, 2020, we redeemed the outstanding $245 million in aggregate principal amount of our 2022 First Lien Notes, which was included in debt, current portion on our Consolidated Condensed Balance Sheet at December 31, 2019, with the proceeds from the 2028 First Lien Notes, which was included in cash and cash equivalents on our Consolidated Condensed Balance Sheet at December 31, 2019.

(2) On January 21, 2020, we redeemed the outstanding $184 million in aggregate principal amount of our 2024 First Lien Notes, which was included in debt, current portion on our Consolidated Condensed Balance Sheet at December 31, 2019, with the proceeds from the 2028 First Lien Notes, which was included in cash and cash equivalents on our Consolidated Condensed Balance Sheet at December 31, 2019.

GPC Term Loan

On June 9, 2020, GPC and the guarantors party thereto entered into a seven-year $900 million first lien senior secured term loan facility and three senior secured revolving letter of credit facilities totaling $200 million. The GPC Term Loan is certified under the Climate Bonds Standard. Any letters of credit issued under the GPC Term Loan letter of credit facilities must be at the request of and for the account of GPC. The GPC Term Loan bears interest, at GPC's option, at either (i) the Base Rate, equal to the highest of (a) the Federal Funds Rate plus 0.50% per annum, (b) the prime rate published in the Wall Street Journal, or (c) 1.0% plus an applicable margin of 1.0%, increasing by 0.125% every three years, or (ii) LIBOR plus an applicable margin of 2.0% per annum, increasing by 0.125% every three years. The GPC Term Loan matures on June 9, 2027, but may be prepaid at any time upon irrevocable notice to the Administrative Agent. We used a portion of the proceeds from the GPC Term Loan to repay project debt associated with Steamboat as further discussed below.

The GPC Term Loan is secured by certain real and personal property of GPC consisting primarily of the Geysers Assets. The GPC Term Loan is not guaranteed by Calpine Corporation and is without recourse to Calpine Corporation or any of our non-GPC subsidiaries or assets; however, GPC generates a portion of its cash flows from an intercompany tolling agreement with Calpine Energy Services, L.P. and has various service agreements in place with other subsidiaries of Calpine Corporation.

Project Financing, Notes Payable and Other

On June 12, 2020, we used a portion of the proceeds from the GPC Term Loan to repay approximately $342 million in carrying value of project debt associated with Steamboat and recorded approximately $8 million in loss on extinguishment of debt during the second quarter of 2020.

On July 1, 2020, PG&E and PG&E Corporation emerged from bankruptcy. Our Russell City Energy Center and Los Esteros Critical Energy Facility sell energy and energy-related products to PG&E through PPAs. Subsequent to the bankruptcy filing, we received all material payments under the PPAs, either directly or through the application of collateral. As a result of PG&E's bankruptcy, we were temporarily unable to make distributions from our Russell City and Los Esteros projects in accordance with the terms of the project debt agreements associated with each related project. Under PG&E's plan of reorganization, our PPAs were assumed and any restrictions on distributing cash from our Russell City and Los Esteros projects were cured. Additionally, the forbearance agreements associated with our Russell City and Los Esteros project debt agreements were terminated in accordance with the terms of the agreements. Accordingly, following removal of bankruptcy proceeding restrictions, our Russell City and Los Esteros projects will distribute funds in the amount of $88 million to Calpine Corporation in August 2020.

Corporate Revolving Facility and Other Letter of Credit Facilities

The table below represents amounts issued under our letter of credit facilities at June 30, 2020 and December 31, 2019 (in millions):

	June 30, 2020	December 31, 2019
Corporate Revolving Facility[1]	$ 462	$ 604
CDHI	3	3
Various project financing facilities[2]	336	184
Other corporate facilities[3]	275	294
Total	$ 1,076	$ 1,085

(1) The Corporate Revolving Facility represents our primary revolving facility and matures on March 8, 2023.

(2) On June 9, 2020, we entered into the GPC Term Loan which provides for $200 million in letter of credit facilities.

(3) On April 9, 2020, we amended one of our unsecured letter of credit facilities to partially extend the maturity of $100 million in commitments from June 20, 2020 to June 20, 2022.

Fair Value of Debt

We record our debt instruments based on contractual terms, net of any applicable premium or discount and debt issuance costs. The following table details the fair values and carrying values of our debt instruments at June 30, 2020 and December 31, 2019 (in millions):

	June 30, 2020		December 31, 2019	
	Fair Value	Carrying Value	Fair Value	Carrying Value
First Lien Term Loans	$ 3,081	$ 3,155	$ 3,238	$ 3,167
Senior Unsecured Notes	3,027	3,042	3,764	3,663
First Lien Notes	2,404	2,408	2,929	2,835
CCFC Term Loan	941	962	982	967
GPC Term Loan	900	867	—	—
Project financing, notes payable and other[1]	426	419	822	817
Revolving facilities	122	122	122	122
Total	$ 10,901	$ 10,975	$ 11,857	$ 11,571

(1) Excludes an agreement that is accounted for as a failed sale-leaseback transaction under U.S. GAAP.

Our First Lien Term Loans, Senior Unsecured Notes, First Lien Notes and CCFC Term Loan are categorized as level 2 within the fair value hierarchy. Our GPC Term Loan, revolving facilities and project financing, notes payable and other debt instruments are categorized as level 3 within the fair value hierarchy. We do not have any debt instruments with fair value measurements categorized as level 1 within the fair value hierarchy.

5. Assets and Liabilities with Recurring Fair Value Measurements

Cash Equivalents — Highly liquid investments which meet the definition of cash equivalents, primarily investments in money market accounts and other interest-bearing accounts, are included in both our cash and cash equivalents and our restricted cash on our Consolidated Condensed Balance Sheets. Certain of our money market accounts invest in U.S. Treasury securities or other obligations issued or guaranteed by the U.S. Government, its agencies or instrumentalities. We do not have any cash equivalents invested in institutional prime money market funds which require use of a floating net asset value and are subject to liquidity fees and redemption restrictions. Certain of our cash equivalents are classified within level 1 of the fair value hierarchy.

Derivatives — The primary factors affecting the fair value of our derivative instruments at any point in time are the volume of open derivative positions (MMBtu, MWh and $ notional amounts); changing commodity market prices, primarily for power and natural gas; our credit standing and that of our counterparties and customers for energy commodity derivatives; and prevailing interest rates for our interest rate hedging instruments. Prices for power and natural gas and interest rates are volatile, which can result in material changes in the fair value measurements reported in our financial statements in the future.

We utilize market data, such as pricing services and broker quotes, and assumptions that we believe market participants would use in pricing our assets or liabilities including assumptions about the risks inherent to the inputs in the valuation technique. These inputs can be readily observable, market corroborated or generally unobservable. The market data obtained from broker pricing services is evaluated to determine the nature of the quotes obtained and, where accepted as a reliable quote, used to validate our assessment of fair value. We use other qualitative assessments to determine the level of activity in any given market. We primarily apply the market approach and income approach for recurring fair value measurements and utilize what we believe to be the best available information. We utilize valuation techniques that seek to maximize the use of observable inputs and minimize the use of unobservable inputs. We classify fair value balances based on the observability of those inputs.

The fair value of our derivatives includes consideration of our credit standing, the credit standing of our counterparties and customers and the effect of credit enhancements, if any. We have also recorded credit reserves in the determination of fair value based on our expectation of how market participants would determine fair value. Such valuation adjustments are generally based on market evidence, if available, or our best estimate.

Our level 1 fair value derivative instruments primarily consist of power and natural gas swaps, futures and options traded on the NYMEX or Intercontinental Exchange.

Our level 2 fair value derivative instruments primarily consist of interest rate hedging instruments and OTC power and natural gas forwards for which market-based pricing inputs in the principal or most advantageous market are representative of executable prices for market participants. These inputs are observable at commonly quoted intervals for substantially the full term of the instruments. In certain instances, our level 2 derivative instruments may utilize models to measure fair value. These models are industry-standard models, including the Black-Scholes option-pricing model, that incorporate various assumptions, including quoted interest rates, correlation, volatility, as well as other relevant economic measures. Substantially all of these assumptions are observable in the marketplace throughout the full term of the instrument, can be derived from observable data or are supported by observable levels at which transactions are executed in the marketplace.

Our level 3 fair value derivative instruments may consist of OTC power and natural gas forwards and options where pricing inputs are unobservable, as well as other complex and structured transactions primarily for the sale and purchase of power and natural gas to both wholesale counterparties and retail customers. Complex or structured transactions are tailored to our customers' needs and can introduce the need for internally-developed model inputs which might not be observable in or corroborated by the market. When such inputs have a significant effect on the measurement of fair value, the instrument is categorized in level 3. Our valuation models may incorporate historical correlation information and extrapolate available broker and other information to future periods.

Financial assets and liabilities are classified in their entirety based on the lowest level of input that is significant to the fair value measurement at period end. Our assessment of the significance of a particular input to the fair value measurement requires judgment and may affect our estimate of the fair value of our assets and liabilities and their placement within the fair value hierarchy levels. The following tables present our assets and liabilities that were accounted for at fair value on a recurring basis as of June 30, 2020 and December 31, 2019, by level within the fair value hierarchy:

	Assets and Liabilities with Recurring Fair Value Measures as of June 30, 2020			
	Level 1	Level 2	Level 3	Total
	(in millions)			
Assets:				
Cash equivalents[1]	$ 417	$ —	$ —	$ 417
Commodity instruments:				
Commodity exchange traded derivatives contracts	991	—	—	991
Commodity forward contracts[2]	—	424	364	788
Interest rate hedging instruments	—	—	—	—
Effect of netting and allocation of collateral[3][4]	(991)	(299)	(40)	(1,330)
Total assets	$ 417	$ 125	$ 324	$ 866
Liabilities:				
Commodity instruments:				
Commodity exchange traded derivatives contracts	$ 1,001	$ —	$ —	$ 1,001
Commodity forward contracts[2]	—	421	118	539
Interest rate hedging instruments	—	161	—	161
Effect of netting and allocation of collateral[3][4]	(1,001)	(296)	(40)	(1,337)
Total liabilities	$ —	$ 286	$ 78	$ 364

	Assets and Liabilities with Recurring Fair Value Measures as of December 31, 2019			
	Level 1	Level 2	Level 3	Total
	(in millions)			
Assets:				
Cash equivalents[1]	$ 784	$ —	$ —	$ 784
Commodity instruments:				
Commodity exchange traded derivatives contracts	872	—	—	872
Commodity forward contracts[2]	—	245	294	539
Interest rate hedging instruments	—	12	—	12
Effect of netting and allocation of collateral[3][4]	(872)	(131)	(18)	(1,021)
Total assets	$ 784	$ 126	$ 276	$ 1,186
Liabilities:				
Commodity instruments:				
Commodity exchange traded derivatives contracts	$ 984	$ —	$ —	$ 984
Commodity forward contracts[2]	—	285	123	408
Interest rate hedging instruments	—	31	—	31
Effect of netting and allocation of collateral[3][4]	(984)	(133)	(18)	(1,135)
Total liabilities	$ —	$ 183	$ 105	$ 288

(1) At June 30, 2020 and December 31, 2019, we had cash equivalents of $190 million and $573 million included in cash and cash equivalents and $227 million and $211 million included in restricted cash, respectively.

(2) Includes OTC swaps and options.

(3) We offset fair value amounts recognized for derivative instruments executed with the same counterparty under a master netting arrangement for financial statement presentation; therefore, amounts recognized for the right to reclaim, or the obligation to return, cash collateral are presented net with the corresponding derivative instrument fair values. See Note 6 for further discussion of our derivative instruments subject to master netting arrangements.

(4) Cash collateral posted with (received from) counterparties allocated to level 1, level 2 and level 3 derivative instruments totaled $10 million, $(3) million and nil, respectively, at June 30, 2020. Cash collateral posted with (received from) counterparties allocated to level 1, level 2 and level 3 derivative instruments totaled $112 million, $2 million and nil, respectively, at December 31, 2019.

At June 30, 2020 and December 31, 2019, the derivative instruments classified as level 3 primarily included commodity contracts. The fair value of the net derivative position classified as level 3 is predominantly driven by market commodity prices. The following table presents quantitative information for the unobservable inputs used in our most significant level 3 fair value measurements at June 30, 2020 and December 31, 2019:

Quantitative Information about Level 3 Fair Value Measurements

	June 30, 2020								
	Fair Value, Net Asset (Liability) (in millions)	Valuation Technique	Significant Unobservable Input	Range				Average[2]	
Power Contracts[1]	$ 206	Discounted cash flow	Market price (per MWh)	$ 3.18	—	$175.51	/MWh	$	28.97
Power Congestion Products	$ 6	Discounted cash flow	Market price (per MWh)	$ (6.48)	—	$11.88	/MWh	$	1.20
Natural Gas Contracts	$ 9	Discounted cash flow	Market price (per MMBtu)	$ 1.33	—	$4.62	/MMBtu	$	2.82

	December 31, 2019						
	Fair Value, Net Asset (Liability) (in millions)	Valuation Technique	Significant Unobservable Input	Range			
Power Contracts[1]	$ 158	Discounted cash flow	Market price (per MWh)	$ 4.85	—	$184.15	/MWh
Power Congestion Products	$ 17	Discounted cash flow	Market price (per MWh)	$ (10.32)	—	$20	/MWh
Natural Gas Contracts	$ (20)	Discounted cash flow	Market price (per MMBtu)	$ 1.73	—	$6.45	/MMBtu

(1) Power contracts include power and heat rate instruments classified as level 3 in the fair value hierarchy.

(2) Amount represents the arithmetic average of the significant unobservable input based on the range disclosed.

The following table sets forth a reconciliation of changes in the fair value of our net derivative assets (liabilities) classified as level 3 in the fair value hierarchy for the periods indicated (in millions):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Balance, beginning of period	$ 249	$ 105	$ 171	$ (8)
Realized and mark-to-market gains (losses):				
Included in net income:				
Included in operating revenues[1]	37	152	106	197
Included in fuel and purchased energy expense[2]	3	1	(1)	2
Change in collateral	—	(1)	—	1
Purchases, Issuances and settlements:				
Purchases	1	1	1	3
Issuances	—	(1)	—	(1)
Settlements	(49)	(35)	(36)	28
Transfers in and/or out of level 3:				
Transfers into level 3[3]	10	6	11	7
Transfers out of level 3[4]	(5)	(1)	(6)	(2)
Balance, end of period	$ 246	$ 227	$ 246	$ 227
Change in unrealized gains (losses) included in net income relating to instruments still held at end of period	$ 40	$ 153	$ 105	$ 199

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(1) For power contracts and other power-related products, included on our Consolidated Condensed Statements of Operations.

(2) For natural gas and power contracts, swaps and options, included on our Consolidated Condensed Statements of Operations.

(3) We had $10 million and $6 million in gains transferred out of level 2 into level 3 for the three months ended June 30, 2020 and 2019, respectively, and $11 million and $7 million in gains transferred out of level 2 into level 3 for the six months ended June 30, 2020 and 2019, respectively, due to changes in market liquidity in various power markets.

(4) We had $5 million and $1 million in gains transferred out of level 3 into level 2 for the three months ended June 30, 2020 and 2019, respectively, and $6 million and $2 million in gains transferred out of level 3 into level 2 for the six months ended June 30, 2020 and 2019, respectively, due to changes in market liquidity in various power markets.

6. Derivative Instruments

Types of Derivative Instruments and Volumetric Information

Commodity Instruments — We are exposed to changes in prices for the purchase and sale of power, natural gas, fuel oil, environmental products and other energy commodities. We use derivatives, which include physical commodity contracts and financial commodity instruments such as OTC and exchange traded swaps, futures, options, forward agreements and instruments that settle on the power price to natural gas price relationships (Heat Rate swaps and options) or instruments that settle on power or natural gas price relationships between delivery points for the purchase and sale of power and natural gas to attempt to maximize the risk-adjusted returns by economically hedging a portion of the commodity price risk associated with our assets. By entering into these transactions, we are able to economically hedge a portion of our Spark Spread at estimated generation and prevailing price levels.

We also engage in limited trading activities related to our commodity derivative portfolio as authorized by our Board of Directors and monitored by our Chief Risk Officer and Risk Management Committee of senior management. These transactions are executed primarily for the purpose of providing improved price and price volatility discovery, greater market access, and profiting from our market knowledge, all of which benefit our asset hedging activities. Our trading results were not material for each of the three and six months ended June 30, 2020 and 2019.

Interest Rate Hedging Instruments — A portion of our debt is indexed to base rates, primarily LIBOR. We have historically used interest rate hedging instruments to adjust the mix between fixed and variable rate debt to hedge our interest rate risk for

potential adverse changes in interest rates. As of June 30, 2020, the maximum length of time over which we were hedging using interest rate hedging instruments designated as cash flow hedges was 7 years.

As of June 30, 2020 and December 31, 2019, the net forward notional buy (sell) position of our outstanding commodity derivative instruments that did not qualify or were not designated under the normal purchase normal sale exemption and our interest rate hedging instruments were as follows:

	Notional Amounts		
Derivative Instruments	**June 30, 2020**	**December 31, 2019**	**Unit of Measure**
Power	(242)	(184)	Million MWh
Natural gas	1,165	1,063	Million MMBtu
Environmental credits	36	26	Million Tonnes
Interest rate hedging instruments[1]	$ 7.0	$ 4.8	Billion U.S. dollars

(1) During the first half of 2020, we entered into interest rate hedging instruments to hedge approximately $2.4 billion of variable rate debt.

Certain of our derivative instruments contain credit risk-related contingent provisions that require us to maintain collateral balances consistent with our credit ratings. If our credit rating were to be downgraded, it could require us to post additional collateral or could potentially allow our counterparty to request immediate, full settlement on certain derivative instruments in liability positions. The aggregate fair value of our derivative liabilities with credit risk-related contingent provisions as of June 30, 2020, was $120 million for which we have posted collateral of $37 million by posting margin deposits, letters of credit or granting additional first priority liens on the assets currently subject to first priority liens under our First Lien Notes, First Lien Term Loans and Corporate Revolving Facility. However, if our credit rating were downgraded by one notch from its current level, we estimate that $6 million of additional collateral would be required and that no counterparty could request immediate, full settlement.

Accounting for Derivative Instruments

We recognize all derivative instruments that qualify for derivative accounting treatment as either assets or liabilities and measure those instruments at fair value unless they qualify for, and we elect, the normal purchase normal sale exemption. For transactions in which we elect the normal purchase normal sale exemption, gains and losses are not reflected on our Consolidated Condensed Statements of Operations until the period of delivery. Revenues and expenses derived from instruments that qualified for hedge accounting or represent an economic hedge are recorded in the same financial statement line item as the item being hedged. Hedge accounting requires us to formally document, designate and assess the effectiveness of transactions that receive hedge accounting. We present the cash flows from our derivatives in the same category as the item being hedged (or economically hedged) within operating activities on our Consolidated Condensed Statements of Cash Flows unless they contain an other-than-insignificant financing element in which case their cash flows are classified within financing activities.

Cash Flow Hedges — We currently apply hedge accounting to a portion of our interest rate hedging instruments with the change in fair value of all other hedging instruments recorded through earnings. We report the mark-to-market gain or loss on our interest rate hedging instruments designated and qualifying as a cash flow hedging instrument as a component of OCI and reclassify such gains and losses into earnings in the same period during which the hedged forecasted transaction affects earnings. If it is determined that the forecasted transaction is no longer probable of occurring, then hedge accounting will be discontinued prospectively and future changes in fair value will be recorded in earnings. If the hedging instrument is terminated or de-designated prior to the occurrence of the hedged forecasted transaction, the net accumulated gain or loss associated with the changes in fair value of the hedge instrument remains deferred in AOCI until such time as the forecasted transaction affects earnings or until it is determined that the forecasted transaction is probable of not occurring.

Derivatives Not Designated as Hedging Instruments — We enter into power, natural gas, interest rate, environmental product and fuel oil transactions that primarily act as economic hedges to our asset and interest rate portfolio, but either do not qualify as hedges under the hedge accounting guidelines or qualify under the hedge accounting guidelines and the hedge accounting designation has not been elected. Changes in fair value of commodity derivatives not designated as hedging instruments are recognized currently in earnings and are separately stated on our Consolidated Condensed Statements of Operations in mark-to-market gain/loss as a component of operating revenues (for physical and financial power and Heat Rate and commodity option activity) and fuel and purchased energy expense (for physical and financial natural gas, power, environmental product and fuel oil activity). Changes in fair value of interest rate derivatives not designated as hedging instruments are recognized currently in earnings as interest expense.

Derivatives Included on Our Consolidated Condensed Balance Sheets

We offset fair value amounts associated with our derivative instruments and related cash collateral and margin deposits on our Consolidated Condensed Balance Sheets that are executed with the same counterparty under master netting arrangements. Our netting arrangements include a right to set off or net together purchases and sales of similar products in the margining or settlement process. In some instances, we have also negotiated cross commodity netting rights which allow for the net presentation of activity with a given counterparty regardless of product purchased or sold. We also post and/or receive cash collateral in support of our derivative instruments which may also be subject to a master netting arrangement with the same counterparty.

The following tables present the fair values of our derivative instruments and our net exposure after offsetting amounts subject to a master netting arrangement with the same counterparty to our derivative instruments recorded on our Consolidated Condensed Balance Sheets by location and hedge type at June 30, 2020 and December 31, 2019 (in millions):

	June 30, 2020		
	Gross Amounts of Assets and (Liabilities)	Gross Amounts Offset on the Consolidated Condensed Balance Sheets	Net Amount Presented on the Consolidated Condensed Balance Sheets(1)
Derivative assets:			
Commodity exchange traded derivatives contracts	$ 758	$ (758)	$ —
Commodity forward contracts	440	(241)	199
Interest rate hedging instruments	—	—	—
Total current derivative assets(2)	$ 1,198	$ (999)	$ 199
Commodity exchange traded derivatives contracts	233	(233)	—
Commodity forward contracts	348	(98)	250
Interest rate hedging instruments	—	—	—
Total long-term derivative assets(2)	$ 581	$ (331)	$ 250
Total derivative assets	$ 1,779	$ (1,330)	$ 449
Derivative (liabilities):			
Commodity exchange traded derivatives contracts	$ (733)	$ 733	$ —
Commodity forward contracts	(357)	238	(119)
Interest rate hedging instruments	(49)	—	(49)
Total current derivative (liabilities)(2)	$ (1,139)	$ 971	$ (168)
Commodity exchange traded derivatives contracts	(268)	268	—
Commodity forward contracts	(182)	98	(84)
Interest rate hedging instruments	(112)	—	(112)
Total long-term derivative (liabilities)(2)	$ (562)	$ 366	$ (196)
Total derivative liabilities	$ (1,701)	$ 1,337	$ (364)
Net derivative assets (liabilities)	$ 78	$ 7	$ 85

	December 31, 2019		
	Gross Amounts of Assets and (Liabilities)	Gross Amounts Offset on the Consolidated Condensed Balance Sheets	Net Amount Presented on the Consolidated Condensed Balance Sheets[1]
Derivative assets:			
Commodity exchange traded derivatives contracts	$ 727	$ (727)	$ —
Commodity forward contracts	262	(108)	154
Interest rate hedging instruments	2	—	2
Total current derivative assets[3]	$ 991	$ (835)	$ 156
Commodity exchange traded derivatives contracts	145	(145)	—
Commodity forward contracts	277	(41)	236
Interest rate hedging instruments	10	—	10
Total long-term derivative assets[3]	$ 432	$ (186)	$ 246
Total derivative assets	$ 1,423	$ (1,021)	$ 402
Derivative (liabilities):			
Commodity exchange traded derivatives contracts	$ (830)	$ 830	$ —
Commodity forward contracts	(321)	109	(212)
Interest rate hedging instruments	(13)	—	(13)
Total current derivative (liabilities)[3]	$ (1,164)	$ 939	$ (225)
Commodity exchange traded derivatives contracts	(154)	154	—
Commodity forward contracts	(87)	42	(45)
Interest rate hedging instruments	(18)	—	(18)
Total long-term derivative (liabilities)[3]	$ (259)	$ 196	$ (63)
Total derivative liabilities	$ (1,423)	$ 1,135	$ (288)
Net derivative assets (liabilities)	$ —	$ 114	$ 114

(1) At June 30, 2020 and December 31, 2019, we had $260 million and $191 million, respectively, of collateral under master netting arrangements that were not offset against our derivative instruments on the Consolidated Condensed Balance Sheets primarily related to initial margin requirements.

(2) At June 30, 2020, current and long-term derivative assets are shown net of collateral of $(28) million and $(9) million, respectively, and current and long-term derivative liabilities are shown net of collateral of $1 million and $43 million, respectively.

(3) At December 31, 2019, current and long-term derivative assets are shown net of collateral of $(4) million and $(4) million, respectively, and current and long-term derivative liabilities are shown net of collateral of $108 million and $14 million, respectively.

	June 30, 2020		December 31, 2019	
	Fair Value of Derivative Assets	Fair Value of Derivative Liabilities	Fair Value of Derivative Assets	Fair Value of Derivative Liabilities
Derivatives designated as cash flow hedging instruments:				
Interest rate hedging instruments	$ —	$ 119	$ 12	$ 29
Total derivatives designated as cash flow hedging instruments	$ —	$ 119	$ 12	$ 29
Derivatives not designated as hedging instruments:				
Commodity instruments	$ 449	$ 203	$ 390	$ 257
Interest rate hedging instruments	—	42	—	2
Total derivatives not designated as hedging instruments	$ 449	$ 245	$ 390	$ 259
Total derivatives	$ 449	$ 364	$ 402	$ 288

Derivatives Included on Our Consolidated Condensed Statements of Operations

Changes in the fair values of our derivative instruments are reflected in cash for option premiums paid or collected, in OCI, net of tax, for derivative instruments which qualify for and we have elected cash flow hedge accounting treatment, or on our Consolidated Condensed Statements of Operations as a component of mark-to-market activity within our earnings.

The following tables detail the components of our total activity for both the net realized gain (loss) and the net mark-to-market gain (loss) recognized from our derivative instruments in earnings and where these components were recorded on our Consolidated Condensed Statements of Operations for the periods indicated (in millions):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Realized gain (loss)[(1)(2)]				
Commodity derivative instruments	$ 36	$ 58	$ 33	$ 169
Interest rate hedging instruments[(3)]	(18)	—	(18)	—
Total realized gain (loss)	$ 18	$ 58	$ 15	$ 169
Mark-to-market gain (loss)[(4)]				
Commodity derivative instruments	$ 35	$ 187	$ 236	$ 233
Interest rate hedging instruments	(14)	(1)	(38)	(2)
Total mark-to-market gain (loss)	$ 21	$ 186	$ 198	$ 231
Total activity, net	$ 39	$ 244	$ 213	$ 400

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(1) Does not include the realized value associated with derivative instruments that settle through physical delivery.

(2) Includes amortization of acquisition date fair value of financial derivative activity related to the acquisition of Champion Energy and Calpine Solutions.

(3) Includes costs associated with the termination of de-designated interest rate hedging instruments recorded to interest expense related to our Steamboat project debt that was repaid in June 2020.

(4) In addition to changes in market value on derivatives not designated as hedges, changes in mark-to-market gain (loss) also includes adjustments to reflect changes in credit default risk exposure.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Realized and mark-to-market gain (loss)[1]				
Derivatives contracts included in operating revenues[2][3]	$ 34	$ 541	$ 541	$ 578
Derivatives contracts included in fuel and purchased energy expense[2][3]	37	(296)	(272)	(176)
Interest rate hedging instruments included in interest expense[4]	(32)	(1)	(56)	(2)
Total activity, net	$ 39	$ 244	$ 213	$ 400

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(1) In addition to changes in market value on derivatives not designated as hedges, changes in mark-to-market gain (loss) also includes adjustments to reflect changes in credit default risk exposure.

(2) Does not include the realized value associated with derivative instruments that settle through physical delivery.

(3) Includes amortization of acquisition date fair value of financial derivative activity related to the acquisition of Champion Energy and Calpine Solutions.

(4) Includes costs associated with the termination of de-designated interest rate hedging instruments recorded to interest expense related to our Steamboat project debt that was repaid in June 2020.

Derivatives Included in OCI and AOCI

The following table details the effect of our net derivative instruments that qualified for hedge accounting treatment and are included in OCI and AOCI for the periods indicated (in millions):

	Three Months Ended June 30, Gain (Loss) Recognized in OCI		Three Months Ended June 30, Gain (Loss) Reclassified from AOCI into Income[2][3]		
	2020	2019	2020	2019	Affected Line Item on the Consolidated Condensed Statements of Operations
Interest rate hedging instruments[1]	$ 3	$ (32)	$ (25)	$ 3	Interest expense

	Six Months Ended June 30, Gain (Loss) Recognized in OCI		Six Months Ended June 30, Gain (Loss) Reclassified from AOCI into Income[2][3]		
	2020	2019	2020	2019	Affected Line Item on the Consolidated Condensed Statements of Operations
Interest rate hedging instruments[1]	$ (101)	$ (57)	$ (31)	$ 5	Interest expense

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(1) We recorded an income tax expense of $1 million and an income tax (benefit) of $(1) million for the three months ended June 30, 2020 and 2019, respectively, and income tax (benefit) of $(2) million and $(1) million for the six months ended June 30, 2020 and 2019, respectively, in AOCI related to our cash flow hedging activities.

(2) Cumulative cash flow hedge losses attributable to Calpine, net of tax, remaining in AOCI were $174 million and $72 million at June 30, 2020 and December 31, 2019, respectively. Cumulative cash flow hedge losses attributable to the noncontrolling interest, net of tax, remaining in AOCI were nil and $3 million at June 30, 2020 and December 31, 2019, respectively.

(3) Includes losses of $16 million and nil that were reclassified from AOCI to interest expense for the three months ended June 30, 2020 and 2019, respectively, and losses of $16 million and $1 million that were reclassified from AOCI to interest expense for the six months ended June 30, 2020 and 2019, respectively, where the hedged transactions became probable of not occurring.

We estimate that pre-tax net losses of $57 million would be reclassified from AOCI into interest expense during the next 12 months as the hedged transactions settle; however, the actual amounts that will be reclassified will likely vary based on changes in interest rates. Therefore, we are unable to predict what the actual reclassification from AOCI into earnings (positive or negative) will be for the next 12 months.

7. Use of Collateral

We use margin deposits, prepayments and letters of credit as credit support with and from our counterparties for commodity procurement and risk management activities. In addition, we have granted additional first priority liens on the assets currently subject to first priority liens under various debt agreements as collateral under certain of our power and natural gas agreements and certain of our interest rate hedging instruments in order to reduce the cash collateral and letters of credit that we would otherwise be required to provide to the counterparties under such agreements. The counterparties under such agreements share the benefits of the collateral subject to such first priority liens pro rata with the lenders under our various debt agreements.

The table below summarizes the balances outstanding under margin deposits, natural gas and power prepayments, and exposure under letters of credit and first priority liens for commodity procurement and risk management activities as of June 30, 2020 and December 31, 2019 (in millions):

	June 30, 2020	December 31, 2019
Margin deposits[(1)]	$ 290	$ 432
Natural gas and power prepayments	31	29
Total margin deposits and natural gas and power prepayments with our counterparties[(2)]	$ 321	$ 461
Letters of credit issued	$ 877	$ 906
First priority liens under power and natural gas agreements	20	42
First priority liens under interest rate hedging instruments	168	31
Total letters of credit and first priority liens with our counterparties	$ 1,065	$ 979
Margin deposits posted with us by our counterparties[(1)(3)]	$ 23	$ 127
Letters of credit posted with us by our counterparties	212	25
Total margin deposits and letters of credit posted with us by our counterparties	$ 235	$ 152

(1) We offset fair value amounts recognized for derivative instruments executed with the same counterparty under a master netting arrangement for financial statement presentation; therefore, amounts recognized for the right to reclaim, or the obligation to return, cash collateral are presented net with the corresponding derivative instrument fair values. See Note 6 for further discussion of our derivative instruments subject to master netting arrangements.

(2) At June 30, 2020 and December 31, 2019, $19 million and $117 million, respectively, were included in current and long-term derivative assets and liabilities, $294 million and $336 million, respectively, were included in margin deposits and other prepaid expense and $8 million and $8 million, respectively, were included in other assets on our Consolidated Condensed Balance Sheets.

(3) At June 30, 2020 and December 31, 2019, $12 million and $3 million, respectively, were included in current and long-term derivative assets and liabilities, $11 million and $93 million, respectively, were included in other current liabilities and nil and $31 million, respectively, were included in other long-term liabilities on our Consolidated Condensed Balance Sheets.

Future collateral requirements for cash, first priority liens and letters of credit may increase or decrease based on the extent of our involvement in hedging and optimization contracts, movements in commodity prices, and also based on our credit ratings and general perception of creditworthiness in our market.

8. Income Taxes

Income Tax Expense (Benefit)

The table below shows our consolidated income tax expense (benefit) and our effective tax rates for the periods indicated (in millions):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Income tax expense (benefit)	$ (31)	$ 9	$ 15	$ 19
Effective tax rate	(23)%	3%	5%	4%

Our income tax rates do not bear a customary relationship to statutory income tax rates primarily as a result of the effect of our NOLs and changes in unrecognized tax benefits and valuation allowances. For the three and six months ended June 30, 2020 and 2019, the income tax expense recognized resulted from timing differences between the recognition of federal income tax expense and corresponding changes in NOLs and the valuation allowance.

Income Tax Audits — We remain subject to periodic audits and reviews by taxing authorities; however, we do not expect these audits will have a material effect on our tax provision. Any NOLs we claim in future years to reduce taxable income could be subject to IRS examination regardless of when the NOLs were generated. Any adjustment of state or federal returns could result in a reduction of deferred tax assets rather than a cash payment of income taxes in tax jurisdictions where we have NOLs. We are currently under various state income tax audits for various periods.

Valuation Allowance — U.S. GAAP requires that we consider all available evidence, both positive and negative, future earnings and tax planning strategies to determine whether, based on the weight of that evidence, a valuation allowance is needed to reduce the value of deferred tax assets. We have federal NOLs available to offset future income tax obligations recognized as deferred tax assets in the amount of $1.5 billion at June 30, 2020. During the second quarter of 2020, we recorded a partial valuation allowance release to the federal valuation allowance in the amount of $77 million. We recognize a valuation allowance against a subset of these NOLs given uncertainty in our ability to utilize all such NOLs. Future realization of the tax benefit of an existing deductible temporary difference or carryforward ultimately depends on the existence of sufficient taxable income of the appropriate character within the carryback or carryforward periods available under the tax law. For purposes of this evaluation, we consider both the existence of future taxable earnings as well as available tax planning strategies. To the extent that future expected sources of earnings materially changes, this could result in the reduction or increase in our valuation allowance.

9. Commitments and Contingencies

Litigation

We are party to various litigation matters, including regulatory and administrative proceedings arising out of the normal course of business. At the present time, we do not expect that the outcome of any of these proceedings, individually or in the aggregate, will have a material adverse effect on our financial condition, results of operations or cash flows.

On a quarterly basis, we review our litigation activities and determine if an unfavorable outcome to us is considered “remote,” “reasonably possible” or “probable” as defined by U.S. GAAP. Where we determine an unfavorable outcome is probable and is reasonably estimable, we accrue for potential litigation losses. The liability we may ultimately incur with respect to such litigation matters, in the event of a negative outcome, may be in excess of amounts currently accrued, if any; however, we do not expect that the reasonably possible outcome of these litigation matters would, individually or in the aggregate, have a material adverse effect on our financial condition, results of operations or cash flows. Where we determine an unfavorable outcome is not probable or reasonably estimable, we do not accrue for any potential litigation loss. The ultimate outcome of these litigation matters cannot presently be determined, nor can the liability that could potentially result from a negative outcome be reasonably estimated. As a result, we give no assurance that such litigation matters would, individually or in the aggregate, not have a material adverse effect on our financial condition, results of operations or cash flows.

Environmental Matters

We are subject to complex and stringent environmental laws and regulations related to the operation of our power plants. On occasion, we may incur environmental fees, penalties and fines associated with the operation of our power plants. At the present time, we do not have environmental violations or other matters that would have a material effect on our financial condition, results of operations or cash flows or that would significantly change our operations.

Guarantees and Indemnifications

Our potential exposure under guarantee and indemnification obligations can range from a specified amount to an unlimited dollar amount, depending on the nature of the claim and the particular transaction. Our total maximum exposure under our guarantee and indemnification obligations is not estimable due to uncertainty as to whether claims will be made or how any potential claim will be resolved. As of June 30, 2020, there are no material outstanding claims related to our guarantee and indemnification obligations and we do not anticipate that we will be required to make any material payments under our guarantee and indemnification obligations. There have been no material changes to our guarantees and indemnifications from those disclosed in Note 16 of our 2019 Form 10-K.

10. Related Party Transactions

We have entered into various agreements with related parties associated with the operation of our business. A description of these related party transactions is provided below:

Calpine Receivables — Under the Accounts Receivable Sales Program, at June 30, 2020 and December 31, 2019, we had $195 million and $222 million, respectively, in trade accounts receivable outstanding that were sold to Calpine Receivables and $41 million and $38 million, respectively, in notes receivable from Calpine Receivables which were recorded on our Consolidated Condensed Balance Sheets. During the six months ended June 30, 2020 and 2019, we sold an aggregate of $1.0 billion and $1.1 billion, respectively, in trade accounts receivable and recorded $1.0 billion and $1.1 billion, respectively, in proceeds. For a further discussion of the Accounts Receivable Sales Program and Calpine Receivables, see Notes 7 and 17 in our 2019 Form 10-K.

Lyondell — We have a ground lease agreement with Houston Refining LP ("Houston Refining"), a subsidiary of Lyondell, for our Channel Energy Center site from which we sell power, capacity and steam to Houston Refining under a PPA. We purchase refinery gas and raw water from Houston Refining under a facilities services agreement. One of the entities which has a material ownership interest in Calpine also has an ownership interest in Lyondell whereby they may significantly influence the management and operating policies of Lyondell. We recorded $14 million and $17 million in operating revenues during the three months ended June 30, 2020 and 2019, respectively, and $27 million and $37 million in operating revenues during the six months ended June 30, 2020 and 2019, respectively. We recorded $3 million and $4 million in operating expenses during the three months ended June 30, 2020 and 2019, respectively, and $6 million and $7 million in operating expenses during the six months ended June 30, 2020 and 2019, respectively, associated with the Lyondell contract. At June 30, 2020 and December 31, 2019, the related party receivable and payable associated with the Lyondell contract were immaterial.

Other — We have identified other related party contracts for the sale of power, capacity, steam and RECs which are entered into in the ordinary course of our business. Most of these contracts relate to the sale of commodities and capacity for varying tenors. We have also entered into a long-term land lease agreement with a related party. As of June 30, 2020 and December 31, 2019, the related party revenues, expenses, receivables and payables associated with these transactions were immaterial.

11. Segment Information

We assess our business on a regional basis due to the effect on our financial performance of the differing characteristics of these regions, particularly with respect to competition, regulation and other factors affecting supply and demand. At June 30, 2020, our geographic reportable segments for our wholesale business are West (including geothermal), Texas and East (including Canada) and we have a separate reportable segment for our retail business. We continue to evaluate the optimal manner in which we assess our performance including our segments and future changes may result in changes to the composition of our geographic segments.

Commodity Margin is a key operational measure of profit reviewed by our chief operating decision maker to assess the performance of our segments. The tables below show financial data for our segments (including a reconciliation of Commodity Margin to income (loss) from operations by segment) for the periods indicated (in millions):

	Three Months Ended June 30, 2020					
	Wholesale				Consolidation	
	West	Texas	East	Retail	Elimination	Total
Total operating revenues[1]	$ 470	$ 620	$ 244	$ 720	$ (310)	$ 1,744
Commodity Margin	$ 269	$ 172	$ 193	$ 89	$ —	$ 723
Add: Mark-to-market commodity activity, net and other[2]	67	(17)	(38)	56	(9)	59
Less:						
Operating and maintenance expense	96	73	71	35	(9)	266
Depreciation and amortization expense	56	50	45	12	—	163
General and other administrative expense	6	13	8	4	—	31
Other operating expenses	7	1	6	—	—	14
(Income) from unconsolidated subsidiaries	—	—	(4)	—	—	(4)
Income from operations	171	18	29	94	—	312
Interest expense						167
Gain (loss) on extinguishment of debt and other (income) expense, net						13
Income before income taxes						$ 132

	Three Months Ended June 30, 2019					
	Wholesale				Consolidation	
	West	Texas	East	Retail	Elimination	Total
Total operating revenues[1]	$ 649	$ 899	$ 646	$ 1,082	$ (677)	$ 2,599
Commodity Margin	$ 251	$ 173	$ 235	$ 93	$ —	$ 752
Add: Mark-to-market commodity activity, net and other[2]	58	240	94	(182)	(10)	200
Less:						
Operating and maintenance expense	84	66	72	33	(10)	245
Depreciation and amortization expense	60	54	48	13	—	175
General and other administrative expense	5	15	10	4	—	34
Other operating expenses	7	1	11	—	—	19
Impairment losses	—	—	40	—	—	40
(Income) from unconsolidated subsidiaries	—	—	(6)	1	—	(5)
Income (loss) from operations	153	277	154	(140)	—	444
Interest expense						157
Gain (loss) on extinguishment of debt and other (income) expense, net						8
Income before income taxes						$ 279

	Six Months Ended June 30, 2020					
	Wholesale				Consolidation	
	West	Texas	East	Retail	Elimination	Total
Total operating revenues(3)	$ 1,175	$ 1,270	$ 786	$ 1,628	$ (823)	$ 4,036
Commodity Margin	$ 503	$ 285	$ 343	$ 180	$ —	$ 1,311
Add: Mark-to-market commodity activity, net and other(4)	121	84	44	40	(17)	272
Less:						
Operating and maintenance expense	182	139	134	68	(17)	506
Depreciation and amortization expense	112	100	91	24	—	327
General and other administrative expense	14	24	16	8	—	62
Other operating expenses	15	3	13	—	—	31
(Income) from unconsolidated subsidiaries	—	—	(4)	—	—	(4)
Income from operations	301	103	137	120	—	661
Interest expense						336
Gain (loss) on extinguishment of debt and other (income) expense, net						17
Income before income taxes						$ 308

	Six Months Ended June 30, 2019					
	Wholesale				Consolidation	
	West	Texas	East	Retail	Elimination	Total
Total operating revenues(3)	$ 1,331	$ 1,642	$ 1,335	$ 2,080	$ (1,190)	$ 5,198
Commodity Margin	$ 515	$ 335	$ 500	$ 181	$ —	$ 1,531
Add: Mark-to-market commodity activity, net and other(4)	114	284	107	(235)	(18)	252
Less:						
Operating and maintenance expense	165	131	139	67	(18)	484
Depreciation and amortization expense	133	99	91	26	—	349
General and other administrative expense	12	27	19	8	—	66
Other operating expenses	16	3	19	—	—	38
Impairment losses	—	—	55	—	—	55
(Income) from unconsolidated subsidiaries	—	—	(12)	1	—	(11)
Income (loss) from operations	303	359	296	(156)	—	802
Interest expense						306
Gain (loss) on extinguishment of debt and other (income) expense, net						27
Income before income taxes						$ 469

(1) Includes intersegment revenues of $70 million and $100 million in the West, $214 million and $348 million in Texas, $24 million and $228 million in the East and $2 million and $1 million in Retail for the three months ended June 30, 2020 and 2019, respectively.

(2) Includes $(22) million and $(19) million of lease levelization and $9 million and $18 million of amortization expense for the three months ended June 30, 2020 and 2019, respectively.

(3) Includes intersegment revenues of $189 million and $262 million in the West, $432 million and $559 million in Texas, $199 million and $365 million in the East and $3 million and $4 million in Retail for the six months ended June 30, 2020 and 2019, respectively.

(4) Includes $(40) million and $(35) million of lease levelization and $25 million and $39 million of amortization expense for the six months ended June 30, 2020 and 2019, respectively.

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

Forward-Looking Information

This Management's Discussion and Analysis of Financial Condition and Results of Operations should be read in conjunction with our accompanying Consolidated Condensed Financial Statements and related Notes. See the cautionary statement regarding forward-looking statements at the beginning of this Report for a description of important factors that could cause actual results to differ from expected results.

Introduction and Overview

We are one of the largest power generators in the U.S. We own and operate primarily natural gas-fired and geothermal power plants in North America and have a significant presence in major competitive wholesale and retail power markets in California, Texas, and the Northeast and mid-Atlantic regions of the U.S. We sell power, steam, capacity, renewable energy credits and ancillary services to our wholesale customers, which include utilities, independent electric system operators and industrial companies, retail power providers, municipalities, CCAs and other governmental entities and power marketers. Additionally, through our retail brands, we market retail energy and related products to commercial, industrial, governmental and residential customers. We continue to focus on providing products and services that are beneficial to our wholesale and retail customers. We purchase primarily natural gas and some fuel oil as fuel for our power plants and engage in related natural gas transportation and storage transactions. We also purchase power and related products for sale to our customers and purchase electric transmission rights to deliver power to our customers. Additionally, consistent with our Risk Management Policy, we enter into natural gas, power, environmental product, fuel oil and other physical and financial commodity contracts to hedge certain business risks and optimize our portfolio of power plants.

We assess our wholesale business on a regional basis due to the effect on our financial performance of the differing characteristics of these regions, particularly with respect to competition, regulation and other factors affecting supply and demand. Our geographic reportable segments for our wholesale business are West (including geothermal), Texas and East (including Canada) and we have a separate reportable segment for our retail business.

Our wholesale power plant portfolio, including partnership interests, consists of 78 power plants, including two under construction, with an aggregate current generation capacity of 26,103 MW and 381 MW under construction. Our fleet consists of 62 natural gas-fired combustion turbine-based plants, one natural gas and fuel oil-fired steam-based plant, 13 geothermal steam turbine-based plants, one photovoltaic solar plant and one battery storage plant. Our wholesale geographic segments have an aggregate generation capacity of 7,590 MW with an additional 20 MW under construction in the West, 9,183 MW in Texas and 9,330 MW with an additional 361 MW under construction in the East. Inclusive of our power generation portfolio and our retail sales platforms, we serve customers in 23 states in the U.S. and in Canada and Mexico.

Our retail business consists of multiple brands with a focus on reaching key retail energy markets. Our primary brands are Calpine Solutions (which focuses on commercial and industrial customers) and Champion Energy (which focuses on residential, mass market and commercial and industrial customers). In total, our retail business delivered approximately 60 million MWh of power in 2019. Our retail activities are primarily located in the power markets where our generation fleet maintains a presence. Products sold include standard electricity service as well as customized solutions to aid customers in their business goals (including sustainability goals).

Uncertainty Related to the COVID-19 Pandemic

In March 2020, the World Health Organization categorized the novel coronavirus disease 2019 (COVID-19) as a pandemic, and the President declared the COVID-19 outbreak a national emergency. COVID-19 continues to spread throughout the United States and other countries across the world negatively affecting the global economy, disrupting global supply chains and workforce participation and resulting in significant volatility and disruption of financial markets. While we have noted recovery in certain key geographic areas where we own generation facilities, we continue to closely monitor the impact of the COVID-19 outbreak on all aspects of our business, including how it has affected and continues to affect our employees, customers, suppliers and the communities in which we operate.

Our first priority with regard to the COVID-19 outbreak is to ensure the health and safety of our employees and contractors. As one of the largest independent power producers in the U.S., we are designated as an "essential business" and have an obligation to operate our fleet of power plants to sustain the bulk electric system and manage retail customer power delivery obligations. To ensure the continued reliable operations of our generation fleet and delivery of power to our retail customers, we continue to abide by a set of safety and health measures as a means to ensure we are able to provide reliable energy to the markets we serve. These measures include restricting access at our power plants to only mission-critical individuals and adherence to social distancing protocols wherever possible. Additionally, our commercial and retail operations, including all support staff such as legal, accounting, finance, information technology and human resources, continue to work remotely.

To date, the COVID-19 outbreak has not had a material adverse effect on our operations, financial condition or cash flows. While the ultimate determination depends on the length and severity of the crisis, as of the filing of this Report, we anticipate our cash flows from operations and our available sources of liquidity will be sufficient to meet our current cash requirements during this period. As the impact of the COVID-19 outbreak on the economy and our operations evolves, we will continue to assess and manage our liquidity needs.

The ultimate extent to which the COVID-19 pandemic may impact our business, operating results, financial condition or liquidity will depend on future developments, including the duration of the outbreak, continued business and workforce disruptions, the effectiveness of actions taken to contain and treat the disease and the lasting effect on the economy, especially in the geographic areas where we own and operate power generating facilities and serve retail customers. Given the uncertainty concerning the overall impact of the COVID-19 outbreak, while we do not anticipate the effect of the outbreak to have a material adverse effect on our financial condition, results of operations or cash flows for the year ended December 31, 2020, we are unable to predict the ultimate impact of the outbreak on our future results. For further discussion, see "Item 1A. Risk Factors" in Part II of this Report.

Governmental and Regulatory Matters

We are subject to complex and stringent energy, environmental and other laws and regulations at the federal, state and local levels as well as rules within the ISO and RTO markets in which we participate. Federal and state legislative and regulatory actions, including those by ISO/RTOs, continue to change how our business is regulated. We are actively participating in these debates at the federal, regional, state and ISO/RTO levels. Significant updates are discussed below. For a further discussion of the environmental and other governmental regulations that affect us, see "— Governmental and Regulatory Matters" in Part I, Item 1 of our 2019 Form 10-K.

CAISO

The CPUC determines Resource Adequacy ("RA") requirements for load serving entities ("LSEs") and for specified local areas utilizing inputs from the CAISO in order to ensure the reliability of electric service in California. CPUC rules require LSEs to contract for capacity with sufficient generation resources to ensure reliability. A recent CPUC decision implemented Central Procurement Entities ("CPEs") to meet local RA requirements. CPEs, initially Southern California Edison and PG&E in their respective service territories, will meet local RA requirements on behalf of all LSEs and recover the cost through distribution rates. To the extent LSEs or CPEs have not procured sufficient capacity through the CPUC administered processes, the CAISO can procure additional capacity using the Capacity Procurement Mechanism ("CPM") as well as Reliability Must-Run ("RMR") contracts. We do not know at this point whether these changes will be impactful to our business.

ERCOT

On March 26, 2020, the Public Utility Commission of Texas ("PUCT") adopted the COVID-19 Electricity Relief Program ("ERP") to mitigate the impact of COVID-19 on Texas utility customers who are experiencing economic hardship as a result of the pandemic. The ERP creates a temporary exemption from disconnections for eligible residential customers who cannot pay their electricity bills. To pay for the ERP, the PUCT has authorized the utility companies to implement a new rider which is set at $0.33/MWh for all customer classes. The funds collected will be utilized to cover the unpaid bills for these eligible residential customers experiencing unemployment due to the impacts of COVID-19 and to ensure these customers continue receiving electric service. The ERP is set to end on August 31, 2020, but the PUCT has the discretion to extend the program if necessary. Although we anticipate our losses resulting from the ERP will not be material to us, we are unable to predict whether the funds we expect to recover from the PUCT will be sufficient to recover our loss exposure.

PJM

On June 29, 2018, the FERC issued a decision finding PJM's current tariff to be unjust and unreasonable due to the price-suppressive effects of out-of-market compensation provided to certain generation resources by states within the PJM market. The FERC rejected both replacement proposals submitted by PJM to address the issue and instead opted for a paper hearing to identify a reasonable replacement mechanism. PJM's annual capacity auction, which was scheduled to be held in May 2019, has been postponed pending the issuance of a FERC decision in this proceeding.

On December 19, 2019, the FERC issued an order (the “December 2019 Order”) in the paper hearing docket, directing PJM to expand its minimum offer price rule (“MOPR”) to apply to most generators receiving a state subsidy, although certain existing resources are exempted from the MOPR requirement. For non-exempt resources receiving a state subsidy, the MOPR will be set at the net Cost of New Entry for new resources and the Net Avoidable Cost Rate for existing resources. PJM was directed to submit a compliance filing by March 18, 2020 and to propose dates for when the postponed May 2019 auction will be held. PJM submitted its compliance filing on March 18, 2020 which generally complies with the December 2019 Order. PJM informed the FERC that it intends to hold the first auction within six and a half months after the date of the FERC's acceptance of PJM's compliance filing, and every six months thereafter until the delayed auctions catch up to the original auction schedule. PJM anticipates these adjustments to apply to the next three auctions.

Multiple parties sought rehearing of the FERC's June 29, 2018 order and the December 2019 Order. The FERC issued an order on rehearing on April 16, 2020 largely affirming its December 2019 Order, although the FERC did provide further clarification of certain key issues and granted rehearing on a few issues, none of which significantly impacts the outcome of the December 2019 Order. Several notices of appeal have been filed. The Seventh Circuit Court of Appeals has been assigned the case. A briefing schedule has not been established.

In addition, subsequent to the December 2019 Order, several states in the PJM region have expressed interest in considering the possible use of the Fixed Resource Requirement ("FRR") provisions of the PJM tariff to bilaterally contract for capacity instead of participating in PJM's market. The New Jersey Board of Public Utilities issued an order on March 27, 2020 initiating a proceeding to examine whether New Jersey can achieve its clean energy goals under the current PJM capacity market program and if not, how New Jersey can best meet its resource adequacy needs while meeting its clean energy goals. There are also discussions in the Illinois Legislature on FRR, and several FRR proposals have been made by Illinois stakeholders. Maryland is also considering its FRR options. No other states have taken specific action to examine the FRR option and it is unknown at this time whether or not states will pursue this approach, and what the resulting impact on our business would be.

On May 21, 2020, the FERC issued an order generally approving PJM's proposal to revise the rules relating to its reserve market and the Operating Reserve Demand Curves' ("ORDC") shapes. However, the FERC determined that the approved reserve market and ORDC changes render PJM's current backward-looking method for calculating the energy and ancillary services offset ("E&AS Offset") in PJM's capacity market unjust and unreasonable, and directed PJM to amend the E&AS Offset methodology to be forward-looking. The FERC directed PJM to submit a compliance filing implementing this directive by August 5, 2020. PJM submitted its proposal on August 5, 2020 but intends to provide additional information providing illustrative E&AS Offset and net Cost of New Entry values based on a forward-looking market simulation model. We cannot predict at this time whether PJM's proposal will satisfy the FERC's requirements or when the FERC will issue a final order in this proceeding.

ISO-NE

In response to reliability concerns related to fuel security in the New England region, ISO-NE filed a proposal with the FERC in mid-2018 that would allow it to retain certain generators under cost-of-service RMR Contracts that it believes are necessary to ensure fuel security on the system. The only units ISO-NE has contracted with to date are Mystic Units 8 and 9 (the "Mystic Units"). Included in ISO-NE's proposal is a requirement that the cost-of-service units participate in ISO-NE's forward capacity auction ("FCA") as price takers. Calpine and many other generators opposed ISO-NE's proposal, arguing that having these generators act as price takers will suppress capacity market clearing prices. The FERC rejected the price suppression concerns and accepted ISO-NE's filing on December 3, 2018. Several companies have sought rehearing of the FERC's decision. The requests for rehearing remain pending before the FERC. The Mystic Units were price takers in the FCA 13 and 14 auctions held in February 2019 and 2020, respectively, which likely contributed to lower capacity market clearing prices. ISO-NE has initiated a temporary program to provide compensation to other generators that provide fuel security to the power system and, on April 15, 2020, proposed a long-term, market-based solution to incent and retain energy secure resources. ISO-NE has requested that the FERC approve the long-term proposal by November 1, 2020, with an implementation date of June 1, 2024.

Exelon, the owner of the Mystic Units, filed a complaint with the FERC on June 10, 2020, arguing that once the Mystic Units are no longer needed for fuel security (June 1, 2024), ISO-NE will need to retain the units for transmission reliability through a transmission RMR contract. ISO-NE and stakeholders filed comments opposing Exelon's complaint, arguing that ISO-NE has an alternative solution to address transmission reliability and the Mystic Units are not needed. The complaint is pending before the FERC.

RESULTS OF OPERATIONS FOR THE THREE MONTHS ENDED JUNE 30, 2020 AND 2019

Below are our results of operations for the three months ended June 30, 2020 as compared to the same period in 2019 (in millions, except for percentages and operating performance metrics). In the comparative tables below, increases in revenue/income or decreases in expense (favorable variances) are shown without brackets while decreases in revenue/income or increases in expense (unfavorable variances) are shown with brackets.

	2020	2019	Change	% Change
Operating revenues:				
Commodity revenue	$ 1,852	$ 2,128	$ (276)	(13)
Mark-to-market gain (loss)	(113)	467	(580)	#
Other revenue	5	4	1	25
Operating revenues	1,744	2,599	(855)	(33)
Operating expenses:				
Fuel and purchased energy expense:				
Commodity expense	1,110	1,367	257	19
Mark-to-market (gain) loss	(148)	280	428	#
Fuel and purchased energy expense	962	1,647	685	42
Operating and maintenance expense	266	245	(21)	(9)
Depreciation and amortization expense	163	175	12	7
General and other administrative expense	31	34	3	9
Other operating expenses	14	19	5	26
Total operating expenses	1,436	2,120	684	32
Impairment losses	—	40	40	#
(Income) from unconsolidated subsidiaries	(4)	(5)	(1)	(20)
Income from operations	312	444	(132)	(30)
Interest expense	167	157	(10)	(6)
Loss on extinguishment of debt	8	3	(5)	#
Other (income) expense, net	5	5	—	—
Income before income taxes	132	279	(147)	(53)
Income tax expense (benefit)	(31)	9	40	#
Net income	163	270	(107)	(40)
Net income attributable to the noncontrolling interest	—	(4)	4	#
Net income attributable to Calpine	$ 163	$ 266	$ (103)	(39)

	2020	2019	Change	% Change
Operating Performance Metrics:				
MWh generated (in thousands)(1)(2)	22,493	21,156	1,337	6
Average availability(2)	81.5%	81.5%	—%	—
Average total MW in operation(1)	25,314	25,908	(594)	(2)
Average capacity factor, excluding peakers	44.6%	41.6%	3.0%	7
Steam Adjusted Heat Rate(2)	7,329	7,338	9	—

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\# Variance of 100% or greater

(1) Represents generation and capacity from power plants that we both consolidate and operate and excludes Greenfield LP, Whitby (through the sale date of November 20, 2019), Freeport Energy Center, 21.5% of Hidalgo Energy Center, 25% of Freestone Energy Center and 25% of Russell City Energy Center through January 28, 2020. Subsequent to that date, 100% of Russell City Energy Center is included.

(2) Generation, average availability and Steam Adjusted Heat Rate exclude power plants and units that are inactive.

We evaluate our Commodity revenue and Commodity expense on a collective basis because the price of power and natural gas tend to move together as the price for power is generally determined by the variable operating cost of the next marginal generator to be dispatched to meet demand. The spread between our Commodity revenue and Commodity expense represents a significant portion of our Commodity Margin. Our financial performance is correlated to how we maximize our Commodity Margin through management of our portfolio of power plants, as well as our hedging and optimization activities. See additional segment discussion in "Commodity Margin by Segment."

Commodity revenue, net of Commodity expense, decreased $19 million for the three months ended June 30, 2020, compared to the same period in 2019, primarily due to (favorable variances are shown without brackets while unfavorable variances are shown with brackets):

(in millions)	
$ 3	Higher margins primarily driven by higher resource adequacy revenue in the West, partially offset by the sale of our Garrison and RockGen Energy Centers in July 2019
(32)	Lower PJM and ISO-NE regulatory capacity revenue in our East segment
10	Period-over-period change in contract amortization, lease levelization relating to tolling contracts and other[1]
$ (19)	

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(1) Commodity Margin excludes amortization expense related to contracts recorded at fair value, non-cash GAAP-related adjustments to levelize revenues from tolling agreements, Commodity revenue and Commodity expense attributable to the noncontrolling interest and other unusual items or non-recurring items.

Mark-to-market gain/loss, net from hedging our future generation, fuel supply requirements and retail activities had an unfavorable variance of $152 million primarily driven by mark-to-market gains on commodity hedges recognized during the second quarter 2019 as forward commodity prices declined.

Our normal, recurring operating and maintenance expense, after excluding the effect of power plant portfolio changes and other one-time items such as COVID-19 pandemic costs as well as major maintenance expense associated with planned outages, was relatively unchanged for the three months ended June 30, 2020 compared to the same period in 2019.

Depreciation and amortization expense decreased by $12 million for the three months ended June 30, 2020 compared to the same period in 2019 primarily due to various assets being fully depreciated in 2019.

Other operating expenses decreased by $5 million for the three months ended June 30, 2020 compared to the same period in 2019 primarily due to lower project development expense following the sale of development projects.

During the three months ended June 30, 2019, we recorded impairment losses of approximately $40 million related to the sale of our Garrison and RockGen Energy Centers.

Interest expense increased by $10 million for the three months ended June 30, 2020 compared to the same period in 2019 primarily due to mark-to-market losses on interest rate derivative instruments executed in the first quarter of 2020 which are accounted for as economic hedges of forward interest rate exposure.

Loss on extinguishment of debt had an unfavorable variance of $5 million for the three months ended June 30, 2020 compared to the same period in 2019 primarily due to debt modification and extinguishment costs associated with our GPC Term Loan and the payoff of the Steamboat project debt facility in June 2020.

During the three months ended June 30, 2020, we recorded an income tax benefit of $31 million compared to an income tax expense of $9 million for the three months ended June 30, 2019. The favorable period-over-period change primarily resulted from the partial release of our valuation allowance associated with our NOLs during the second quarter of 2020.

Net income attributable to the noncontrolling interest decreased by $4 million for the three months ended June 30, 2020 compared to the same period in 2019 due to our acquisition of the 25% noncontrolling interest of Russell City Energy Company, LLC on January 28, 2020.

RESULTS OF OPERATIONS FOR THE SIX MONTHS ENDED JUNE 30, 2020 AND 2019

Below are our results of operations for the six months ended June 30, 2020 as compared to the same period in 2019 (in millions, except for percentages and operating performance metrics). In the comparative tables below, increases in revenue/income or decreases in expense (favorable variances) are shown without brackets while decreases in revenue/income or increases in expense (unfavorable variances) are shown with brackets.

	2020	2019	Change	% Change
Operating revenues:				
Commodity revenue	$ 3,795	$ 4,666	$ (871)	(19)
Mark-to-market gain	232	523	(291)	(56)
Other revenue	9	9	—	—
Operating revenues	4,036	5,198	(1,162)	(22)
Operating expenses:				
Fuel and purchased energy expense:				
Commodity expense	2,457	3,125	668	21
Mark-to-market (gain) loss	(4)	290	294	#
Fuel and purchased energy expense	2,453	3,415	962	28
Operating and maintenance expense	506	484	(22)	(5)
Depreciation and amortization expense	327	349	22	6
General and other administrative expense	62	66	4	6
Other operating expenses	31	38	7	18
Total operating expenses	3,379	4,352	973	22
Impairment losses	—	55	55	#
(Income) from unconsolidated subsidiaries	(4)	(11)	(7)	(64)
Income from operations	661	802	(141)	(18)
Interest expense	336	306	(30)	(10)
(Gain) loss on extinguishment of debt	8	(1)	(9)	#
Other (income) expense, net	9	28	19	68
Income before income taxes	308	469	(161)	(34)
Income tax expense	15	19	4	21
Net income	293	450	(157)	(35)
Net income attributable to the noncontrolling interest	(2)	(9)	7	78
Net income attributable to Calpine	$ 291	$ 441	$ (150)	(34)

	2020	2019	Change	% Change
Operating Performance Metrics:				
MWh generated (in thousands)(1)(2)	47,405	43,257	4,148	10
Average availability(2)	84.0%	84.2%	(0.2)%	—
Average total MW in operation(1)	25,273	25,558	(285)	(1)
Average capacity factor, excluding peakers	47.1%	43.9%	3.2 %	7
Steam Adjusted Heat Rate(2)	7,311	7,305	(6)	—

\# Variance of 100% or greater

(1) Represents generation and capacity from power plants that we both consolidate and operate and excludes Greenfield LP, Whitby (through the sale date of November 20, 2019), Freeport Energy Center, 21.5% of Hidalgo Energy Center, 25% of Freestone Energy Center and 25% of Russell City Energy Center through January 28, 2020. Subsequent to that date, 100% of Russell City Energy Center is included.

(2) Generation, average availability and Steam Adjusted Heat Rate exclude power plants and units that are inactive.

We evaluate our Commodity revenue and Commodity expense on a collective basis because the price of power and natural gas tend to move together as the price for power is generally determined by the variable operating cost of the next marginal generator to be dispatched to meet demand. The spread between our Commodity revenue and Commodity expense represents a significant portion of our Commodity Margin. Our financial performance is correlated to how we maximize our Commodity Margin through management of our portfolio of power plants, as well as our hedging and optimization activities. See additional segment discussion in "Commodity Margin by Segment."

Commodity revenue, net of Commodity expense, decreased $203 million for the six months ended June 30, 2020, compared to the same period in 2019, primarily due to (favorable variances are shown without brackets while unfavorable variances are shown with brackets):

(in millions)	
$ (130)	Lower margins primarily driven by lower contribution from wholesale hedging activity resulting from milder weather in the first quarter of 2020, lower market Spark Spreads in the West and the sale of our Garrison and RockGen Energy Centers in July 2019. The decrease was partially offset by the commencement of commercial operations at our 828 MW York 2 Energy Center in March 2019 and higher resource adequacy revenue in the West
(90)	Lower PJM and ISO-NE regulatory capacity revenue in our East segment
17	Period-over-period change in contract amortization, lease levelization relating to tolling contracts and other[1]
$ (203)	

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(1) Commodity Margin excludes amortization expense related to contracts recorded at fair value, non-cash GAAP-related adjustments to levelize revenues from tolling agreements, Commodity revenue and Commodity expense attributable to the noncontrolling interest and other unusual items or non-recurring items.

Mark-to-market gain/loss, net from hedging our future generation, fuel supply requirements and retail activities had a favorable variance of $3 million primarily driven by mark-to-market losses recognized on the settlement of hedges during the six months ended June 30, 2019 that exceeded mark-to-market settlement roll off losses recognized during the same period in 2020. This positive variance is partially offset by mark-to-market gains recognized on forward commodity hedge positions as market prices declined during the six months ended June 30, 2019, which were in excess of the mark-to-market gains recognized during the same period in 2020.

Our normal, recurring operating and maintenance expense, after excluding the effect of power plant portfolio changes and other one-time items such as COVID-19 pandemic costs as well as major maintenance expense associated with planned outages, was relatively unchanged for the six months ended June 30, 2020 compared to the same period in 2019.

Depreciation and amortization expense decreased by $22 million for the six months ended June 30, 2020 compared to the same period in 2019 primarily due to adjustments related to our asset retirement obligations during the first quarter of 2019 and various assets being fully depreciated in 2019.

Other operating expenses decreased by $7 million for the six months ended June 30, 2020 compared to the same period in 2019 primarily due to lower project development expense following the sale of development projects.

During the six months ended June 30, 2019, we recorded impairment losses of approximately $55 million related to the sale of our Garrison and RockGen Energy Centers.

(Income) from unconsolidated subsidiaries decreased by $7 million for the six months ended June 30, 2020 compared to the same period in 2019 primarily due to the sale of Whitby in November 2019.

Interest expense increased by $30 million for the six months ended June 30, 2020 compared to the same period in 2019 primarily due to mark-to-market losses on interest rate derivative instruments executed in the first quarter of 2020 which are accounted for as economic hedges of forward interest rate exposure.

Gain (loss) on extinguishment of debt had an unfavorable variance of $9 million for the six months ended June 30, 2020 compared to the same period in 2019 primarily due to debt modification and extinguishment costs associated with our GPC Term Loan and the payoff of the Steamboat project debt facility in June 2020.

Other (income) expense, net decreased by $19 million for the six months ended June 30, 2020 compared to the same period in 2019 primarily due to the settlement agreement with General Electric International, Inc. executed in February 2019 related to the Inland Empire Energy Center.

During the six months ended June 30, 2020, we recorded an income tax expense of $15 million compared to $19 million for the six months ended June 30, 2019. The favorable period-over-period change primarily resulted from the partial release of our valuation allowance associated with our NOLs during the second quarter of 2020.

Net income attributable to the noncontrolling interest decreased by $7 million for the six months ended June 30, 2020 compared to the same period in 2019 due to our acquisition of the 25% noncontrolling interest of Russell City Energy Company, LLC on January 28, 2020.

COMMODITY MARGIN BY SEGMENT

We use Commodity Margin to assess reportable segment performance. Commodity Margin includes revenues recognized on our wholesale and retail power sales activity, electric capacity sales, REC sales, steam sales, realized settlements associated with our marketing, hedging, optimization and trading activity less costs from our fuel and purchased energy expenses, commodity transmission and transportation expenses, environmental compliance expenses and ancillary retail expense. We believe that Commodity Margin is a useful tool for assessing the performance of our core operations and is a key operational measure of profit reviewed by our chief operating decision maker. See Note 11 of the Notes to Consolidated Condensed Financial Statements for a reconciliation of Commodity Margin to income (loss) from operations by segment.

Commodity Margin by Segment for the Three Months Ended June 30, 2020 and 2019

The following tables show our Commodity Margin by segment and related operating performance metrics by regional segment for our wholesale business for the three months ended June 30, 2020 and 2019 (exclusive of the noncontrolling interest). In the comparative tables below, favorable variances are shown without brackets while unfavorable variances are shown with brackets. The MWh generated by regional segment below represent generation from power plants that we both consolidate and operate. Generation, average availability and Steam Adjusted Heat Rate exclude power plants and units that are inactive.

West:	2020	2019	Change	% Change
Commodity Margin (in millions)	$ 269	$ 251	$ 18	7
Commodity Margin per MWh generated	$ 48.78	$ 62.52	$ (13.74)	(22)
MWh generated (in thousands)	5,515	4,015	1,500	37
Average availability	84.4%	79.7%	4.7%	6
Average total MW in operation	7,590	7,430	160	2
Average capacity factor, excluding peakers	35.4%	26.6%	8.8%	33
Steam Adjusted Heat Rate	7,552	7,526	(26)	—

West — Commodity Margin in our West segment increased by $18 million, or 7%, for the three months ended June 30, 2020 compared to the three months ended June 30, 2019, primarily due to higher resource adequacy revenue, increased contribution from higher generation driven in part by the restart of our South Point Energy Center during the second half of 2019, and the acquisition on January 28, 2020 of the 25% noncontrolling interest of Russell City Energy Company, LLC, which was previously owned by a third party.

Texas:	2020	2019	Change	% Change
Commodity Margin (in millions)	$ 172	$ 173	$ (1)	(1)
Commodity Margin per MWh generated	$ 15.12	$ 16.48	$ (1.36)	(8)
MWh generated (in thousands)	11,377	10,497	880	8
Average availability	80.9%	80.9%	—%	—

Average total MW in operation	8,913	8,855	58	1
Average capacity factor, excluding peakers	58.4%	54.3%	4.1%	8
Steam Adjusted Heat Rate	7,088	7,149	61	1

Texas — Commodity Margin in our Texas segment was relatively unchanged for the three months ended June 30, 2020 compared to the three months ended June 30, 2019. Lower contribution from hedging activity was largely offset by modestly higher market Spark Spreads during the second quarter of 2020 compared to the same period in 2019.

East:	2020	2019	Change	% Change
Commodity Margin (in millions)	$ 193	$ 235	$ (42)	(18)
Commodity Margin per MWh generated	$ 34.46	$ 35.37	$ (0.91)	(3)
MWh generated (in thousands)	5,601	6,644	(1,043)	(16)
Average availability	79.6%	83.5%	(3.9)%	(5)
Average total MW in operation	8,811	9,623	(812)	(8)
Average capacity factor, excluding peakers	36.0%	41.8%	(5.8)%	(14)
Steam Adjusted Heat Rate	7,665	7,571	(94)	(1)

East — Commodity Margin in our East segment decreased by $42 million, or 18%, for the three months ended June 30, 2020 compared to the three months ended June 30, 2019, primarily due to lower regulatory capacity revenue in ISO-NE and PJM and the period-over-period effect of the sale of our Garrison and RockGen Energy Centers in July 2019. Generation decreased 16% due to the sale of Garrison Energy Center and planned outages during the second quarter of 2020 compared to the same period in 2019.

Retail:	2020	2019	Change	% Change
Commodity Margin (in millions)	$ 89	$ 93	$ (4)	(4)

Retail — Commodity Margin in our retail segment was relatively unchanged for the three months ended June 30, 2020 compared to the three months ended June 30, 2019.

Commodity Margin by Segment for the Six Months Ended June 30, 2020 and 2019

The following tables show our Commodity Margin by segment and related operating performance metrics by regional segment for our wholesale business for the six months ended June 30, 2020 and 2019 (exclusive of the noncontrolling interest). In the comparative tables below, favorable variances are shown without brackets while unfavorable variances are shown with brackets. The MWh generated by regional segment below represent generation from power plants that we both consolidate and operate. Generation, average availability and Steam Adjusted Heat Rate exclude power plants and units that are inactive.

West:	2020	2019	Change	% Change
Commodity Margin (in millions)	$ 503	$ 515	$ (12)	(2)
Commodity Margin per MWh generated	$ 40.22	$ 47.76	$ (7.54)	(16)
MWh generated (in thousands)	12,505	10,784	1,721	16
Average availability	86.7%	83.3%	3.4%	4
Average total MW in operation	7,566	7,428	138	2
Average capacity factor, excluding peakers	40.4%	35.9%	4.5%	13
Steam Adjusted Heat Rate	7,457	7,391	(66)	(1)

West — Commodity Margin in our West segment decreased by $12 million, or 2%, for the six months ended June 30, 2020 compared to the six months ended June 30, 2019, primarily due to lower market Spark Spreads in January and February 2020 resulting largely from lower natural gas prices in Southern California and lower contribution from hedging activity. The period-over-period decrease in Commodity Margin was partially offset by higher resource adequacy revenue and increased contribution from higher generation driven in part by the restart of our South Point Energy Center during the second half of 2019.

Texas:	2020	2019	Change	% Change
Commodity Margin (in millions)	$ 285	$ 335	$ (50)	(15)
Commodity Margin per MWh generated	$ 12.78	$ 16.17	$ (3.39)	(21)
MWh generated (in thousands)	22,295	20,713	1,582	8
Average availability	80.8%	81.8%	(1.0)%	(1)
Average total MW in operation	8,896	8,852	44	—
Average capacity factor, excluding peakers	57.4%	53.9%	3.5 %	6
Steam Adjusted Heat Rate	7,080	7,110	30	—

Texas — Commodity Margin in our Texas segment decreased by $50 million, or 15%, for the six months ended June 30, 2020 compared to the six months ended June 30, 2019, primarily due to lower contribution from hedging activity primarily during the first quarter of 2020 when compared to the same period during 2019.

East:	2020	2019	Change	% Change
Commodity Margin (in millions)	$ 343	$ 500	$ (157)	(31)
Commodity Margin per MWh generated	$ 27.21	$ 42.52	$ (15.31)	(36)
MWh generated (in thousands)	12,605	11,760	845	7
Average availability	85.0%	87.3%	(2.3)%	(3)
Average total MW in operation	8,811	9,278	(467)	(5)
Average capacity factor, excluding peakers	40.6%	39.1%	1.5 %	4
Steam Adjusted Heat Rate	7,613	7,596	(17)	—

East — Commodity Margin in our East segment decreased by $157 million, or 31%, for the six months ended June 30, 2020 compared to the six months ended June 30, 2019, primarily due to lower regulatory capacity revenue in ISO-NE and PJM, the sale of our Garrison and RockGen Energy Centers in July 2019 and lower contribution from hedging activity resulting from milder weather during the first quarter of 2020 compared to the same period in 2019. The decrease in Commodity Margin was partially offset by the commencement of commercial operations at our 828 MW York 2 Energy Center in March 2019, which was also the primary contributor to the 7% increase in generation.

Retail:	2020	2019	Change	% Change
Commodity Margin (in millions)	$ 180	$ 181	$ (1)	(1)

Retail — Commodity Margin in our retail segment was relatively unchanged for the six months ended June 30, 2020 compared to the six months ended June 30, 2019.

LIQUIDITY AND CAPITAL RESOURCES

We maintain a strong focus on liquidity. We manage our liquidity to help provide access to sufficient funding to meet our business needs and financial obligations throughout business cycles.

Our business is capital intensive. Our ability to successfully implement our strategy is dependent on the continued availability of capital on attractive terms. In addition, our ability to successfully operate our business is dependent on maintaining sufficient liquidity. We believe that we have adequate resources from a combination of cash and cash equivalents on hand and cash expected to be generated from future operations to continue to meet our obligations as they become due.

Liquidity

The following table provides a summary of our liquidity position at June 30, 2020 and December 31, 2019 (in millions):

	June 30, 2020	December 31, 2019
Cash and cash equivalents, corporate[1]	$ 574	$ 1,072
Cash and cash equivalents, non-corporate[2]	103	59
Total cash and cash equivalents	677	1,131
Restricted cash[2]	241	345
Corporate Revolving Facility availability[3]	1,534	1,392
CDHI revolving facility availability[4]	1	1
Other facilities availability[5]	37	3
Total current liquidity availability[6]	$ 2,490	$ 2,872

(1) Our ability to use corporate cash and cash equivalents is unrestricted. On January 21, 2020, we used the remaining cash on hand from the issuance of our 2028 First Lien Notes and 2028 Senior Unsecured Notes to redeem approximately $1,052 million aggregate principal amount of our 2022 and 2024 First Lien Notes and 2023 Senior Unsecured Notes. See Note 4 of the Notes to Consolidated Condensed Financial Statements for further information related to the redemption of our 2022 and 2024 First Lien Notes and 2023 Senior Unsecured Notes.

(2) See Note 1 of the Notes to Consolidated Condensed Financial Statements for a description of the restrictions on our use of non-corporate cash and cash equivalents and restricted cash.

(3) Our ability to use availability under our Corporate Revolving Facility is unrestricted. At June 30, 2020, the approximately $2.0 billion in total capacity under our Corporate Revolving Facility is comprised of $462 million in letters of credit outstanding, no borrowings outstanding and $1,534 million in remaining available capacity.

(4) Our CDHI revolving facility is restricted to support certain obligations under PPAs and power transmission and natural gas transportation agreements as well as fund the construction of our Washington Parish Energy Center.

(5) On April 9, 2020, we amended one of our unsecured letter of credit facilities to partially extend the maturity of $100 million in commitments from June 20, 2020 to June 20, 2022. On June 9, 2020, we entered into the GPC Term Loan which provides for $200 million in letter of credit facilities.

(6) Includes $23 million and $127 million of margin deposits posted with us by our counterparties at June 30, 2020 and December 31, 2019, respectively. See Note 7 of the Notes to Consolidated Condensed Financial Statements for further information related to our collateral.

Our principal source for future liquidity is cash flows generated from our operations. We believe that cash on hand and expected future cash flows from operations will be sufficient to meet our liquidity needs for our operations, both in the near and longer term. See “Cash Flow Activities” below for a further discussion of our change in cash, cash equivalents and restricted cash.

Our principal uses of liquidity and capital resources, outside of those required for our operations, include, but are not limited to, collateral requirements to support our commercial hedging and optimization activities, debt service obligations including principal and interest payments, capital expenditures for construction, project development and other growth initiatives and opportunistically repaying debt to manage our balance sheet.

Cash Management — We manage our cash in accordance with our cash management system subject to the requirements of our Corporate Revolving Facility and requirements under certain of our project debt and lease agreements or by regulatory agencies. Our cash and cash equivalents, as well as our restricted cash balances, are invested in money market funds that are not FDIC insured. We place our cash, cash equivalents and restricted cash in what we believe to be creditworthy financial institutions.

Future cash dividends, if any, may be authorized at the discretion of our Board of Directors and will depend upon, among other things, our future operations and earnings, capital requirements, asset sales, general financial condition, contractual and financing restrictions and such other factors as our Board of Directors may deem relevant.

Liquidity Sensitivity

Significant changes in commodity prices and Market Heat Rates can affect our liquidity as we use margin deposits, cash prepayments and letters of credit as credit support (collateral) with and from our counterparties for commodity procurement and risk management activities. We estimate that as of June 30, 2020, a three standard deviation shift in collateral exposure based on commodity market price changes for the previous 12 months applied to our current portfolio of margined transactions would result in an increase in collateral posted of approximately $336 million. This amount is not necessarily indicative of the actual amounts that could be required, which may be higher or lower than the amounts estimated above, and also exclude any correlation between the changes in natural gas prices and Market Heat Rates that may occur concurrently. These sensitivities will change as new contracts or hedging activities are executed.

In order to effectively manage our future Commodity Margin, we have economically hedged a portion of our expected generation and natural gas portfolio as well as retail load supply obligations, where appropriate, mostly through power and natural gas forward physical and financial transactions including retail power sales; however, we currently remain susceptible to significant price movements for 2020 and beyond. In addition to the price of natural gas, our Commodity Margin is highly dependent on other factors such as:

- the level of Market Heat Rates;
- our continued ability to successfully hedge our Commodity Margin;
- changes in U.S. macroeconomic conditions;
- maintaining acceptable availability levels for our fleet;
- the effect of current and pending environmental regulations in the markets in which we participate;
- improving the efficiency and profitability of our operations;
- increasing future contractual cash flows; and
- our significant counterparties performing under their contracts with us.

Additionally, scheduled outages related to the life cycle of our power plant fleet in addition to unscheduled outages may result in maintenance expenditures that are disproportionate in differing periods. In order to manage such liquidity requirements, we maintain additional liquidity availability in the form of our Corporate Revolving Facility (noted in the table above), letters of credit and the ability to issue first priority liens for collateral support. It is difficult to predict future developments and the amount of credit support that we may need to provide should such conditions occur, we experience an economic recession or energy commodity prices increase significantly.

Letter of Credit Facilities

The table below represents amounts issued under our letter of credit facilities at June 30, 2020 and December 31, 2019 (in millions):

	June 30, 2020	December 31, 2019
Corporate Revolving Facility[1]	$ 462	$ 604
CDHI	3	3
Various project financing facilities[2]	336	184
Other corporate facilities[3]	275	294
Total	$ 1,076	$ 1,085

(1) The Corporate Revolving Facility represents our primary revolving facility and matures on March 8, 2023.

(2) On June 9, 2020, we entered into the GPC Term Loan which provides for $200 million in letter of credit facilities.

(3) On April 9, 2020, we amended one of our unsecured letter of credit facilities to partially extend the maturity of $100 million in commitments from June 20, 2020 to June 20, 2022.

California Wildfire

A wildfire known as the Kincade Fire began on October 23, 2019 in Sonoma County, California where our Geysers Assets are located and burned on parts of the 45 square miles that make up our Geysers Assets properties and leasehold. Operating equipment at our Geysers Assets sustained limited damage which has been repaired. The fire caused extensive damage to third-party property in the region. Transmission service owned and operated by PG&E was cut due to the fire and high wind conditions, forcing us to suspend operations. In March 2020, transmission was restored and we resumed full operations of our Geysers Assets.

Prior to the fire, in response to forecasted severe wind conditions and PG&E's Public Safety Power Shutoff ("PSPS"), personnel at our Geysers Assets followed fire prevention protocols, including de-energizing the local power system that supports our Geysers Assets operations. We do not believe our facilities caused or contributed to the start of the fire, nor do we believe we have any liability for damages caused by the fire. Notably, on July 16, 2020, the California Department of Forestry and Fire Protection ("CALFIRE") issued a press release stating that transmission lines owned and operated by PG&E were the cause of the Kincade Fire, however, CALFIRE has not yet released its investigation report.

Our Geysers Assets remain a critical part of the California plan to achieve a low-carbon future. In our view, our investments and processes at our Geysers Assets assure the facilities are as fire resistant and resilient as possible, and we expect our Geysers Assets will remain ready to help California meet that challenge.

NOLs

We have significant NOLs that will provide future tax deductions as an offset to taxable income during the applicable carryover periods. At December 31, 2019, our consolidated federal NOLs totaled approximately $7.1 billion. Additionally, we had a federal valuation allowance in the amount of $873 million at December 31, 2019 due to the uncertainty in our ability to utilize NOLs prior to expiration.

Cash Flow Activities

The following table summarizes our cash flow activities for the six months ended June 30, 2020 and 2019 (in millions):

	2020	2019
Beginning cash, cash equivalents and restricted cash	$ 1,476	$ 406
Net cash provided by (used in):		
Operating activities	434	519
Investing activities	(304)	(315)
Financing activities	(688)	(51)
Net increase (decrease) in cash, cash equivalents and restricted cash	(558)	153
Ending cash, cash equivalents and restricted cash	$ 918	$ 559

Net Cash Provided By Operating Activities

Cash provided by operating activities for the six months ended June 30, 2020, was $434 million compared to $519 million for the six months ended June 30, 2019. The decrease was primarily due to:

- *Income from operations* — Income from operations, adjusted for non-cash items primarily including depreciation and amortization, impairment losses, and mark to market gains decreased by $228 million for the six months ended June 30, 2020, compared to 2019. The decrease in income from operations, adjusted for non-cash items, was primarily driven by a $203 million decrease in Commodity revenue, net of Commodity expense which is driven by a decrease in regulatory capacity revenues in PJM and ISO-NE as well as a lower contribution from hedging activity on milder weather during the first quarter of 2020 when compared to the same period during 2019.

- *Working capital employed* — Working capital employed decreased by $123 million for the six months ended June 30, 2020, compared to the same period in 2019. The decrease is primarily driven by a reduction in margin postings associated with our forward hedging positions, a reduction in environmental products inventory procurement, and change in timing of interest payable accruals as a result of the refinancing efforts undertaken during the fourth quarter of 2019.

Net Cash Used In Investing Activities

Cash used in investing activities for the six months ended June 30, 2020, was $304 million compared to $315 million for the six months ended June 30, 2019. The decrease was primarily due to:

- *Capital expenditures* — During the six months ended June 30, 2020, we incurred lower capital expenditures on construction and growth projects as compared to the same period in 2019 due to the completion of our York 2 Energy Center in March 2019.

Net Cash Used In Financing Activities

Cash used in financing activities for the six months ended June 30, 2020, was $688 million compared to $51 million for the six months ended June 30, 2019. The change was primarily due to:

- *Debt transactions* — During the six months ended June 30, 2020, we redeemed aggregate principal outstanding in the amount of $1,052 million consisting of $623 million of the 2023 Senior Unsecured Notes, $245 million of the 2022 First Lien Notes and $184 million of the 2024 First Lien Notes utilizing proceeds received from the issuance of our 2028 First Lien Notes and 2028 Senior Unsecured Notes during December 2019. This variance was partially reduced by the repurchase of $48 million in aggregate principal of Senior Unsecured Notes for $44 million during the six months ended June 30, 2019, where no similar repurchases were noted during the same time period during 2020.

- *GPC Term Loan* — During the six months ended June 30, 2020, GPC entered into a new seven-year $900 million first lien senior secured term loan facility and three senior secured revolving letter of credit facilities totaling $200 million. We incurred lender fees and third party costs associated with the GPC Term Loan of $28 million. The proceeds from the Geysers financing transaction were utilized in part to repay the Steamboat project debt principal amount of $348 million.

- *Corporate Revolving Facility* — During the six months ended June 30, 2019, we had net borrowings of $45 million under our Corporate Revolving Facility, compared to no net borrowings during the same period in 2020.

- *Acquisition* — During the six months ended June 30, 2020, we completed our acquisition of the 25% noncontrolling interest of Russell City Energy Company, LLC for $35 million plus working capital adjustments of approximately $14 million for a total purchase price of approximately $49 million.

Off Balance Sheet Arrangements

There have been no material changes to our off balance sheet arrangements from those disclosed in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our 2019 Form 10-K.

Special Purpose Subsidiaries

Pursuant to applicable transaction agreements, we have established certain of our entities separate from Calpine Corporation and our other subsidiaries. In accordance with applicable accounting standards, we consolidate these entities with the exception of Calpine Receivables (see Notes 7 and 17 of the Notes to Consolidated Financial Statements in our 2019 Form 10-K for further information related to Calpine Receivables). As of the date of filing of this Report, these entities included: Russell City Energy Company, LLC, GPC, Calistoga Holdings, LLC, Wildhorse Geothermal, LLC, Geysers Intermediate Holdings, LLC, Geysers Company, LLC and Calpine Receivables.

Russell City Energy Company, LLC — On January 28, 2020, we completed the acquisition of the 25% of Russell City Energy Company, LLC, which was owned by a third party, for $35 million plus working capital adjustments of approximately $14 million for a total purchase price of approximately $49 million.

RISK MANAGEMENT AND COMMODITY ACCOUNTING

Our commercial hedging and optimization strategies are designed to maximize our risk-adjusted Commodity Margin by leveraging our knowledge, experience and fundamental views on natural gas and power. We actively manage our risk exposures with a variety of physical and financial instruments with varying time horizons. These instruments include PPAs, tolling arrangements, Heat Rate swaps and options, retail power sales including through our retail subsidiaries, steam sales, buying and selling standard physical power and natural gas products, buying and selling exchange traded instruments, buying and selling environmental and capacity products, natural gas transportation and storage arrangements, electric transmission service and other contracts for the sale and purchase of power products. We utilize these instruments to maximize the risk-adjusted returns for our Commodity Margin. Our retail portfolio has been established to provide an additional source of liquidity for our generation fleet as we hedge retail load from our wholesale generation assets as appropriate.

We conduct our hedging and optimization activities within a structured risk management framework based on controls, policies and procedures. We monitor these activities through active and ongoing management and oversight, defined roles and responsibilities, and daily risk estimates and reporting. Additionally, we seek to manage the associated risks through diversification, by controlling position sizes, by using portfolio position limits, and by actively managing hedge positions to lock in margin. We are exposed to commodity price movements (both profits and losses) in connection with these transactions. These positions are included in and subject to our consolidated risk management portfolio position limits and controls structure. Changes in fair value of commodity positions that do not qualify for or for which we do not elect either hedge accounting or the normal purchase normal sale exemption are recognized currently in earnings and are separately stated on our Consolidated Condensed Statements of Operations in mark-to-market gain/loss as a component of operating revenues (for physical and financial power and Heat Rate and commodity option activity) and fuel and purchased energy expense (for physical and financial natural gas, power, environmental product and fuel oil activity). Our future hedged status and marketing and optimization activities are subject to change as determined by our commercial operations group, Chief Risk Officer, senior management and Board of Directors.

At any point in time, the relative quantity of our products hedged or sold under longer-term contracts is determined by the availability of forward product sales opportunities and our view of the attractiveness of the pricing available for forward sales. We have economically hedged a portion of our expected generation and natural gas portfolio as well as retail load supply obligations, where appropriate, mostly through power and natural gas forward physical and financial transactions including retail power sales; however, we currently remain susceptible to significant price movements for 2020 and beyond. When we elect to enter into these transactions, we are able to economically hedge a portion of our Spark Spread at pre-determined generation and price levels.

We have historically used interest rate hedging instruments to adjust the mix between our fixed and variable rate debt. A portion of our interest rate hedging instruments have been designated as cash flow hedges, and changes in fair value are recorded in OCI with gains and losses reclassified into earnings in the same period during which the hedged forecasted transaction affects earnings. See Note 6 of the Notes to Consolidated Condensed Financial Statements for further discussion of our derivative instruments.

The primary factors affecting our market risk and the fair value of our derivatives at any point in time are the volume of open derivative positions (MMBtu, MWh and $ notional amounts); changing commodity market prices, primarily for power and natural gas; our credit standing and that of our counterparties for energy commodity derivatives; and prevailing interest rates for our interest rate hedging instruments. Since prices for power and natural gas and interest rates are volatile, there may be material changes in the fair value of our derivatives over time, driven both by price volatility and the changes in volume of open derivative transactions. Our derivative assets have increased to approximately $449 million at June 30, 2020, compared to approximately $402 million at December 31, 2019, and our derivative liabilities have increased to approximately $364 million at June 30, 2020, compared to approximately $288 million at December 31, 2019. The fair value of our level 3 derivative assets and liabilities at June 30, 2020 represents approximately 37% and 21% of our total assets and liabilities measured at fair value, respectively. See Note 5 of the Notes to Consolidated Condensed Financial Statements for further information related to our level 3 derivative assets and liabilities.

The change in fair value of our outstanding commodity and interest rate hedging instruments from January 1, 2020, through June 30, 2020, is summarized in the table below (in millions):

	Commodity Instruments	Interest Rate Hedging Instruments	Total
Fair value of contracts outstanding at January 1, 2020	$ 133	$ (19)	$ 114
Items recognized or otherwise settled during the period[(1)(2)]	(52)	21	(31)
Fair value attributable to new contracts[(3)]	88	(86)	2
Changes in fair value attributable to price movements	77	(77)	—
Fair value of contracts outstanding at June 30, 2020[(4)]	$ 246	$ (161)	$ 85

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(1) Commodity contract settlements consist of the realization of previously recognized gains on contracts not designated as hedging instruments of $44 million (represents a portion of Commodity revenue and Commodity expense as reported on our Consolidated Condensed Statements of Operations) and $(8) million related to current period losses from other changes in derivative assets and liabilities not reflected in OCI or earnings.

(2) Interest rate settlements consist of $5 million related to realized losses from settlements of designated cash flow hedges and $16 million related to realized losses roll-off from settlements of undesignated interest rate hedging instruments (represents a portion of interest expense as reported on our Consolidated Condensed Statements of Operations).

(3) Fair value attributable to new contracts includes $(8) million and nil of fair value related to commodity contracts and interest rate hedging instruments, respectively, which are not reflected in OCI or earnings.

(4) We netted all amounts allowed under the derivative accounting guidance on our Consolidated Condensed Balance Sheet, which includes derivative transactions under enforceable master netting arrangements and related cash collateral. Net commodity and interest rate derivative assets and liabilities reported in Notes 5 and 6 of the Notes to Consolidated Condensed Financial Statements are shown net of collateral paid to and received from counterparties under legally enforceable master netting arrangements.

Commodity Price Risk — Commodity price risks result from exposure to changes in spot prices, forward prices, price volatilities and correlations between the price of power, steam and natural gas. We manage the commodity price risk and the variability in future cash flows from forecasted sales of power and purchases of natural gas of our entire portfolio of generating assets and contractual positions by entering into various derivative and non-derivative instruments.

The net fair value of outstanding derivative commodity instruments, net of allocated collateral, at June 30, 2020, based on price source and the period during which the instruments will mature, are summarized in the table below (in millions):

Fair Value Source	2020	2021-2022	2023-2024	After 2024	Total
Prices actively quoted	$ —	$ —	$ —	$ —	$ —
Prices provided by other external sources	(65)	61	3	1	—
Prices based on models and other valuation methods	28	95	74	49	246
Total fair value	$ (37)	$ 156	$ 77	$ 50	$ 246

We measure the energy commodity price risk in our portfolio on a daily basis using a VAR model to estimate the potential one-day risk of loss based upon historical experience resulting from potential market movements. Our VAR is calculated for our entire portfolio comprising energy commodity derivatives, expected generation and natural gas consumption from our power plants, PPAs, and other physical and financial transactions. We measure VAR using a variance/covariance approach based on a confidence level of 95%, a one-day holding period and actual observed historical correlation. While we believe that our VAR assumptions and approximations are reasonable, different assumptions and/or approximations could produce materially different estimates.

The table below presents the high, low and average of our daily VAR for the three and six months ended June 30, 2020 and 2019 (in millions):

	2020	2019
Three months ended June 30:		
High	$ 27	$ 39
Low	$ 13	$ 22
Average	$ 20	$ 28
Six months ended June 30:		
High	$ 29	$ 50
Low	$ 13	$ 22
Average	$ 20	$ 32
As of June 30	$ 15	$ 37

Due to the inherent limitations of statistical measures such as VAR, the VAR calculation may not capture the full extent of our commodity price exposure. As a result, actual changes in the value of our energy commodity portfolio could be different from the calculated VAR, and could have a material effect on our financial results. In order to evaluate the risks of our portfolio on a comprehensive basis and augment our VAR analysis, we also measure the risk of the energy commodity portfolio using several analytical methods including sensitivity analysis, non-statistical scenario analysis, including stress testing, and daily position report analysis.

We utilize the forward commodity markets to hedge price risk associated with our power plant portfolio. Our ability to hedge relies in part on market liquidity and the number of counterparties with which to transact. If the number of counterparties in these markets were to decrease, it could decrease our ability to hedge our forward commodity price risk and create incremental volatility in our earnings. The effects of declining liquidity in the forward commodity markets is also mitigated by our retail subsidiaries which provides us with an additional outlet to transact hedging activities related to our wholesale power plant portfolio.

Liquidity Risk — Liquidity risk arises from the general funding requirements needed to manage our activities and assets and liabilities. Fluctuating natural gas prices or Market Heat Rates can cause our collateral requirements for our wholesale and retail activities to increase or decrease. Our liquidity management framework is intended to maximize liquidity access and minimize funding costs during times of rising prices. See further discussion regarding our uses of collateral as they relate to our commodity procurement and risk management activities in Note 7 of the Notes to Consolidated Condensed Financial Statements.

Credit Risk — Credit risk relates to the risk of loss resulting from nonperformance or non-payment by our counterparties or customers related to their contractual obligations with us. Risks surrounding counterparty and customer performance and credit could ultimately affect the amount and timing of expected cash flows. We also have credit risk if counterparties or customers are unable to provide collateral or post margin. We monitor and manage our credit risk through credit policies that include:

- credit approvals;
- routine monitoring of counterparties' and customer's credit limits and their overall credit ratings;
- limiting our marketing, hedging and optimization activities with high risk counterparties;
- margin, collateral, or prepayment arrangements; and
- payment netting arrangements, or master netting arrangements that allow for the netting of positive and negative exposures of various contracts associated with a single counterparty.

We have concentrations of credit risk with a few of our wholesale counterparties and retail customers relating to our sales of power and steam and our hedging, optimization and trading activities. For example, our wholesale business currently has contracts with investor owned California utilities, which could be affected should they be found liable for recent wildfires in California and, accordingly, incur substantial costs associated with the wildfires.

On July 1, 2020, PG&E and PG&E Corporation emerged from bankruptcy. We currently have several power plants that provide energy and energy-related products to PG&E under PPAs, many of which have PG&E collateral posting requirements. Subsequent to the bankruptcy filing, we received all material payments under the PPAs, either directly or through the application of collateral. We also currently have numerous other agreements with PG&E related to the operation of our power plants in Northern

California, under which PG&E continued to provide service subsequent to its bankruptcy filing. Under PG&E's plan of reorganization, our PPAs were assumed and any restrictions on our projects arising from the bankruptcy were cured.

We believe that our credit policies and portfolio of transactions adequately monitor and diversify our credit risk, and currently our counterparties and customers are performing and financially settling timely according to their respective agreements. We monitor and manage our total comprehensive credit risk associated with all of our contracts irrespective of whether they are accounted for as an executory contract, a normal purchase normal sale or whether they are marked-to-market and included in our derivative assets and liabilities on our Consolidated Condensed Balance Sheets. Our counterparty and customer credit quality associated with the net fair value of outstanding derivative commodity instruments is included in our derivative assets and (liabilities), net of allocated collateral, at June 30, 2020, and the period during which the instruments will mature are summarized in the table below (in millions):

Credit Quality (Based on Credit Ratings as of June 30, 2020)	**2020**	**2021-2022**	**2023-2024**	**After 2024**	**Total**
Investment grade	$ (70)	$ 60	$ 23	$ 8	$ 21
Non-investment grade	(6)	18	11	19	42
No external ratings[(1)]	39	78	43	23	183
Total fair value	$ (37)	$ 156	$ 77	$ 50	$ 246

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(1) Primarily comprised of the fair value of derivative instruments held with customers that are not rated by third-party credit agencies due to the nature and size of the customers.

Interest Rate Risk — We are exposed to interest rate risk related to our variable rate debt. Interest rate risk represents the potential loss in earnings arising from adverse changes in market interest rates. Our variable rate financings are indexed to base rates, generally LIBOR. Our interest rate hedging instruments are with counterparties we believe are primarily high quality institutions, and we do not believe that our interest rate instruments expose us to any significant credit risk. Holding all other factors constant, we estimate that a 10% decrease in interest rates would result in a change in the fair value of our interest rate instruments of approximately $(8) million at June 30, 2020.

New Accounting Standards and Disclosure Requirements

See Note 1 of the Notes to Consolidated Condensed Financial Statements for a discussion of new accounting standards and disclosure requirements.

Item 3. ***Quantitative and Qualitative Disclosures About Market Risk***

The information required to be disclosed under this Item 3 is set forth under Item 2 “Management’s Discussion and Analysis of Financial Condition and Results of Operations — Risk Management and Commodity Accounting.” This information should be read in conjunction with the information disclosed in our 2019 Form 10-K.

Item 4. ***Controls and Procedures***

Disclosure Controls and Procedures

As of the end of the period covered by this Report, we carried out an evaluation, under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures as defined in Rule 13a-15(e) and Rule 15d-15(e) of the Exchange Act. Based upon, and as of the date of, this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective such that the information required to be disclosed in our SEC reports is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms, and is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Changes in Internal Control Over Financial Reporting

During the second quarter of 2020, there were no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II — OTHER INFORMATION

Item 1. ***Legal Proceedings***

See Note 9 of the Notes to Consolidated Condensed Financial Statements for a description of our legal proceedings.

Item 1A. ***Risk Factors***

Except as set forth below, there were no changes to the description of the risk factors previously disclosed in Part I, Item 1A "Risk Factors" of our 2019 Form 10-K.

The ongoing COVID-19 pandemic could have a material adverse effect on our business operations, results of operations, cash flows and financial position.

In December 2019, a novel strain of coronavirus, COVID-19, was identified. The COVID-19 outbreak is a widespread health crisis that has negatively affected large segments of the global economy, disrupted financial markets and international trade, resulting in increased unemployment levels and significantly impacted global supply chains, all of which may have a material adverse impact on our industry. In addition, federal, state and local governments have in the past and may in the future implement various restrictions, including travel restrictions, border closings, restrictions on public gatherings, shelter-in-place restrictions and limitations on business. Although we are considered an essential business, any of these actions could adversely impact the ability of our employees, contractors, suppliers, customers and other business partners to conduct business activities for an indefinite period of time, which could have a material adverse effect on our results of operations, financial condition and liquidity. In particular, the ongoing spread of COVID-19 and efforts to contain the virus could:

- reduce the availability and productivity and impact the health and well-being of our employees, customers and business partners;
- impact our liquidity position and cost of and ability to access funds from financial institutions and capital markets;
- reduce electricity and steam demand in some or all of the regions in which we operate for a prolonged period, impacting our revenue;
- cause delays and disruptions in the availability of and timely delivery of materials and components used in our operations and development activities; and
- cause other unpredictable events.

We have instituted measures to ensure our supply chain remains open to us; however, if prolonged global shortages were to occur, this could have a material adverse impact on our maintenance and capital programs that we currently cannot anticipate. Although we continue to implement strong physical and cyber-security measures to ensure that our systems remain functional in order to both serve our operational needs with a remote workforce and keep them running to ensure uninterrupted service to our customers, our systems and operations remain vulnerable to cyber-attacks and other disruptions due in part to the fact that a portion of our employees continue to work remotely as a result of the ongoing COVID-19 outbreak. Despite our efforts to manage various impacts, the situation surrounding the COVID-19 outbreak remains fluid and the potential for a material impact on our results of operations, financial condition and liquidity increases the longer the virus impacts activity levels in the U.S. and globally. The ultimate impact of the COVID-19 outbreak depends on factors beyond our knowledge or control, including the duration and severity of the COVID-19 outbreak on the economy as well as third-party actions taken to contain its spread and mitigate its public health effects. Therefore, we currently cannot estimate with any degree of certainty the potential impact to our financial position, results of operations and cash flows.

Item 2. ***Unregistered Sales of Equity Securities and Use of Proceeds***

None.

Item 3. ***Defaults Upon Senior Securities***

None.

Item 4. *Mine Safety Disclosures*

Not applicable.

Item 5. ***Other Information***

None.

Item 6. ***Exhibits***

EXHIBIT INDEX

Exhibit Number	Description
10.1	Credit Agreement, dated as of June 9, 2020, among Geysers Power Company, LLC, the guarantors party thereto and MUFG Bank, Ltd, as administrative agent, MUFG Union Bank, N.A., as First Lien Collateral Agent, and the lenders and issuing banks parties thereto (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed with the SEC on June 12, 2020).*
31.1	Certification of the Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of the Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification of the Chief Executive Officer and the Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.**
101.INS	XBRL Instance Document.
101.SCH	XBRL Taxonomy Extension Schema.
101.CAL	XBRL Taxonomy Extension Calculation Linkbase.
101.DEF	XBRL Taxonomy Extension Definition Linkbase.
101.LAB	XBRL Taxonomy Extension Label Linkbase.
101.PRE	XBRL Taxonomy Extension Presentation Linkbase.

* Schedules and certain similar attachments to this exhibit have been omitted pursuant to Item 601(a)(5) of Regulation S-K. The Company agrees to furnish supplementally to the SEC a copy of any omitted attachment upon request.

** Furnished herewith.

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.

CALPINE CORPORATION
(Registrant)

By: /s/ ZAMIR RAUF

Zamir Rauf
Executive Vice President and Chief Financial Officer
(Principal Financial Officer)

Date: August 12, 2020

EXHIBIT 31.1

CERTIFICATIONS

I, John B. (Thad) Hill III, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Calpine Corporation (the “registrant”);

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 functions):

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

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

Date: August 12, 2020

/s/ JOHN B. (THAD) HILL III

John B. (Thad) Hill III

President, Chief Executive Officer and Director

Calpine Corporation

EXHIBIT 31.2

CERTIFICATIONS

I, Zamir Rauf, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Calpine Corporation (the “registrant”);

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 functions):

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

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

Date: August 12, 2020

/s/ ZAMIR RAUF

Zamir Rauf

Executive Vice President and
Chief Financial Officer

Calpine Corporation

EXHIBIT 32.1

**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 Calpine Corporation (the "Company") on Form 10-Q for the period ended June 30, 2020, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), each of the undersigned does 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 his or her knowledge, based upon a review of the Report:

(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.

/s/ JOHN B. (THAD) HILL III	/s/ ZAMIR RAUF
John B. (Thad) Hill III	Zamir Rauf
President,	Executive Vice President and
Chief Executive Officer and Director	Chief Financial Officer
Calpine Corporation	Calpine Corporation

Dated: August 12, 2020

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

Document and Entity Information - shares	6 Months Ended	
	Jun. 30, 2020	Aug. 12, 2020
Entity Information [Line Items]		
Entity Registrant Name	CALPINE CORP	
Entity Central Index Key	0000916457	
Current Fiscal Year End Date	--12-31	
Entity Filer Category	Non-accelerated Filer	
Document Type	10-Q	
Document Period End Date	Jun. 30, 2020	
Document Fiscal Year Focus	2020	
Document Fiscal Period Focus	Q2	
Amendment Flag	false	
Entity Small Business	false	
Entity Emerging Growth Company	false	
Entity Shell Company	false	
Entity Current Reporting Status	No	
Entity Common Stock, Shares Outstanding		105.2

Consolidated Condensed Statements of Operations (Unaudited) - USD ($) $ in Millions	3 Months Ended		6 Months Ended	
	Jun. 30, 2020	Jun. 30, 2019	Jun. 30, 2020	Jun. 30, 2019
Operating revenues:				
Commodity revenue	$ 1,852	$ 2,128	$ 3,795	$ 4,666
Mark-to-market gain (loss)	(113)	467	232	523
Other revenue	5	4	9	9
Operating revenues	1,744 [1]	2,599 [1]	4,036 [2]	5,198 [2]
Operating expenses:				
Commodity expense	1,110	1,367	2,457	3,125
Mark-to-market (gain) loss	(148)	280	(4)	290
Fuel and purchased energy expense	962	1,647	2,453	3,415
Operating and maintenance expense	266	245	506	484
Depreciation and amortization expense	163	175	327	349
General and other administrative expense	31	34	62	66
Other operating expenses	14	19	31	38
Total operating expenses	1,436	2,120	3,379	4,352
Impairment losses	0	40	0	55
(Income) from unconsolidated subsidiaries	(4)	(5)	(4)	(11)
Income from operations	312	444	661	802
Interest expense	167	157	336	306
(Gain) loss on extinguishment of debt	8	3	8	(1)
Other (income) expense, net	5	5	9	28
Income before income taxes	132	279	308	469
Income tax expense (benefit)	(31)	9	15	19
Net income (loss)	163	270	293	450
Net income attributable to the noncontrolling interest	0	(4)	(2)	(9)
Net income attributable to Calpine	$ 163	$ 266	$ 291	$ 441

[1] Includes intersegment revenues of $70 million and $100 million in the West, $214 million and $348 million in Texas, $24 million and $228 million in the East and $2 million and $1 million in Retail for the three months ended June 30, 2020 and 2019, respectively.

[2] Includes intersegment revenues of $189 million and $262 million in the West, $432 million and $559 million in Texas, $199 million and $365 million in the East and $3 million and $4 million in Retail for the six months ended June 30, 2020 and 2019, respectively.

Consolidated Condensed Statements of Comprehensive Income (Unaudited) - USD ($) $ in Millions	3 Months Ended		6 Months Ended	
	Jun. 30, 2020	Jun. 30, 2019	Jun. 30, 2020	Jun. 30, 2019
Statement of Comprehensive Income [Abstract]				
Net income	$ 163	$ 270	$ 293	$ 450
Cash flow hedging activities:				
Loss on cash flow hedges before reclassification adjustment for cash flow hedges realized in net income	(22)	(29)	(132)	(52)
Reclassification adjustment for (gain) loss on cash flow hedges realized in net income	25	(3)	31	(5)
Foreign currency translation gain (loss)	3	1	(4)	3
Income tax benefit (expense)	(1)	1	2	1
Other comprehensive income (loss)	5	(30)	(103)	(53)
Comprehensive income	168	240	190	397
Comprehensive (income) attributable to the noncontrolling interest	0	(3)	(2)	(8)
Comprehensive income attributable to Calpine	$ 168	$ 237	$ 188	$ 389

Consolidated Condensed Balance Sheets (Unaudited) - USD ($) $ in Millions	Jun. 30, 2020		Dec. 31, 2019	
Current assets:				
Cash and cash equivalents	$ 677		$ 1,131	
Accounts receivable, net of allowance of $9 and $9	683		757	
Inventories	517		543	
Margin deposits and other prepaid expense	346		367	
Restricted cash, current	225		299	
Derivative assets, current	199	[1]	156	[2] [3]
Other current assets	42		49	
Total current assets	2,689		3,302	
Property, plant and equipment, net	11,937		11,963	
Restricted cash, net of current portion	16		46	
Investments in unconsolidated subsidiaries	67		70	
Derivative Asset, Noncurrent	250	[1]	246	[2] [3]
Goodwill	242		242	
Intangible assets, net	316		340	
Other assets	438		440	
Total assets	15,955		16,649	
Current liabilities:				
Accounts payable	569		714	
Accrued interest payable	108		61	
Debt, current portion	231		1,268	
Derivative Liability, Current	168	[1]	225	[2] [3]
Other current liabilities	531		657	
Total current liabilities	1,607		2,925	
Debt, net of current portion	10,874		10,438	
Long-term derivative liabilities	196	[1]	63	[2] [3]
Other long-term liabilities	479		565	
Total liabilities	13,156		13,991	
Commitments and contingencies (see Note 9)				
Stockholder’s equity:				
Common stock, $0.001 par value per share; authorized 5,000 shares, 105.2 shares issued and outstanding	0		0	
Additional paid-in capital	9,651		9,584	
Accumulated deficit	(6,632)		(6,923)	
Accumulated other comprehensive loss	(220)		(114)	
Total Calpine stockholder’s equity	2,799		2,547	
Noncontrolling interest	0		111	
Total stockholder’s equity	2,799		2,658	
Total liabilities and stockholder’s equity	$ 15,955		$ 16,649	

[1] At June 30, 2020 and December 31, 2019, we had $260 million and $191 million, respectively, of collateral under master netting arrangements that were not offset against our derivative instruments on the Consolidated Condensed Balance Sheets primarily related to initial margin requirements.

[2] At June 30, 2020, current and long-term derivative assets are shown net of collateral of $(28) million and $(9) million, respectively, and current and long-term derivative liabilities are shown net of collateral of $1 million and $43 million, respectively.

[3] At December 31, 2019, current and long-term derivative assets are shown net of collateral of $(4) million and $(4) million, respectively, and current and long-term derivative liabilities are shown net of collateral of $108 million and $14 million, respectively.

Consolidated Condensed Balance Sheets (Unaudited) (Parenthetical) - USD ($) $ in Millions	Jun. 30, 2020	Dec. 31, 2019
Statement of Financial Position [Abstract]		
Accounts receivable, net of allowance of $9 and $9	$ 9	$ 9
Common stock, par value (in usd per share)	$ 0.001	$ 0.001
Common stock, shares authorized (in shares)	5,000	5,000
Common stock, shares issued (in shares)	105.2	105.2
Common stock, shares outstanding (in shares)	105.2	105.2

Consolidated Statements of Stockholders' Equity (Unaudited) Consolidated Statements of Stockholders' Equity (Unaudited) - USD ($) $ in Millions	Total	Common Stock	Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Noncontrolling Interest
Beginning Balance at Dec. 31, 2018	$ 3,056	$ 0	$ 9,582	$ (6,542)	$ (77)	$ 93
Net income	180	0	0	175	0	5
Other comprehensive income (loss)	(23)	0	0	0	(23)	0
Other	0	0	2	0	0	(2)
Ending Balance at Mar. 31, 2019	3,213	0	9,584	(6,367)	(100)	96
Beginning Balance at Dec. 31, 2018	3,056	0	9,582	(6,542)	(77)	93
Net income	450					
Other comprehensive income (loss)	(53)					
Ending Balance at Jun. 30, 2019	3,453	0	9,584	(6,101)	(129)	99
Beginning Balance at Mar. 31, 2019	3,213	0	9,584	(6,367)	(100)	96
Net income	270	0	0	266	0	4
Other comprehensive income (loss)	(30)	0	0	0	(29)	(1)
Ending Balance at Jun. 30, 2019	3,453	0	9,584	(6,101)	(129)	99
Beginning Balance at Dec. 31, 2019	2,658	0	9,584	(6,923)	(114)	111
Net income	130	0	0	128	0	2
Other comprehensive income (loss)	(108)	0	0	0	(108)	0
Acquisition of noncontrolling interest (Note 3)	(49)	0	(67)	0	3	113
Ending Balance at Mar. 31, 2020	2,631	0	9,651	(6,795)	(225)	0
Beginning Balance at Dec. 31, 2019	2,658	0	9,584	(6,923)	(114)	111
Net income	293					
Other comprehensive income (loss)	(103)					
Ending Balance at Jun. 30, 2020	2,799	0	9,651	(6,632)	(220)	0

Beginning Balance at Mar. 31, 2020	2,631	0	9,651	(6,795)	(225)	0
Net income	163	0	0	163	0	0
Other comprehensive income (loss)	5	0	0	0	5	0
Ending Balance at Jun. 30, 2020	$ 2,799	$ 0	$ 9,651	$ (6,632)	$ (220)	$ 0

Consolidated Condensed Statements of Cash Flows (Unaudited) - $ in Millions	6 Months Ended			
	Jun. 30, 2020 USD ($)		Jun. 30, 2019 USD ($)	
Payments to Acquire Additional Interest in Subsidiaries	$ 49	[1]	$ 0	[1]
Restricted Cash and Cash Equivalents	241			
Cash flows from operating activities:				
Net income	293		450	
Adjustments to reconcile net income to net cash provided by operating activities:				
Depreciation and amortization	361	[2]	398	[2]
Non Cash Gains Losses On Extinguishment Of Debt	6		0	
Deferred income taxes	9		16	
Impairment losses	0		55	
Mark-to-market activity, net	(198)	[3]	(231)	[3]
(Income) from unconsolidated subsidiaries	(4)		(11)	
Return on investments from unconsolidated subsidiaries	0		11	
Other	10		(3)	
Change in operating assets and liabilities:				
Accounts receivable	75		215	
Accounts payable	(122)		(269)	
Margin deposits and other prepaid expense	21		40	
Other assets and liabilities, net	(146)		(61)	
Derivative instruments, net	129		(91)	
Net cash provided by operating activities	434		519	
Cash flows from investing activities:				
Purchases of property, plant and equipment	(320)		(304)	
Other	16		(11)	
Net cash used in investing activities	(304)		(315)	
Cash flows from financing activities:				
Proceeds from Issuance of Secured Debt	0		941	
Repayment of CCFC Term Loan and First Lien Term Loans	(22)		(942)	
Repayments of First Lien Notes	(429)		0	
Repayments of Senior Unsecured Notes	(623)		(44)	
Borrowings under revolving facilities	450		220	
Repayments of revolving facilities	(450)		(175)	
Proceeds from Issuance of Other Long-term Debt	900		34	
Repayments of project financing, notes payable and other	(412)		(77)	
Financing costs	(46)		(8)	
Other	(7)		0	
Net cash used in financing activities	(688)		(51)	
Net increase (decrease) in cash, cash equivalents and restricted cash	(558)		153	
Cash, cash equivalents and restricted cash, beginning of period	1,476		406	

Cash, cash equivalents and restricted cash, end of period	918 [4]	559 [4]
Cash paid during the period for:		
Interest, net of amounts capitalized	221	283
Income taxes	2	8
Supplemental disclosure of non-cash investing and financing activities:		
Change in capital expenditures included in accounts payable and other current liabilities	(27)	19
Plant tax settlement offset in prepaid assets	0	(4)
Asset retirement obligation adjustment offset in operating activities	0	(10)
Other Current Assets		
Supplemental disclosure of non-cash investing and financing activities:		
Transfer of Portfolio Loans and Leases to Held-for-sale	0	(335)
Other Current Liabilities		
Supplemental disclosure of non-cash investing and financing activities:		
Transfer of Portfolio Loans and Leases to Held-for-sale	0	$ (22)
Security project insurance		
Restricted Cash and Cash Equivalents	$ 130	

[1] On January 28, 2020, we completed the acquisition of the 25% noncontrolling interest of Russell City Energy Company, LLC for $35 million plus working capital adjustments of approximately $14 million for a total purchase price of approximately $49 million.

[2] Includes amortization recorded in Commodity revenue and Commodity expense associated with intangible assets and amortization recorded in interest expense associated with debt issuance costs and discounts.

[3] In addition to changes in market value on derivatives not designated as hedges, changes in mark-to-market gain (loss) also includes adjustments to reflect changes in credit default risk exposure.

[4])Our cash and cash equivalents, restricted cash, current and restricted cash, net of current portion are stated as separate line items on our Consolidated Condensed Balance Sheets.

Basis of Presentation and Summary of Significant Accounting Policies	6 Months Ended
	Jun. 30, 2020
Accounting Policies [Abstract]	
Basis of Presentation and Summary of Significant Accounting Policies	**Basis of Presentation and Summary of Significant Accounting Policies** We are one of the largest power generators in the U.S. We own and operate primarily natural gas-fired and geothermal power plants in North America and have a significant presence in major competitive wholesale and retail power markets in California, Texas, and the Northeast and mid-Atlantic regions of the U.S. We sell power, steam, capacity, renewable energy credits and ancillary services to our wholesale customers, which include utilities, independent electric system operators and industrial companies, retail power providers, municipalities, CCAs and other governmental entities and power marketers. Additionally, through our retail brands, we market retail energy and related products to commercial, industrial, governmental and residential customers. We continue to focus on providing products and services that are beneficial to our wholesale and retail customers. We purchase primarily natural gas and some fuel oil as fuel for our power plants and engage in related natural gas transportation and storage transactions. We also purchase power and related products for sale to our customers and purchase electric transmission rights to deliver power to our customers. Additionally, consistent with our Risk Management Policy, we enter into natural gas, power, environmental product, fuel oil and other physical and financial commodity contracts to hedge certain business risks and optimize our portfolio of power plants. *Basis of Interim Presentation* — The accompanying unaudited, interim Consolidated Condensed Financial Statements of Calpine Corporation, a Delaware corporation, and consolidated subsidiaries have been prepared pursuant to the rules and regulations of the SEC. In the opinion of management, the Consolidated Condensed Financial Statements include the normal, recurring adjustments necessary for a fair statement of the information required to be set forth therein. Certain information and note disclosures, normally included in financial statements prepared in accordance with U.S. GAAP, have been condensed or omitted from these statements pursuant to such rules and regulations and, accordingly, these financial statements should be read in conjunction with our audited Consolidated Financial Statements for the year ended December 31, 2019, included in our 2019 Form 10-K. The results for interim periods are not indicative of the results for the entire year primarily due to acquisitions and disposals of assets, seasonal fluctuations in our revenues and expenses, timing of major maintenance expense, variations resulting from the application of the method to calculate the provision for income tax for interim periods, volatility of commodity prices and mark-to-market gains and losses from commodity and interest rate derivative contracts. *Use of Estimates in Preparation of Financial Statements* — The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues, expenses and related disclosures included in our Consolidated Condensed Financial Statements. Actual results could differ from those estimates. *Cash and Cash Equivalents* — We consider all highly liquid investments with an original maturity of three months or less to be cash equivalents. We have cash and cash equivalents held in non-corporate accounts relating to certain project finance facilities and lease agreements that require us to establish and maintain segregated cash accounts. These accounts have been pledged as security in favor of the lenders under such project finance facilities, and the use of certain cash balances on deposit in such accounts is limited, at least temporarily, to the operations of the respective projects. *Restricted Cash* — Certain of our debt agreements, lease agreements or other operating agreements require us to establish and maintain segregated cash accounts, the use of which is restricted, making these cash funds unavailable for general use. These amounts are held by

depository banks in order to comply with the contractual provisions requiring reserves for payments such as for debt service, rent and major maintenance or with applicable regulatory requirements. Funds that can be used to satisfy obligations due during the next 12 months are classified as current restricted cash, with the remainder classified as non-current restricted cash. Restricted cash is generally invested in accounts earning market rates; therefore, the carrying value approximates fair value. Such cash is excluded from cash and cash equivalents on our Consolidated Condensed Balance Sheets.

The table below represents the components of our restricted cash as of June 30, 2020 and December 31, 2019 (in millions):

	June 30, 2020			December 31, 2019		
	Current	Non-Current	Total	Current	Non-Current	Total
Debt service[(1)]	$ 55	$ 8	$ 63	$ 58	$ 8	$ 66
Construction/major maintenance[(2)]	35	7	42	28	6	34
Security/project/insurance[(3)]	130	—	130	209	31	240
Other	5	1	6	4	1	5
Total	$ 225	$ 16	$ 241	$ 299	$ 46	$ 345

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(1) At June 30, 2020, includes $52 million in restricted cash that will be transferred to cash and cash equivalents during the third quarter of 2020 as a result of PG&E's emergence from bankruptcy.

(2) At June 30, 2020, includes $2 million in restricted cash that will be transferred to cash and cash equivalents during the third quarter of 2020 as a result of PG&E's emergence from bankruptcy.

(3) At December 31, 2019, includes $119 million in restricted cash associated with margin deposits received from PG&E that were returned to PG&E and replaced with letters of credit during the second quarter of 2020. At June 30, 2020, includes $34 million in restricted cash that will be transferred to cash and cash equivalents during the third quarter of 2020 as a result of PG&E's emergence from bankruptcy.

Accounts Receivable — Accounts receivable represents amounts due from customers. Accounts receivable are recorded at invoiced amounts, net of reserves and allowances, and do not bear interest as the balances are short term in nature. On January 1, 2020, we adopted the provisions of Accounting Standards Update 2016-13, "Measurement of Credit Losses on Financial Instruments" ("ASU 2016-13"). We use a variety of information to determine our allowance for expected credit losses based on multiple factors including the length of time receivables are past due, current and future economic trends and conditions affecting our customer base, significant one-time events, historical write-off experience and forward-looking information such as internally developed forecasts. See below for further information related to our adoption of ASU 2016-13.

Property, Plant and Equipment, Net — At June 30, 2020 and December 31, 2019, the components of property, plant and equipment are stated at cost less accumulated depreciation as follows (in millions):

	June 30, 2020	December 31, 2019	Depreciable Lives
Buildings, machinery and equipment	$ 16,488	$ 16,510	1.5 – 50 Years
Geothermal properties	1,595	1,553	13 – 58 Years

Other	282	291	3 – 50 Years
	18,365	18,354	
Less: Accumulated depreciation	6,907	6,851	
	11,458	11,503	
Land	128	128	
Construction in progress	351	332	
Property, plant and equipment, net	$ 11,937	$ 11,963	

Capitalized Interest — The total amount of interest capitalized was $3 million and $1 million during the three months ended June 30, 2020 and 2019, respectively, and $5 million and $8 million during the six months ended June 30, 2020 and 2019, respectively.

Goodwill — We assess the carrying amount of our goodwill annually for impairment during the third quarter and whenever events or changes in circumstances indicate that the carrying value may not be recoverable. We have not recorded any impairment losses or changes in the carrying amount of our goodwill during the three and six months ended June 30, 2020 and 2019.

Leases

Lessee — Supplemental balance sheet information related to our operating and finance leases is as follows as of June 30, 2020 and December 31, 2019 (in millions):

	Location on Consolidated Condensed Balance Sheet	June 30, 2020	December 31, 2019
Right-of-use assets – operating leases	Other assets	$ 165	$ 171
Right-of-use assets – finance leases	Property, plant and equipment, net	$ 102	$ 107
Operating lease obligation, current	Other current liabilities	$ 15	$ 12
Operating lease obligation, long-term	Other long-term liabilities	$ 164	$ 170
Finance lease obligation, current	Debt, current portion	$ 10	$ 10
Finance lease obligation, long-term	Debt, net of current portion	$ 58	$ 63

Lessor — We apply lease accounting to PPAs that meet the definition of a lease and determine lease classification treatment at commencement of the agreement. Revenue recognized related to fixed lease payments on our operating leases was $57 million and $70 million during the three months ended June 30, 2020 and 2019, respectively, and $105 million and $139 million during the six months ended June 30, 2020 and 2019, respectively.

New Accounting Standards and Disclosure Requirements

Financial Instruments–Credit Losses — In June 2016, the FASB issued ASU 2016-13. The standard provides a new model for recognizing credit losses on financial assets carried at amortized cost using an estimate of expected credit losses, instead of the "incurred loss" methodology previously required for recognizing credit losses that delayed recognition until it was probable that a loss was incurred. The estimate of expected credit losses is to be based on consideration of past events, current conditions and reasonable and supportable forecasts of future conditions. The scope of the standard is limited to our trade account receivable balances and the standard is effective for fiscal years beginning after December 15, 2019. We adopted ASU 2016-13 on January 1, 2020 with no cumulative effect adjustment recognized upon adoption. The adoption of ASU 2016-13 did not have a material effect on our financial condition, results of operations or cash flows.

Fair Value Measurements — In August 2018, the FASB issued Accounting Standards Update 2018-13, "Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement." The standard removes, modifies and adds disclosures about fair value measurements and is effective for fiscal years beginning after December 15, 2019. We adopted Accounting Standards Update 2018-13 on January 1, 2020, which did not have a material effect on our financial condition, results of operations or cash flows.

Income Taxes — In December 2019, the FASB issued Accounting Standards Update 2019-12, "Simplifying the Accounting for Income Taxes." The standard is intended to simplify the accounting for income taxes by removing certain exceptions and improve consistent application by clarifying guidance related to the accounting for income taxes. The standard is effective for fiscal years beginning after December 15, 2020 with early adoption permitted including in interim periods. We adopted Accounting Standards Update 2019-12 on January 1, 2020, which did not have a material effect on our financial condition, results of operations or cash flows.

Revenue From Contracts with Customers Revenue From Contracts with Customers	6 Months Ended
	Jun. 30, 2020
Revenue from Contract with Customer [Abstract]	
Revenue from Contract with Customer	

Revenue from Contracts with Customers

Disaggregation of Revenues with Customers

The following tables represent a disaggregation of our operating revenues for the three and six months ended June 30, 2020 and 2019 by reportable segment (in millions). See Note 11 for a description of our segments.

	Three Months Ended June 30, 2020					
	Wholesale					
	West	Texas	East	Retail	Elimination	Total
Third Party:						
Energy & other products	$ 163	$ 254	$ 99	$ 322	$ —	$ 838
Capacity	66	28	104	—	—	198
Revenues relating to physical or executory contracts – third party	$ 229	$ 282	$ 203	$ 322	$ —	$ 1,036
Affiliate[(1)]*:*	$ 9	$ 10	$ 20	$ 2	$ (41)	$ —
Revenues relating to leases and derivative instruments[(2)]						$ 707
Other						1
Total operating revenues						$ 1,744

	Three Months Ended June 30, 2019					
	Wholesale					
	West	Texas	East	Retail	Elimination	Total
Third Party:						
Energy & other products	$ 145	$ 318	$ 124	$ 413	$ —	$ 1,000
Capacity	36	33	154	—	—	223
Revenues relating to physical or executory contracts – third party	$ 181	$ 351	$ 278	$ 413	$ —	$ 1,223
Affiliate[(1)]*:*	$ 6	$ 14	$ 30	$ 1	$ (51)	$ —
Revenues relating to leases and derivative instruments[(2)]						$ 1,376
Total operating revenues						$ 2,599

	Six Months Ended June 30, 2020					
	Wholesale					
	West	Texas	East	Retail	Elimination	Total
Third Party:						
Energy & other products	$ 364	$ 473	$ 205	$ 646	$ —	$ 1,688
Capacity	128	56	209	—	—	393
Revenues relating to physical or executory contracts – third party	$ 492	$ 529	$ 414	$ 646	$ —	$ 2,081
Affiliate(1):	$ 26	$ 20	$ 39	$ 3	$ (88)	$ —
Revenues relating to leases and derivative instruments(2)						$ 1,953
Other						2
Total operating revenues						$ 4,036

	Six Months Ended June 30, 2019					
	Wholesale					
	West	Texas	East	Retail	Elimination	Total
Third Party:						
Energy & other products	$ 437	$ 620	$ 327	$ 825	$ —	$ 2,209
Capacity	71	65	331	—	—	467
Revenues relating to physical or executory contracts – third party	$ 508	$ 685	$ 658	$ 825	$ —	$ 2,676
Affiliate(1):	$ 17	$ 28	$ 57	$ 4	$ (106)	$ —
Revenues relating to leases and derivative instruments(2)						$ 2,522
Total operating revenues						$ 5,198

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(1) Affiliate energy, other and capacity revenues reflect revenues on transactions between wholesale and retail affiliates excluding affiliate activity related to leases and derivative instruments. All such activity supports retail supply needs from the wholesale business and/or allows for collateral margin netting efficiencies at Calpine.

(2) Revenues relating to contracts accounted for as leases and derivatives include energy and capacity revenues relating to PPAs that we are required to account for as operating leases and physical and financial commodity derivative contracts, primarily relating to power, natural gas and environmental products. Revenue related to derivative instruments includes revenue recorded in Commodity revenue and mark-to-market gain (loss) within our operating revenues on our Consolidated Condensed Statements of Operations.

Performance Obligations and Contract Balances

At June 30, 2020 and December 31, 2019, deferred revenue balances relating to contracts with our customers were included in other current liabilities on our Consolidated Condensed

Balance Sheets and primarily relate to sales of environmental products and capacity. We classify deferred revenue as current or long-term based on the timing of when we expect to recognize revenue. The balance outstanding at June 30, 2020 and December 31, 2019 was $27 million and $14 million, respectively. The revenue recognized during the three months ended June 30, 2020 and 2019, relating to the deferred revenue balance at the beginning of each period was $2 million and $2 million, respectively. The revenue recognized during the six months ended June 30, 2020 and 2019, relating to the deferred revenue balance at the beginning of each period was $2 million and $3 million, respectively. Revenue recognized each period relating to deferred revenue balances resulted from our performance under the customer contracts. The change in the deferred revenue balance during the three and six months ended June 30, 2020 and 2019 was primarily due to the timing difference of when consideration was received and when the related good or service was transferred.

Performance Obligations not yet Satisfied

As of June 30, 2020, we have entered into certain contracts for fixed and determinable amounts with customers under which we have not yet completed our performance obligations which primarily includes agreements for which we are providing capacity from our generating facilities. We have revenues related to the sale of capacity through participation in various ISO capacity auctions estimated based upon cleared volumes and the sale of capacity to our customers of $346 million, $672 million, $449 million, $330 million and $203 million that will be recognized during the years ending December 31, 2020, 2021, 2022, 2023 and 2024, respectively, and $108 million thereafter. Revenues under these contracts will be recognized as we transfer control of the commodities to our customers.

Variable Interest Entities and Unconsolidated Investments	6 Months Ended Jun. 30, 2020
Variable Interest Entities and Unconsolidated Investments [Abstract]	
Variable interest entities and unconsolidated investments	(see below)

Variable Interest Entities and Unconsolidated Investments

We consolidate all of our VIEs where we have determined that we are the primary beneficiary. There were no changes to our determination of whether we are the primary beneficiary of our VIEs for the six months ended June 30, 2020. See Note 7 in our 2019 Form 10-K for further information regarding our VIEs.

Consolidated VIEs

Our consolidated VIEs include natural gas-fired and geothermal power plants with an aggregate capacity of 7,354 MW and 6,669 MW at June 30, 2020 and December 31, 2019, respectively. For these VIEs, we may provide other operational and administrative support through various affiliate contractual arrangements among the VIEs, Calpine Corporation and its other wholly owned subsidiaries whereby we support the VIE through the reimbursement of costs and/or the purchase and sale of energy. Other than amounts contractually required, we provided no additional material support to our VIEs in the form of cash and other contributions during each of the three and six months ended June 30, 2020 and 2019.

The table below has been updated to incorporate GPC as a consolidated VIE following the issuance of the GPC Term Loan during the second quarter of 2020. The table details summarized financial information (excluding intercompany balances which are eliminated in consolidation) for our consolidated VIEs as of June 30, 2020 and December 31, 2019 (in millions):

	June 30, 2020	December 31, 2019
Assets:		
Current assets	$ 371	$ 371
Property, plant and equipment, net	3,846	3,454
Restricted cash, net of current portion	16	15
Other assets	151	53
Total assets	$ 4,384	$ 3,893
Liabilities:		
Current liabilities	$ 250	$ 303
Debt, net of current portion	2,083	1,635
Long-term derivative liabilities	10	8
Other long-term liabilities	60	53
Total liabilities	$ 2,403	$ 1,999

Noncontrolling Interest — On January 28, 2020, we completed the acquisition of the 25% noncontrolling interest of Russell City Energy Company, LLC, which was owned by a third party, for $35 million plus working capital adjustments of approximately $14 million for a total purchase price of approximately $49 million, resulting in a $67 million increase to additional paid-in capital. Prior to the acquisition, we accounted for the third party ownership interest as a noncontrolling interest.

Unconsolidated VIEs and Investments in Unconsolidated Subsidiaries

We have a 50% partnership interest in Greenfield LP which is also a VIE; however, we do not have the power to direct the most significant activities of this entity and therefore do not consolidate it. Greenfield LP is a limited partnership between certain subsidiaries of ours and of Mitsui & Co., Ltd., which operates the Greenfield Energy Centre, a 1,038 MW natural gas-fired, combined-cycle power plant located in Ontario, Canada.

Calpine Receivables is a VIE and a bankruptcy remote entity created for the special purpose of purchasing trade accounts receivable from Calpine Solutions under the Accounts Receivable Sales Program. We have determined that we do not have the power to direct the activities of the VIE that most significantly affect the VIE's economic performance nor the obligation to absorb losses or receive benefits from the VIE. Accordingly, we have determined that we are not the primary beneficiary of Calpine Receivables because we do not have the power to affect its financial performance as the unaffiliated financial institutions that purchase the receivables from Calpine Receivables control the selection criteria of the receivables sold and appoint the servicer of the receivables which controls management of default. Thus, we do not consolidate Calpine Receivables in our Consolidated Condensed Financial Statements and use the equity method of accounting to record our net interest in Calpine Receivables.

We account for these entities under the equity method of accounting and include our net equity interest in investments in unconsolidated subsidiaries on our Consolidated Condensed Balance Sheets. At June 30, 2020 and December 31, 2019, our equity method investments included on our Consolidated Condensed Balance Sheets were comprised of the following (in millions):

	Ownership Interest as of June 30, 2020	June 30, 2020	December 31, 2019
Greenfield LP(1)	50%	$ 63	$ 66
Calpine Receivables	100%	4	4
Total investments in unconsolidated subsidiaries		$ 67	$ 70

(1) Includes our share of AOCI related to interest rate hedging instruments associated with our unconsolidated subsidiary Greenfield LP's debt.

Our risk of loss related to our investment in Greenfield LP is limited to our investment balance. Our risk of loss related to our investment in Calpine Receivables is $51 million which consists of our notes receivable from Calpine Receivables at June 30, 2020 and our initial investment associated with Calpine Receivables. See Note 10 for further information associated with our related party activity with Calpine Receivables.

Holders of the debt of our unconsolidated investments do not have recourse to Calpine Corporation and its other subsidiaries; therefore, the debt of our unconsolidated investments is not reflected on our Consolidated Condensed Balance Sheets. At June 30, 2020 and December 31, 2019, Greenfield LP's debt was approximately $276 million and $299 million, respectively, and based on our pro rata share of our investment in Greenfield LP, our share of such debt would be approximately $138 million and $150 million at June 30, 2020 and December 31, 2019, respectively.

Our equity interest in the net income from our investments in unconsolidated subsidiaries for the three and six months ended June 30, 2020 and 2019, is recorded in (income) from unconsolidated subsidiaries. The following table sets forth details of our (income) from unconsolidated subsidiaries for the periods indicated (in millions):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019

Greenfield LP	$ (3)	$ (4)	$ (4)	$ (6)
Whitby[1]	—	(2)	—	(6)
Calpine Receivables	(1)	1	—	1
Total	$ (4)	$ (5)	$ (4)	$ (11)

(1) On November 20, 2019, we sold our 50% interest in Whitby to a third party.

Distributions from Greenfield LP were nil during each of the three and six months ended June 30, 2020 and 2019. Distributions from Whitby were nil and $11 million during the three and six months ended June 30, 2019, respectively. We did not have material distributions from our investment in Calpine Receivables for the three and six months ended June 30, 2020 and 2019.

Debt

Debt Disclosure [Abstract]

Debt

	6 Months Ended Jun. 30, 2020

Debt

Our debt at June 30, 2020 and December 31, 2019, was as follows (in millions):

	June 30, 2020	December 31, 2019
First Lien Term Loans	$ 3,155	$ 3,167
Senior Unsecured Notes	3,042	3,663
First Lien Notes	2,408	2,835
CCFC Term Loan	962	967
GPC Term Loan	867	—
Project financing, notes payable and other	481	879
Finance lease obligations	68	73
Revolving facilities	122	122
Subtotal	11,105	11,706
Less: Current maturities	231	1,268
Total long-term debt	$ 10,874	$ 10,438

Our effective interest rate on our consolidated debt, excluding the effects of capitalized interest and mark-to-market gains (losses) on interest rate hedging instruments, decreased to 5.3% for the six months ended June 30, 2020, from 5.9% for the same period in 2019.

First Lien Term Loans

The amounts outstanding under our First Lien Term Loans are summarized in the table below (in millions):

	June 30, 2020	December 31, 2019
2024 First Lien Term Loan	$ 1,508	$ 1,514
2026 First Lien Term Loans	1,647	1,653
Total First Lien Term Loans	$ 3,155	$ 3,167

Senior Unsecured Notes

The amounts outstanding under our Senior Unsecured Notes are summarized in the table below (in millions):

	June 30, 2020	December 31, 2019
2023 Senior Unsecured Notes(1)	$ —	$ 623
2024 Senior Unsecured Notes(2)	479	479
2025 Senior Unsecured Notes(2)	1,175	1,174
2028 Senior Unsecured Notes(1)	1,388	1,387
Total Senior Unsecured Notes	$ 3,042	$ 3,663

(1) On January 21, 2020, we redeemed the outstanding $623 million in aggregate principal amount of our 2023 Senior Unsecured Notes, which was included in debt, current portion on our Consolidated Condensed Balance Sheet at December 31, 2019, with the proceeds from the 2028 Senior Unsecured Notes, which was included in cash and cash equivalents on our Consolidated Condensed Balance Sheet at December 31, 2019.

(2) On August 10, 2020, we utilized proceeds from our 2029 Senior Unsecured Notes and 2031 Senior Unsecured Notes, together with cash on hand, to purchase approximately $255 million and $1,045 million in aggregate principal amount of our 2024 Senior Unsecured Notes and 2025 Senior Unsecured Notes, respectively. On August 12, 2020, we redeemed the remaining amounts outstanding under our 2024 Senior Unsecured Notes and 2025 Senior Unsecured Notes.

On August 10, 2020, we issued $650 million in aggregate principal amount of 4.625% senior unsecured notes due 2029 and $850 million in aggregate principal amount of 5.000% senior unsecured notes due 2031 in private placements. The 2029 Senior Unsecured Notes bear interest at 4.625% per annum and the 2031 Senior Unsecured Notes bear interest at 5.000% per annum with interest payable on both series of notes semi-annually on February 1 and August 1 of each year, beginning on February 1, 2021. The 2029 Senior Unsecured Notes and 2031 Senior Unsecured Notes mature on February 1, 2029 and February 1, 2031, respectively. We used the net proceeds from the 2029 Senior Unsecured Notes and 2031 Senior Unsecured Notes, together with cash on hand, to pay the consideration in connection with the tender offers and redeem any of the 2024 Senior Unsecured Notes and 2025 Senior Unsecured Notes not tendered in connection with the tender offers.

First Lien Notes

The amounts outstanding under our First Lien Notes are summarized in the table below (in millions):

	June 30, 2020	December 31, 2019
2022 First Lien Notes[(1)]	$ —	$ 245
2024 First Lien Notes[(2)]	—	184
2026 First Lien Notes	1,173	1,172
2028 First Lien Notes	1,235	1,234
Total First Lien Notes	$ 2,408	$ 2,835

(1) On January 21, 2020, we redeemed the outstanding $245 million in aggregate principal amount of our 2022 First Lien Notes, which was included in debt, current portion on our Consolidated Condensed Balance Sheet at December 31, 2019, with the proceeds from the 2028 First Lien Notes, which was included in cash and cash equivalents on our Consolidated Condensed Balance Sheet at December 31, 2019.

(2) On January 21, 2020, we redeemed the outstanding $184 million in aggregate principal amount of our 2024 First Lien Notes, which was included in debt, current portion on our Consolidated Condensed Balance Sheet at December 31, 2019, with the proceeds from the 2028 First Lien Notes, which was included in cash and cash equivalents on our Consolidated Condensed Balance Sheet at December 31, 2019.

GPC Term Loan

On June 9, 2020, GPC and the guarantors party thereto entered into a seven-year $900 million first lien senior secured term loan facility and three senior secured revolving letter of credit facilities totaling $200 million. The GPC Term Loan is certified under the Climate Bonds Standard.

Any letters of credit issued under the GPC Term Loan letter of credit facilities must be at the request of and for the account of GPC. The GPC Term Loan bears interest, at GPC's option, at either (i) the Base Rate, equal to the highest of (a) the Federal Funds Rate plus 0.50% per annum, (b) the prime rate published in the Wall Street Journal, or (c) 1.0% plus an applicable margin of 1.0%, increasing by 0.125% every three years, or (ii) LIBOR plus an applicable margin of 2.0% per annum, increasing by 0.125% every three years. The GPC Term Loan matures on June 9, 2027, but may be prepaid at any time upon irrevocable notice to the Administrative Agent. We used a portion of the proceeds from the GPC Term Loan to repay project debt associated with Steamboat as further discussed below.

The GPC Term Loan is secured by certain real and personal property of GPC consisting primarily of the Geysers Assets. The GPC Term Loan is not guaranteed by Calpine Corporation and is without recourse to Calpine Corporation or any of our non-GPC subsidiaries or assets; however, GPC generates a portion of its cash flows from an intercompany tolling agreement with Calpine Energy Services, L.P. and has various service agreements in place with other subsidiaries of Calpine Corporation.

Project Financing, Notes Payable and Other

On June 12, 2020, we used a portion of the proceeds from the GPC Term Loan to repay approximately $342 million in carrying value of project debt associated with Steamboat and recorded approximately $8 million in loss on extinguishment of debt during the second quarter of 2020.

On July 1, 2020, PG&E and PG&E Corporation emerged from bankruptcy. Our Russell City Energy Center and Los Esteros Critical Energy Facility sell energy and energy-related products to PG&E through PPAs. Subsequent to the bankruptcy filing, we received all material payments under the PPAs, either directly or through the application of collateral. As a result of PG&E's bankruptcy, we were temporarily unable to make distributions from our Russell City and Los Esteros projects in accordance with the terms of the project debt agreements associated with each related project. Under PG&E's plan of reorganization, our PPAs were assumed and any restrictions on distributing cash from our Russell City and Los Esteros projects were cured. Additionally, the forbearance agreements associated with our Russell City and Los Esteros project debt agreements were terminated in accordance with the terms of the agreements. Accordingly, following removal of bankruptcy proceeding restrictions, our Russell City and Los Esteros projects will distribute funds in the amount of $88 million to Calpine Corporation in August 2020.

Corporate Revolving Facility and Other Letter of Credit Facilities

The table below represents amounts issued under our letter of credit facilities at June 30, 2020 and December 31, 2019 (in millions):

	June 30, 2020	December 31, 2019
Corporate Revolving Facility(1)	$ 462	$ 604
CDHI	3	3
Various project financing facilities(2)	336	184
Other corporate facilities(3)	275	294
Total	$ 1,076	$ 1,085

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(1) The Corporate Revolving Facility represents our primary revolving facility and matures on March 8, 2023.

(2) On June 9, 2020, we entered into the GPC Term Loan which provides for $200 million in letter of credit facilities.

(3) On April 9, 2020, we amended one of our unsecured letter of credit facilities to partially extend the maturity of $100 million in commitments from June 20, 2020 to June 20, 2022.

Fair Value of Debt

We record our debt instruments based on contractual terms, net of any applicable premium or discount and debt issuance costs. The following table details the fair values and carrying values of our debt instruments at June 30, 2020 and December 31, 2019 (in millions):

	June 30, 2020		December 31, 2019	
	Fair Value	Carrying Value	Fair Value	Carrying Value
First Lien Term Loans	$ 3,081	$ 3,155	$ 3,238	$ 3,167
Senior Unsecured Notes	3,027	3,042	3,764	3,663
First Lien Notes	2,404	2,408	2,929	2,835
CCFC Term Loan	941	962	982	967
GPC Term Loan	900	867	—	—
Project financing, notes payable and other[1]	426	419	822	817
Revolving facilities	122	122	122	122
Total	$ 10,901	$ 10,975	$ 11,857	$ 11,571

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(1) Excludes an agreement that is accounted for as a failed sale-leaseback transaction under U.S. GAAP.

Our First Lien Term Loans, Senior Unsecured Notes, First Lien Notes and CCFC Term Loan are categorized as level 2 within the fair value hierarchy. Our GPC Term Loan, revolving facilities and project financing, notes payable and other debt instruments are categorized as level 3 within the fair value hierarchy. We do not have any debt instruments with fair value measurements categorized as level 1 within the fair value hierarchy.

Assets and Liabilities with Recurring Fair Value Measurements	6 Months Ended Jun. 30, 2020
Fair Value Disclosures [Abstract]	
Assets and Liabilities with Recurring Fair Value Measurements	**Assets and Liabilities with Recurring Fair Value Measurements** *Cash Equivalents* — Highly liquid investments which meet the definition of cash equivalents, primarily investments in money market accounts and other interest-bearing accounts, are included in both our cash and cash equivalents and our restricted cash on our Consolidated Condensed Balance Sheets. Certain of our money market accounts invest in U.S. Treasury securities or other obligations issued or guaranteed by the U.S. Government, its agencies or instrumentalities. We do not have any cash equivalents invested in institutional prime money market funds which require use of a floating net asset value and are subject to liquidity fees and redemption restrictions. Certain of our cash equivalents are classified within level 1 of the fair value hierarchy. *Derivatives* — The primary factors affecting the fair value of our derivative instruments at any point in time are the volume of open derivative positions (MMBtu, MWh and $ notional amounts); changing commodity market prices, primarily for power and natural gas; our credit standing and that of our counterparties and customers for energy commodity derivatives; and prevailing interest rates for our interest rate hedging instruments. Prices for power and natural gas and interest rates are volatile, which can result in material changes in the fair value measurements reported in our financial statements in the future. We utilize market data, such as pricing services and broker quotes, and assumptions that we believe market participants would use in pricing our assets or liabilities including assumptions about the risks inherent to the inputs in the valuation technique. These inputs can be readily observable, market corroborated or generally unobservable. The market data obtained from broker pricing services is evaluated to determine the nature of the quotes obtained and, where accepted as a reliable quote, used to validate our assessment of fair value. We use other qualitative assessments to determine the level of activity in any given market. We primarily apply the market approach and income approach for recurring fair value measurements and utilize what we believe to be the best available information. We utilize valuation techniques that seek to maximize the use of observable inputs and minimize the use of unobservable inputs. We classify fair value balances based on the observability of those inputs. The fair value of our derivatives includes consideration of our credit standing, the credit standing of our counterparties and customers and the effect of credit enhancements, if any. We have also recorded credit reserves in the determination of fair value based on our expectation of how market participants would determine fair value. Such valuation adjustments are generally based on market evidence, if available, or our best estimate. Our level 1 fair value derivative instruments primarily consist of power and natural gas swaps, futures and options traded on the NYMEX or Intercontinental Exchange. Our level 2 fair value derivative instruments primarily consist of interest rate hedging instruments and OTC power and natural gas forwards for which market-based pricing inputs in the principal or most advantageous market are representative of executable prices for market participants. These inputs are observable at commonly quoted intervals for substantially the full term of the instruments. In certain instances, our level 2 derivative instruments may utilize models to measure fair value. These models are industry-standard models, including the Black-Scholes option-pricing model, that incorporate various assumptions, including quoted interest rates, correlation, volatility, as well as other relevant economic measures. Substantially all of these assumptions are observable in the marketplace throughout the full term of the instrument, can be derived from observable data or are supported by observable levels at which transactions are executed in the marketplace.

Our level 3 fair value derivative instruments may consist of OTC power and natural gas forwards and options where pricing inputs are unobservable, as well as other complex and structured transactions primarily for the sale and purchase of power and natural gas to both wholesale counterparties and retail customers. Complex or structured transactions are tailored to our customers' needs and can introduce the need for internally-developed model inputs which might not be observable in or corroborated by the market. When such inputs have a significant effect on the measurement of fair value, the instrument is categorized in level 3. Our valuation models may incorporate historical correlation information and extrapolate available broker and other information to future periods.

Financial assets and liabilities are classified in their entirety based on the lowest level of input that is significant to the fair value measurement at period end. Our assessment of the significance of a particular input to the fair value measurement requires judgment and may affect our estimate of the fair value of our assets and liabilities and their placement within the fair value hierarchy levels. The following tables present our assets and liabilities that were accounted for at fair value on a recurring basis as of June 30, 2020 and December 31, 2019, by level within the fair value hierarchy:

	Assets and Liabilities with Recurring Fair Value Measures as of June 30, 2020			
	Level 1	Level 2	Level 3	Total
	(in millions)			
Assets:				
Cash equivalents(1)	$ 417	$ —	$ —	$ 417
Commodity instruments:				
Commodity exchange traded derivatives contracts	991	—	—	991
Commodity forward contracts(2)	—	424	364	788
Interest rate hedging instruments	—	—	—	—
Effect of netting and allocation of collateral(3)(4)	(991)	(299)	(40)	(1,330)
Total assets	$ 417	$ 125	$ 324	$ 866
Liabilities:				
Commodity instruments:				
Commodity exchange traded derivatives contracts	$ 1,001	$ —	$ —	$ 1,001
Commodity forward contracts(2)	—	421	118	539
Interest rate hedging instruments	—	161	—	161
Effect of netting and allocation of collateral(3)(4)	(1,001)	(296)	(40)	(1,337)
Total liabilities	$ —	$ 286	$ 78	$ 364

	Assets and Liabilities with Recurring Fair Value Measures as of December 31, 2019			
	Level 1	Level 2	Level 3	Total
	(in millions)			
Assets:				
Cash equivalents(1)	$ 784	$ —	$ —	$ 784
Commodity instruments:				
Commodity exchange traded derivatives contracts	872	—	—	872

Commodity forward contracts(2)	—	245	294	539
Interest rate hedging instruments	—	12	—	12
Effect of netting and allocation of collateral(3)(4)	(872)	(131)	(18)	(1,021)
Total assets	$ 784	$ 126	$ 276	$ 1,186
Liabilities:				
Commodity instruments:				
Commodity exchange traded derivatives contracts	$ 984	$ —	$ —	$ 984
Commodity forward contracts(2)	—	285	123	408
Interest rate hedging instruments	—	31	—	31
Effect of netting and allocation of collateral(3)(4)	(984)	(133)	(18)	(1,135)
Total liabilities	$ —	$ 183	$ 105	$ 288

(1) At June 30, 2020 and December 31, 2019, we had cash equivalents of $190 million and $573 million included in cash and cash equivalents and $227 million and $211 million included in restricted cash, respectively.

(2) Includes OTC swaps and options.

(3) We offset fair value amounts recognized for derivative instruments executed with the same counterparty under a master netting arrangement for financial statement presentation; therefore, amounts recognized for the right to reclaim, or the obligation to return, cash collateral are presented net with the corresponding derivative instrument fair values. See Note 6 for further discussion of our derivative instruments subject to master netting arrangements.

(4) Cash collateral posted with (received from) counterparties allocated to level 1, level 2 and level 3 derivative instruments totaled $10 million, $(3) million and nil, respectively, at June 30, 2020. Cash collateral posted with (received from) counterparties allocated to level 1, level 2 and level 3 derivative instruments totaled $112 million, $2 million and nil, respectively, at December 31, 2019.

At June 30, 2020 and December 31, 2019, the derivative instruments classified as level 3 primarily included commodity contracts. The fair value of the net derivative position classified as level 3 is predominantly driven by market commodity prices. The following table presents quantitative information for the unobservable inputs used in our most significant level 3 fair value measurements at June 30, 2020 and December 31, 2019:

Quantitative Information about Level 3 Fair Value Measurements

	June 30, 2020				
	Fair Value, Net Asset (Liability) (in millions)	Valuation Technique	Significant Unobservable Input	Range	Average(2)
Power Contracts(1)	$ 206	Discounted cash flow	Market price (per MWh)	$ 3.18 — $175.51 /MWh	$ 28.97
Power Congestion Products	$ 6	Discounted cash flow	Market price (per MWh)	$ (6.48) — $11.88 /MWh	$ 1.20

Natural Gas Contracts	$ 9	Discounted cash flow	Market price (per MMBtu)	$ 1.33 — $4.62	/MMBtu	$ 2.82

	December 31, 2019				
	Fair Value, Net Asset (Liability)	Valuation Technique	Significant Unobservable Input	Range	
	(in millions)				
Power Contracts[1]	$ 158	Discounted cash flow	Market price (per MWh)	$ 4.85 — $184.15	/MWh
Power Congestion Products	$ 17	Discounted cash flow	Market price (per MWh)	$(10.32) — $20	/MWh
Natural Gas Contracts	$ (20)	Discounted cash flow	Market price (per MMBtu)	$ 1.73 — $6.45	/MMBtu

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(1) Power contracts include power and heat rate instruments classified as level 3 in the fair value hierarchy.

(2) Amount represents the arithmetic average of the significant unobservable input based on the range disclosed.

The following table sets forth a reconciliation of changes in the fair value of our net derivative assets (liabilities) classified as level 3 in the fair value hierarchy for the periods indicated (in millions):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Balance, beginning of period	$ 249	$ 105	$ 171	$ (8)
Realized and mark-to-market gains (losses):				
Included in net income:				
Included in operating revenues[1]	37	152	106	197
Included in fuel and purchased energy expense[2]	3	1	(1)	2
Change in collateral	—	(1)	—	1
Purchases, Issuances and settlements:				
Purchases	1	1	1	3
Issuances	—	(1)	—	(1)
Settlements	(49)	(35)	(36)	28
Transfers in and/or out of level 3:				
Transfers into level 3[3]	10	6	11	7
Transfers out of level 3[4]	(5)	(1)	(6)	(2)
Balance, end of period	$ 246	$ 227	$ 246	$ 227

Change in unrealized gains (losses) included in net income relating to instruments still held at end of period	$ 40	$ 153	$ 105	$ 199

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(1) For power contracts and other power-related products, included on our Consolidated Condensed Statements of Operations.

(2) For natural gas and power contracts, swaps and options, included on our Consolidated Condensed Statements of Operations.

(3) We had $10 million and $6 million in gains transferred out of level 2 into level 3 for the three months ended June 30, 2020 and 2019, respectively, and $11 million and $7 million in gains transferred out of level 2 into level 3 for the six months ended June 30, 2020 and 2019, respectively, due to changes in market liquidity in various power markets.

(4) We had $5 million and $1 million in gains transferred out of level 3 into level 2 for the three months ended June 30, 2020 and 2019, respectively, and $6 million and $2 million in gains transferred out of level 3 into level 2 for the six months ended June 30, 2020 and 2019, respectively, due to changes in market liquidity in various power markets.

Derivative Instruments	6 Months Ended Jun. 30, 2020
Derivative Instruments and Hedging Activities Disclosure [Abstract]	
Derivative Instruments	

Derivative Instruments

Types of Derivative Instruments and Volumetric Information

Commodity Instruments — We are exposed to changes in prices for the purchase and sale of power, natural gas, fuel oil, environmental products and other energy commodities. We use derivatives, which include physical commodity contracts and financial commodity instruments such as OTC and exchange traded swaps, futures, options, forward agreements and instruments that settle on the power price to natural gas price relationships (Heat Rate swaps and options) or instruments that settle on power or natural gas price relationships between delivery points for the purchase and sale of power and natural gas to attempt to maximize the risk-adjusted returns by economically hedging a portion of the commodity price risk associated with our assets. By entering into these transactions, we are able to economically hedge a portion of our Spark Spread at estimated generation and prevailing price levels.

We also engage in limited trading activities related to our commodity derivative portfolio as authorized by our Board of Directors and monitored by our Chief Risk Officer and Risk Management Committee of senior management. These transactions are executed primarily for the purpose of providing improved price and price volatility discovery, greater market access, and profiting from our market knowledge, all of which benefit our asset hedging activities. Our trading results were not material for each of the three and six months ended June 30, 2020 and 2019.

Interest Rate Hedging Instruments — A portion of our debt is indexed to base rates, primarily LIBOR. We have historically used interest rate hedging instruments to adjust the mix between fixed and variable rate debt to hedge our interest rate risk for potential adverse changes in interest rates. As of June 30, 2020, the maximum length of time over which we were hedging using interest rate hedging instruments designated as cash flow hedges was 7 years.

As of June 30, 2020 and December 31, 2019, the net forward notional buy (sell) position of our outstanding commodity derivative instruments that did not qualify or were not designated under the normal purchase normal sale exemption and our interest rate hedging instruments were as follows:

	Notional Amounts		
Derivative Instruments	June 30, 2020	December 31, 2019	Unit of Measure
Power	(242)	(184)	Million MWh
Natural gas	1,165	1,063	Million MMBtu
Environmental credits	36	26	Million Tonnes
Interest rate hedging instruments(1)	$ 7.0	$ 4.8	Billion U.S. dollars

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(1) During the first half of 2020, we entered into interest rate hedging instruments to hedge approximately $2.4 billion of variable rate debt.

Certain of our derivative instruments contain credit risk-related contingent provisions that require us to maintain collateral balances consistent with our credit ratings. If our credit rating were to be downgraded, it could require us to post additional collateral or could potentially allow our counterparty to request immediate, full settlement on certain derivative instruments in liability positions. The aggregate fair value of our derivative liabilities with credit risk-related contingent provisions as of June 30, 2020, was $120 million for which we have posted collateral of $37 million by posting margin deposits, letters of credit or granting additional first priority liens on the assets currently subject to first priority liens under our First Lien Notes, First Lien Term Loans and Corporate Revolving Facility. However, if our credit rating were downgraded by one notch from its current level, we estimate that $6 million of additional collateral would be required and that no counterparty could request immediate, full settlement.

Accounting for Derivative Instruments

We recognize all derivative instruments that qualify for derivative accounting treatment as either assets or liabilities and measure those instruments at fair value unless they qualify for, and we elect, the normal purchase normal sale exemption. For transactions in which we elect the normal purchase normal sale exemption, gains and losses are not reflected on our Consolidated Condensed Statements of Operations until the period of delivery. Revenues and expenses derived from instruments that qualified for hedge accounting or represent an economic hedge are recorded in the same financial statement line item as the item being hedged. Hedge accounting requires us to formally document, designate and assess the effectiveness of transactions that receive hedge accounting. We present the cash flows from our derivatives in the same category as the item being hedged (or economically hedged) within operating activities on our Consolidated Condensed Statements of Cash Flows unless they contain an other-than-insignificant financing element in which case their cash flows are classified within financing activities.

Cash Flow Hedges — We currently apply hedge accounting to a portion of our interest rate hedging instruments with the change in fair value of all other hedging instruments recorded through earnings. We report the mark-to-market gain or loss on our interest rate hedging instruments designated and qualifying as a cash flow hedging instrument as a component of OCI and reclassify such gains and losses into earnings in the same period during which the hedged forecasted transaction affects earnings. If it is determined that the forecasted transaction is no longer probable of occurring, then hedge accounting will be discontinued prospectively and future changes in fair value will be recorded in earnings. If the hedging instrument is terminated or de-designated prior to the occurrence of the hedged forecasted transaction, the net accumulated gain or loss associated with the changes in fair value of the hedge instrument remains deferred in AOCI until such time as the forecasted transaction affects earnings or until it is determined that the forecasted transaction is probable of not occurring.

Derivatives Not Designated as Hedging Instruments — We enter into power, natural gas, interest rate, environmental product and fuel oil transactions that primarily act as economic hedges to our asset and interest rate portfolio, but either do not qualify as hedges under the hedge accounting guidelines or qualify under the hedge accounting guidelines and the hedge accounting designation has not been elected. Changes in fair value of commodity derivatives not designated as hedging instruments are recognized currently in earnings and are separately stated on our Consolidated Condensed Statements of Operations in mark-to-market gain/loss as a component of operating revenues (for physical and financial power and Heat Rate and commodity option activity) and fuel and purchased energy expense (for physical and financial natural gas, power, environmental product and fuel oil activity). Changes in fair value of interest rate derivatives not designated as hedging instruments are recognized currently in earnings as interest expense.

Derivatives Included on Our Consolidated Condensed Balance Sheets

We offset fair value amounts associated with our derivative instruments and related cash collateral and margin deposits on our Consolidated Condensed Balance Sheets that are executed with the same counterparty under master netting arrangements. Our netting arrangements include a right to set off or net together purchases and sales of similar products in the margining or settlement process. In some instances, we have also negotiated cross commodity netting rights which allow for the net presentation of activity with a given counterparty regardless of product purchased or sold. We also post and/or receive cash collateral in support of our derivative instruments which may also be subject to a master netting arrangement with the same counterparty.

The following tables present the fair values of our derivative instruments and our net exposure after offsetting amounts subject to a master netting arrangement with the same counterparty to our derivative instruments recorded on our Consolidated Condensed Balance Sheets by location and hedge type at June 30, 2020 and December 31, 2019 (in millions):

	June 30, 2020		
	Gross Amounts of Assets and (Liabilities)	Gross Amounts Offset on the Consolidated Condensed Balance Sheets	Net Amount Presented on the Consolidated Condensed Balance Sheets[1]
Derivative assets:			
Commodity exchange traded derivatives contracts	$ 758	$ (758)	$ —
Commodity forward contracts	440	(241)	199
Interest rate hedging instruments	—	—	—
Total current derivative assets[2]	$ 1,198	$ (999)	$ 199
Commodity exchange traded derivatives contracts	233	(233)	—
Commodity forward contracts	348	(98)	250
Interest rate hedging instruments	—	—	—
Total long-term derivative assets[2]	$ 581	$ (331)	$ 250
Total derivative assets	$ 1,779	$ (1,330)	$ 449
Derivative (liabilities):			
Commodity exchange traded derivatives contracts	$ (733)	$ 733	$ —
Commodity forward contracts	(357)	238	(119)
Interest rate hedging instruments	(49)	—	(49)
Total current derivative (liabilities)[2]	$ (1,139)	$ 971	$ (168)
Commodity exchange traded derivatives contracts	(268)	268	—
Commodity forward contracts	(182)	98	(84)
Interest rate hedging instruments	(112)	—	(112)
Total long-term derivative (liabilities)[2]	$ (562)	$ 366	$ (196)
Total derivative liabilities	$ (1,701)	$ 1,337	$ (364)
Net derivative assets (liabilities)	$ 78	$ 7	$ 85

	December 31, 2019		
	Gross Amounts of Assets and (Liabilities)	Gross Amounts Offset on the Consolidated Condensed Balance Sheets	Net Amount Presented on the Consolidated Condensed Balance Sheets[1]
Derivative assets:			
Commodity exchange traded derivatives contracts	$ 727	$ (727)	$ —
Commodity forward contracts	262	(108)	154
Interest rate hedging instruments	2	—	2
Total current derivative assets[3]	$ 991	$ (835)	$ 156
Commodity exchange traded derivatives contracts	145	(145)	—

Commodity forward contracts	277	(41)	236
Interest rate hedging instruments	10	—	10
Total long-term derivative assets(3)	$ 432	$ (186)	$ 246
Total derivative assets	$ 1,423	$ (1,021)	$ 402
Derivative (liabilities):			
Commodity exchange traded derivatives contracts	$ (830)	$ 830	$ —
Commodity forward contracts	(321)	109	(212)
Interest rate hedging instruments	(13)	—	(13)
Total current derivative (liabilities)(3)	$ (1,164)	$ 939	$ (225)
Commodity exchange traded derivatives contracts	(154)	154	—
Commodity forward contracts	(87)	42	(45)
Interest rate hedging instruments	(18)	—	(18)
Total long-term derivative (liabilities)(3)	$ (259)	$ 196	$ (63)
Total derivative liabilities	$ (1,423)	$ 1,135	$ (288)
Net derivative assets (liabilities)	$ —	$ 114	$ 114

(1) At June 30, 2020 and December 31, 2019, we had $260 million and $191 million, respectively, of collateral under master netting arrangements that were not offset against our derivative instruments on the Consolidated Condensed Balance Sheets primarily related to initial margin requirements.

(2) At June 30, 2020, current and long-term derivative assets are shown net of collateral of $(28) million and $(9) million, respectively, and current and long-term derivative liabilities are shown net of collateral of $1 million and $43 million, respectively.

(3) At December 31, 2019, current and long-term derivative assets are shown net of collateral of $(4) million and $(4) million, respectively, and current and long-term derivative liabilities are shown net of collateral of $108 million and $14 million, respectively.

	June 30, 2020		December 31, 2019	
	Fair Value of Derivative Assets	Fair Value of Derivative Liabilities	Fair Value of Derivative Assets	Fair Value of Derivative Liabilities
Derivatives designated as cash flow hedging instruments:				
Interest rate hedging instruments	$ —	$ 119	$ 12	$ 29
Total derivatives designated as cash flow hedging instruments	$ —	$ 119	$ 12	$ 29
Derivatives not designated as hedging instruments:				
Commodity instruments	$ 449	$ 203	$ 390	$ 257
Interest rate hedging instruments	—	42	—	2
Total derivatives not designated as hedging instruments	$ 449	$ 245	$ 390	$ 259
Total derivatives	$ 449	$ 364	$ 402	$ 288

Derivatives Included on Our Consolidated Condensed Statements of Operations

Changes in the fair values of our derivative instruments are reflected in cash for option premiums paid or collected, in OCI, net of tax, for derivative instruments which qualify for and we have elected cash flow hedge accounting treatment, or on our Consolidated Condensed Statements of Operations as a component of mark-to-market activity within our earnings.

The following tables detail the components of our total activity for both the net realized gain (loss) and the net mark-to-market gain (loss) recognized from our derivative instruments in earnings and where these components were recorded on our Consolidated Condensed Statements of Operations for the periods indicated (in millions):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Realized gain (loss)(1)(2)				
Commodity derivative instruments	$ 36	$ 58	$ 33	$ 169
Interest rate hedging instruments(3)	$ (18)	$ —	$ (18)	$ —
Total realized gain (loss)	$ 18	$ 58	$ 15	$ 169
Mark-to-market gain (loss)(4)				
Commodity derivative instruments	$ 35	$ 187	$ 236	$ 233
Interest rate hedging instruments	(14)	(1)	(38)	(2)
Total mark-to-market gain (loss)	$ 21	$ 186	$ 198	$ 231
Total activity, net	$ 39	$ 244	$ 213	$ 400

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(1) Does not include the realized value associated with derivative instruments that settle through physical delivery.

(2) Includes amortization of acquisition date fair value of financial derivative activity related to the acquisition of Champion Energy and Calpine Solutions.

(3) Includes costs associated with the termination of de-designated interest rate hedging instruments recorded to interest expense related to our Steamboat project debt that was repaid in June 2020.

(4) In addition to changes in market value on derivatives not designated as hedges, changes in mark-to-market gain (loss) also includes adjustments to reflect changes in credit default risk exposure.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Realized and mark-to-market gain (loss)(1)				
Derivatives contracts included in operating revenues(2)(3)	$ 34	$ 541	$ 541	$ 578
Derivatives contracts included in fuel and purchased energy expense(2)(3)	37	(296)	(272)	(176)
Interest rate hedging instruments included in interest expense(4)	(32)	(1)	(56)	(2)
Total activity, net	$ 39	$ 244	$ 213	$ 400

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(1) In addition to changes in market value on derivatives not designated as hedges, changes in mark-to-market gain (loss) also includes adjustments to reflect changes in credit default risk exposure.

(2) Does not include the realized value associated with derivative instruments that settle through physical delivery.

(3) Includes amortization of acquisition date fair value of financial derivative activity related to the acquisition of Champion Energy and Calpine Solutions.

(4) Includes costs associated with the termination of de-designated interest rate hedging instruments recorded to interest expense related to our Steamboat project debt that was repaid in June 2020.

Derivatives Included in OCI and AOCI

The following table details the effect of our net derivative instruments that qualified for hedge accounting treatment and are included in OCI and AOCI for the periods indicated (in millions):

	Three Months Ended June 30, Gain (Loss) Recognized in OCI		Three Months Ended June 30, Gain (Loss) Reclassified from AOCI into Income(2)(3)		
	2020	2019	2020	2019	Affected Line Item on the Consolidated Condensed Statements of Operations
Interest rate hedging instruments(1)	$ 3	$ (32)	$ (25)	$ 3	Interest expense

	Six Months Ended June 30, Gain (Loss) Recognized in OCI		Six Months Ended June 30, Gain (Loss) Reclassified from AOCI into Income(2)(3)		
	2020	2019	2020	2019	Affected Line Item on the Consolidated Condensed Statements of Operations
Interest rate hedging instruments(1)	$ (101)	$ (57)	$ (31)	$ 5	Interest expense

(1) We recorded an income tax expense of $1 million and an income tax (benefit) of $(1) million for the three months ended June 30, 2020 and 2019, respectively, and income tax (benefit) of $(2) million and $(1) million for the six months ended June 30, 2020 and 2019, respectively, in AOCI related to our cash flow hedging activities.

(2) Cumulative cash flow hedge losses attributable to Calpine, net of tax, remaining in AOCI were $174 million and $72 million at June 30, 2020 and December 31, 2019, respectively. Cumulative cash flow hedge losses attributable to the noncontrolling interest, net of tax, remaining in AOCI were nil and $3 million at June 30, 2020 and December 31, 2019, respectively.

(3) Includes losses of $16 million and nil that were reclassified from AOCI to interest expense for the three months ended June 30, 2020 and 2019, respectively, and losses of $16 million and $1 million that were reclassified from AOCI to interest expense for the six months ended June 30, 2020 and 2019, respectively,where the hedged transactions became probable of not occurring.

We estimate that pre-tax net losses of $57 million would be reclassified from AOCI into interest expense during the next 12 months as the hedged transactions settle; however, the actual amounts that will be reclassified will likely vary based on changes in interest rates. Therefore, we are unable to predict what the actual reclassification from AOCI into earnings (positive or negative) will be for the next 12 months.

Use of Collateral	6 Months Ended Jun. 30, 2020

Use of Collateral [Abstract]

Use of Collateral

Use of Collateral

We use margin deposits, prepayments and letters of credit as credit support with and from our counterparties for commodity procurement and risk management activities. In addition, we have granted additional first priority liens on the assets currently subject to first priority liens under various debt agreements as collateral under certain of our power and natural gas agreements and certain of our interest rate hedging instruments in order to reduce the cash collateral and letters of credit that we would otherwise be required to provide to the counterparties under such agreements. The counterparties under such agreements share the benefits of the collateral subject to such first priority liens pro rata with the lenders under our various debt agreements.

The table below summarizes the balances outstanding under margin deposits, natural gas and power prepayments, and exposure under letters of credit and first priority liens for commodity procurement and risk management activities as of June 30, 2020 and December 31, 2019 (in millions):

	June 30, 2020	December 31, 2019
Margin deposits[1]	$ 290	$ 432
Natural gas and power prepayments	31	29
Total margin deposits and natural gas and power prepayments with our counterparties[2]	$ 321	$ 461
Letters of credit issued	$ 877	$ 906
First priority liens under power and natural gas agreements	20	42
First priority liens under interest rate hedging instruments	168	31
Total letters of credit and first priority liens with our counterparties	$ 1,065	$ 979
Margin deposits posted with us by our counterparties[1][3]	$ 23	$ 127
Letters of credit posted with us by our counterparties	212	25
Total margin deposits and letters of credit posted with us by our counterparties	$ 235	$ 152

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(1) We offset fair value amounts recognized for derivative instruments executed with the same counterparty under a master netting arrangement for financial statement presentation; therefore, amounts recognized for the right to reclaim, or the obligation to return, cash collateral are presented net with the corresponding derivative instrument fair values. See Note 6 for further discussion of our derivative instruments subject to master netting arrangements.

(2) At June 30, 2020 and December 31, 2019, $19 million and $117 million, respectively, were included in current and long-term derivative assets and liabilities, $294 million and $336 million, respectively, were included in margin deposits and other prepaid expense and $8 million and $8 million, respectively, were included in other assets on our Consolidated Condensed Balance Sheets.

(3) At June 30, 2020 and December 31, 2019, $12 million and $3 million, respectively, were included in current and long-term derivative assets and liabilities, $11 million and $93 million, respectively, were included in other current liabilities and nil and $31 million,

respectively, were included in other long-term liabilities on our Consolidated Condensed Balance Sheets.

Future collateral requirements for cash, first priority liens and letters of credit may increase or decrease based on the extent of our involvement in hedging and optimization contracts, movements in commodity prices, and also based on our credit ratings and general perception of creditworthiness in our market.

Income Taxes

Income Tax Disclosure [Abstract]

Income Taxes

6 Months Ended Jun. 30, 2020

Income Taxes

Income Tax Expense (Benefit)

The table below shows our consolidated income tax expense (benefit) and our effective tax rates for the periods indicated (in millions):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Income tax expense (benefit)	$ (31)	$ 9	$ 15	$ 19
Effective tax rate	(23)%	3%	5%	4%

Our income tax rates do not bear a customary relationship to statutory income tax rates primarily as a result of the effect of our NOLs and changes in unrecognized tax benefits and valuation allowances. For the three and six months ended June 30, 2020 and 2019, the income tax expense recognized resulted from timing differences between the recognition of federal income tax expense and corresponding changes in NOLs and the valuation allowance.

Income Tax Audits — We remain subject to periodic audits and reviews by taxing authorities; however, we do not expect these audits will have a material effect on our tax provision. Any NOLs we claim in future years to reduce taxable income could be subject to IRS examination regardless of when the NOLs were generated. Any adjustment of state or federal returns could result in a reduction of deferred tax assets rather than a cash payment of income taxes in tax jurisdictions where we have NOLs. We are currently under various state income tax audits for various periods.

Valuation Allowance — U.S. GAAP requires that we consider all available evidence, both positive and negative, future earnings and tax planning strategies to determine whether, based on the weight of that evidence, a valuation allowance is needed to reduce the value of deferred tax assets. We have federal NOLs available to offset future income tax obligations recognized as deferred tax assets in the amount of $1.5 billion at June 30, 2020. During the second quarter of 2020, we recorded a partial valuation allowance release to the federal valuation allowance in the amount of $77 million. We recognize a valuation allowance against a subset of these NOLs given uncertainty in our ability to utilize all such NOLs. Future realization of the tax benefit of an existing deductible temporary difference or carryforward ultimately depends on the existence of sufficient taxable income of the appropriate character within the carryback or carryforward periods available under the tax law. For purposes of this evaluation, we consider both the existence of future taxable earnings as well as available tax planning strategies. To the extent that future expected sources of earnings materially changes, this could result in the reduction or increase in our valuation allowance.

Commitments and Contingencies	6 Months Ended Jun. 30, 2020
Commitments and Contingencies Disclosure [Abstract]	
Commitments and Contingencies	**Commitments and Contingencies** ***Litigation*** We are party to various litigation matters, including regulatory and administrative proceedings arising out of the normal course of business. At the present time, we do not expect that the outcome of any of these proceedings, individually or in the aggregate, will have a material adverse effect on our financial condition, results of operations or cash flows. On a quarterly basis, we review our litigation activities and determine if an unfavorable outcome to us is considered “remote,” “reasonably possible” or “probable” as defined by U.S. GAAP. Where we determine an unfavorable outcome is probable and is reasonably estimable, we accrue for potential litigation losses. The liability we may ultimately incur with respect to such litigation matters, in the event of a negative outcome, may be in excess of amounts currently accrued, if any; however, we do not expect that the reasonably possible outcome of these litigation matters would, individually or in the aggregate, have a material adverse effect on our financial condition, results of operations or cash flows. Where we determine an unfavorable outcome is not probable or reasonably estimable, we do not accrue for any potential litigation loss. The ultimate outcome of these litigation matters cannot presently be determined, nor can the liability that could potentially result from a negative outcome be reasonably estimated. As a result, we give no assurance that such litigation matters would, individually or in the aggregate, not have a material adverse effect on our financial condition, results of operations or cash flows. ***Environmental Matters*** We are subject to complex and stringent environmental laws and regulations related to the operation of our power plants. On occasion, we may incur environmental fees, penalties and fines associated with the operation of our power plants. At the present time, we do not have environmental violations or other matters that would have a material effect on our financial condition, results of operations or cash flows or that would significantly change our operations. ***Guarantees and Indemnifications*** Our potential exposure under guarantee and indemnification obligations can range from a specified amount to an unlimited dollar amount, depending on the nature of the claim and the particular transaction. Our total maximum exposure under our guarantee and indemnification obligations is not estimable due to uncertainty as to whether claims will be made or how any potential claim will be resolved. As of June 30, 2020, there are no material outstanding claims related to our guarantee and indemnification obligations and we do not anticipate that we will be required to make any material payments under our guarantee and indemnification obligations. There have been no material changes to our guarantees and indemnifications from those disclosed in Note 16 of our 2019 Form 10-K.

Related Party Transactions	6 Months Ended Jun. 30, 2020
Related Party Transactions [Abstract]	
Related Party Transactions	**Related Party Transactions** We have entered into various agreements with related parties associated with the operation of our business. A description of these related party transactions is provided below: *Calpine Receivables* — Under the Accounts Receivable Sales Program, at June 30, 2020 and December 31, 2019, we had $195 million and $222 million, respectively, in trade accounts receivable outstanding that were sold to Calpine Receivables and $41 million and $38 million, respectively, in notes receivable from Calpine Receivables which were recorded on our Consolidated Condensed Balance Sheets. During the six months ended June 30, 2020 and 2019, we sold an aggregate of $1.0 billion and $1.1 billion, respectively, in trade accounts receivable and recorded $1.0 billion and $1.1 billion, respectively, in proceeds. For a further discussion of the Accounts Receivable Sales Program and Calpine Receivables, see Notes 7 and 17 in our 2019 Form 10-K. *Lyondell* — We have a ground lease agreement with Houston Refining LP ("Houston Refining"), a subsidiary of Lyondell, for our Channel Energy Center site from which we sell power, capacity and steam to Houston Refining under a PPA. We purchase refinery gas and raw water from Houston Refining under a facilities services agreement. One of the entities which has a material ownership interest in Calpine also has an ownership interest in Lyondell whereby they may significantly influence the management and operating policies of Lyondell. We recorded $14 million and $17 million in operating revenues during the three months ended June 30, 2020 and 2019, respectively, and $27 million and $37 million in operating revenues during the six months ended June 30, 2020 and 2019, respectively. We recorded $3 million and $4 million in operating expenses during the three months ended June 30, 2020 and 2019, respectively, and $6 million and $7 million in operating expenses during the six months ended June 30, 2020 and 2019, respectively, associated with the Lyondell contract. At June 30, 2020 and December 31, 2019, the related party receivable and payable associated with the Lyondell contract were immaterial. *Other* — We have identified other related party contracts for the sale of power, capacity, steam and RECs which are entered into in the ordinary course of our business. Most of these contracts relate to the sale of commodities and capacity for varying tenors. We have also entered into a long-term land lease agreement with a related party. As of June 30, 2020 and December 31, 2019, the related party revenues, expenses, receivables and payables associated with these transactions were immaterial.

Segment Information

Segment Reporting [Abstract]

Segment Information

6 Months Ended Jun. 30, 2020

Segment Information

We assess our business on a regional basis due to the effect on our financial performance of the differing characteristics of these regions, particularly with respect to competition, regulation and other factors affecting supply and demand. At June 30, 2020, our geographic reportable segments for our wholesale business are West (including geothermal), Texas and East (including Canada) and we have a separate reportable segment for our retail business. We continue to evaluate the optimal manner in which we assess our performance including our segments and future changes may result in changes to the composition of our geographic segments.

Commodity Margin is a key operational measure of profit reviewed by our chief operating decision maker to assess the performance of our segments. The tables below show financial data for our segments (including a reconciliation of Commodity Margin to income (loss) from operations by segment) for the periods indicated (in millions):

	Three Months Ended June 30, 2020					
	Wholesale				Consolidation	
	West	Texas	East	Retail	Elimination	Total
Total operating revenues[1]	$ 470	$ 620	$ 244	$ 720	$ (310)	$ 1,744
Commodity Margin	$ 269	$ 172	$ 193	$ 89	$ —	$ 723
Add: Mark-to-market commodity activity, net and other[2]	67	(17)	(38)	56	(9)	59
Less:						
Operating and maintenance expense	96	73	71	35	(9)	266
Depreciation and amortization expense	56	50	45	12	—	163
General and other administrative expense	6	13	8	4	—	31
Other operating expenses	7	1	6	—	—	14
(Income) from unconsolidated subsidiaries	—	—	(4)	—	—	(4)
Income from operations	171	18	29	94	—	312
Interest expense						167
Gain (loss) on extinguishment of debt and other (income) expense, net						13
Income before income taxes						$ 132

	Three Months Ended June 30, 2019					
	Wholesale				Consolidation	

	West	Texas	East	Retail	Elimination	Total
Total operating revenues[1]	$ 649	$ 899	$ 646	$ 1,082	$ (677)	$ 2,599
Commodity Margin	$ 251	$ 173	$ 235	$ 93	$ —	$ 752
Add: Mark-to-market commodity activity, net and other[2]	58	240	94	(182)	(10)	200
Less:						
Operating and maintenance expense	84	66	72	33	(10)	245
Depreciation and amortization expense	60	54	48	13	—	175
General and other administrative expense	5	15	10	4	—	34
Other operating expenses	7	1	11	—	—	19
Impairment losses	—	—	40	—	—	40
(Income) from unconsolidated subsidiaries	—	—	(6)	1	—	(5)
Income (loss) from operations	153	277	154	(140)	—	444
Interest expense						157
Gain (loss) on extinguishment of debt and other (income) expense, net						8
Income before income taxes						$ 279

	Six Months Ended June 30, 2020					
	Wholesale				Consolidation	
	West	Texas	East	Retail	Elimination	Total
Total operating revenues[3]	$ 1,175	$ 1,270	$ 786	$ 1,628	$ (823)	$ 4,036
Commodity Margin	$ 503	$ 285	$ 343	$ 180	$ —	$ 1,311
Add: Mark-to-market commodity activity, net and other[4]	121	84	44	40	(17)	272
Less:						
Operating and maintenance expense	182	139	134	68	(17)	506
Depreciation and amortization expense	112	100	91	24	—	327
General and other administrative expense	14	24	16	8	—	62
Other operating expenses	15	3	13	—	—	31
(Income) from unconsolidated subsidiaries	—	—	(4)	—	—	(4)

Income from operations	301	103	137	120	—	661
Interest expense						336
Gain (loss) on extinguishment of debt and other (income) expense, net						17
Income before income taxes						$ 308

	Six Months Ended June 30, 2019					
	Wholesale				Consolidation	
	West	Texas	East	Retail	Elimination	Total
Total operating revenues(3)	$ 1,331	$ 1,642	$ 1,335	$ 2,080	$ (1,190)	$ 5,198
Commodity Margin	$ 515	$ 335	$ 500	$ 181	$ —	$ 1,531
Add: Mark-to-market commodity activity, net and other(4)	114	284	107	(235)	(18)	252
Less:						
Operating and maintenance expense	165	131	139	67	(18)	484
Depreciation and amortization expense	133	99	91	26	—	349
General and other administrative expense	12	27	19	8	—	66
Other operating expenses	16	3	19	—	—	38
Impairment losses	—	—	55	—	—	55
(Income) from unconsolidated subsidiaries	—	—	(12)	1	—	(11)
Income (loss) from operations	303	359	296	(156)	—	802
Interest expense						306
Gain (loss) on extinguishment of debt and other (income) expense, net						27
Income before income taxes						$ 469

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(1) Includes intersegment revenues of $70 million and $100 million in the West, $214 million and $348 million in Texas, $24 million and $228 million in the East and $2 million and $1 million in Retail for the three months ended June 30, 2020 and 2019, respectively.

(2) Includes $(22) million and $(19) million of lease levelization and $9 million and $18 million of amortization expense for the three months ended June 30, 2020 and 2019, respectively.

(3) Includes intersegment revenues of $189 million and $262 million in the West, $432 million and $559 million in Texas, $199 million and $365 million in the East and $3 million and $4 million in Retail for the six months ended June 30, 2020 and 2019, respectively.

(4) Includes $(40) million and $(35) million of lease levelization and $25 million and $39 million of amortization expense for the six months ended June 30, 2020 and 2019, respectively.

Basis of Presentation and Summary of Significant Accounting Policies (Policies)	6 Months Ended Jun. 30, 2020
Accounting Policies [Abstract]	
Basis of interim presentation	*Basis of Interim Presentation* — The accompanying unaudited, interim Consolidated Condensed Financial Statements of Calpine Corporation, a Delaware corporation, and consolidated subsidiaries have been prepared pursuant to the rules and regulations of the SEC. In the opinion of management, the Consolidated Condensed Financial Statements include the normal, recurring adjustments necessary for a fair statement of the information required to be set forth therein. Certain information and note disclosures, normally included in financial statements prepared in accordance with U.S. GAAP, have been condensed or omitted from these statements pursuant to such rules and regulations and, accordingly, these financial statements should be read in conjunction with our audited Consolidated Financial Statements for the year ended December 31, 2019, included in our 2019 Form 10-K. The results for interim periods are not indicative of the results for the entire year primarily due to acquisitions and disposals of assets, seasonal fluctuations in our revenues and expenses, timing of major maintenance expense, variations resulting from the application of the method to calculate the provision for income tax for interim periods, volatility of commodity prices and mark-to-market gains and losses from commodity and interest rate derivative contracts.
Use of estimates in preparation of financial statements	*Use of Estimates in Preparation of Financial Statements* — The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues, expenses and related disclosures included in our Consolidated Condensed Financial Statements. Actual results could differ from those estimates.
Cash and cash equivalents	*Cash and Cash Equivalents* — We consider all highly liquid investments with an original maturity of three months or less to be cash equivalents. We have cash and cash equivalents held in non-corporate accounts relating to certain project finance facilities and lease agreements that require us to establish and maintain segregated cash accounts. These accounts have been pledged as security in favor of the lenders under such project finance facilities, and the use of certain cash balances on deposit in such accounts is limited, at least temporarily, to the operations of the respective projects.
Restricted cash	*Restricted Cash* — Certain of our debt agreements, lease agreements or other operating agreements require us to establish and maintain segregated cash accounts, the use of which is restricted, making these cash funds unavailable for general use. These amounts are held by depository banks in order to comply with the contractual provisions requiring reserves for payments such as for debt service, rent and major maintenance or with applicable regulatory requirements. Funds that can be used to satisfy obligations due during the next 12 months are classified as current restricted cash, with the remainder classified as non-current restricted cash. Restricted cash is generally invested in accounts earning market rates; therefore, the carrying value approximates fair value. Such cash is excluded from cash and cash equivalents on our Consolidated Condensed Balance Sheets.
Accounts Receivable	*Accounts Receivable* — Accounts receivable represents amounts due from customers. Accounts receivable are recorded at invoiced amounts, net of reserves and allowances, and do not bear interest as the balances are short term in nature. On January 1, 2020, we adopted the provisions of Accounting Standards Update 2016-13, “Measurement of Credit Losses on Financial Instruments” (“ASU 2016-13”). We use a variety of information to determine our allowance for expected credit losses based on multiple factors including the length of time receivables are past due, current and future economic trends and conditions affecting our customer base, significant one-time events, historical write-off experience and forward-looking information such as internally developed forecasts. See below for further information related to our adoption of ASU 2016-13.

New accounting pronouncements, policy

New Accounting Standards and Disclosure Requirements

Financial Instruments–Credit Losses — In June 2016, the FASB issued ASU 2016-13. The standard provides a new model for recognizing credit losses on financial assets carried at amortized cost using an estimate of expected credit losses, instead of the "incurred loss" methodology previously required for recognizing credit losses that delayed recognition until it was probable that a loss was incurred. The estimate of expected credit losses is to be based on consideration of past events, current conditions and reasonable and supportable forecasts of future conditions. The scope of the standard is limited to our trade account receivable balances and the standard is effective for fiscal years beginning after December 15, 2019. We adopted ASU 2016-13 on January 1, 2020 with no cumulative effect adjustment recognized upon adoption. The adoption of ASU 2016-13 did not have a material effect on our financial condition, results of operations or cash flows.

Fair Value Measurements — In August 2018, the FASB issued Accounting Standards Update 2018-13, “Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement.” The standard removes, modifies and adds disclosures about fair value measurements and is effective for fiscal years beginning after December 15, 2019. We adopted Accounting Standards Update 2018-13 on January 1, 2020, which did not have a material effect on our financial condition, results of operations or cash flows.

Income Taxes — In December 2019, the FASB issued Accounting Standards Update 2019-12, “Simplifying the Accounting for Income Taxes.” The standard is intended to simplify the accounting for income taxes by removing certain exceptions and improve consistent application by clarifying guidance related to the accounting for income taxes. The standard is effective for fiscal years beginning after December 15, 2020 with early adoption permitted including in interim periods. We adopted Accounting Standards Update 2019-12 on January 1, 2020, which did not have a material effect on our financial condition, results of operations or cash flows.

Unconsolidated VIEs and Investments in Unconsolidated Subsidiaries

Unconsolidated VIEs and Investments in Unconsolidated Subsidiaries

We have a 50% partnership interest in Greenfield LP which is also a VIE; however, we do not have the power to direct the most significant activities of this entity and therefore do not consolidate it. Greenfield LP is a limited partnership between certain subsidiaries of ours and of Mitsui & Co., Ltd., which operates the Greenfield Energy Centre, a 1,038 MW natural gas-fired, combined-cycle power plant located in Ontario, Canada.

Calpine Receivables is a VIE and a bankruptcy remote entity created for the special purpose of purchasing trade accounts receivable from Calpine Solutions under the Accounts Receivable Sales Program. We have determined that we do not have the power to direct the activities of the VIE that most significantly affect the VIE’s economic performance nor the obligation to absorb losses or receive benefits from the VIE. Accordingly, we have determined that we are not the primary beneficiary of Calpine Receivables because we do not have the power to affect its financial performance as the unaffiliated financial institutions that purchase the receivables from Calpine Receivables control the selection criteria of the receivables sold and appoint the servicer of the receivables which controls management of default. Thus, we do not consolidate Calpine Receivables in our Consolidated Condensed Financial Statements and use the equity method of accounting to record our net interest in Calpine Receivables.

We account for these entities under the equity method of accounting and include our net equity interest in investments in unconsolidated subsidiaries on our Consolidated Condensed Balance Sheets.

We consolidate all of our VIEs where we have determined that we are the primary beneficiary.

Fair value of financial instruments

Our First Lien Term Loans, Senior Unsecured Notes, First Lien Notes and CCFC Term Loan are categorized as level 2 within the fair value hierarchy. Our GPC Term Loan, revolving facilities and project financing, notes payable and other debt instruments are categorized as level 3 within the fair value hierarchy. We do not have any debt instruments with fair value measurements categorized as level 1 within the fair value hierarchy.

Cash Equivalents — Highly liquid investments which meet the definition of cash equivalents, primarily investments in money market accounts and other interest-bearing accounts, are included in both our cash and cash equivalents and our restricted cash on our Consolidated Condensed Balance Sheets. Certain of our money market accounts invest in U.S. Treasury securities or other obligations issued or guaranteed by the U.S. Government, its agencies or instrumentalities. We do not have any cash equivalents invested in institutional prime money market funds which require use of a floating net asset value and are subject to liquidity fees and redemption restrictions. Certain of our cash equivalents are classified within level 1 of the fair value hierarchy.

Derivatives — The primary factors affecting the fair value of our derivative instruments at any point in time are the volume of open derivative positions (MMBtu, MWh and $ notional amounts); changing commodity market prices, primarily for power and natural gas; our credit standing and that of our counterparties and customers for energy commodity derivatives; and prevailing interest rates for our interest rate hedging instruments. Prices for power and natural gas and interest rates are volatile, which can result in material changes in the fair value measurements reported in our financial statements in the future.

We utilize market data, such as pricing services and broker quotes, and assumptions that we believe market participants would use in pricing our assets or liabilities including assumptions about the risks inherent to the inputs in the valuation technique. These inputs can be readily observable, market corroborated or generally unobservable. The market data obtained from broker pricing services is evaluated to determine the nature of the quotes obtained and, where accepted as a reliable quote, used to validate our assessment of fair value. We use other qualitative assessments to determine the level of activity in any given market. We primarily apply the market approach and income approach for recurring fair value measurements and utilize what we believe to be the best available information. We utilize valuation techniques that seek to maximize the use of observable inputs and minimize the use of unobservable inputs. We classify fair value balances based on the observability of those inputs.

The fair value of our derivatives includes consideration of our credit standing, the credit standing of our counterparties and customers and the effect of credit enhancements, if any. We have also recorded credit reserves in the determination of fair value based on our expectation of how market participants would determine fair value. Such valuation adjustments are generally based on market evidence, if available, or our best estimate.

Our level 1 fair value derivative instruments primarily consist of power and natural gas swaps, futures and options traded on the NYMEX or Intercontinental Exchange.

Our level 2 fair value derivative instruments primarily consist of interest rate hedging instruments and OTC power and natural gas forwards for which market-based pricing inputs in the principal or most advantageous market are representative of executable prices for market participants. These inputs are observable at commonly quoted intervals for substantially the full term of the instruments. In certain instances, our level 2 derivative instruments may utilize models to measure fair value. These models are industry-standard models, including the Black-Scholes option-pricing model, that incorporate various assumptions, including quoted interest rates, correlation, volatility, as well as other relevant economic measures. Substantially all of these assumptions are observable in the marketplace throughout the full term of the instrument, can be derived from observable data or are supported by observable levels at which transactions are executed in the marketplace.

Our level 3 fair value derivative instruments may consist of OTC power and natural gas forwards and options where pricing inputs are unobservable, as well as other complex and structured transactions primarily for the sale and purchase of power and natural gas to both wholesale counterparties and retail customers. Complex or structured transactions are tailored to our customers' needs and can introduce the need for internally-developed model inputs which might not be observable in or corroborated by the market. When such inputs have a significant effect on the measurement of fair value, the instrument is categorized in level 3. Our valuation models may incorporate historical correlation information and extrapolate available broker and other information to future periods.

Derivative Instruments

We recognize all derivative instruments that qualify for derivative accounting treatment as either assets or liabilities and measure those instruments at fair value unless they qualify for, and we elect, the normal purchase normal sale exemption. For transactions in which we elect the normal purchase normal sale exemption, gains and losses are not reflected on our Consolidated Condensed Statements of Operations until the period of delivery. Revenues and expenses derived from instruments that qualified for hedge accounting or represent an economic hedge are recorded in the same financial statement line item as the item being hedged. Hedge accounting requires us to formally document, designate and assess the effectiveness of transactions that receive hedge accounting. We present the cash flows from our derivatives in the same category as the item being hedged (or economically hedged) within operating activities on our Consolidated Condensed Statements of Cash Flows unless they contain an other-than-insignificant financing element in which case their cash flows are classified within financing activities.

Cash Flow Hedges — We currently apply hedge accounting to a portion of our interest rate hedging instruments with the change in fair value of all other hedging instruments recorded through earnings. We report the mark-to-market gain or loss on our interest rate hedging instruments designated and qualifying as a cash flow hedging instrument as a component of OCI and reclassify such gains and losses into earnings in the same period during which the hedged forecasted transaction affects earnings. If it is determined that the forecasted transaction is no longer probable of occurring, then hedge accounting will be discontinued prospectively and future changes in fair value will be recorded in earnings. If the hedging instrument is terminated or de-designated prior to the occurrence of the hedged forecasted transaction, the net accumulated gain or loss associated with the changes in fair value of the hedge instrument remains deferred in AOCI until such time as the forecasted transaction affects earnings or until it is determined that the forecasted transaction is probable of not occurring.

Derivatives Not Designated as Hedging Instruments — We enter into power, natural gas, interest rate, environmental product and fuel oil transactions that primarily act as economic hedges to our asset and interest rate portfolio, but either do not qualify as hedges under the hedge accounting guidelines or qualify under the hedge accounting guidelines and the hedge accounting designation has not been elected. Changes in fair value of commodity derivatives not designated as hedging instruments are recognized currently in earnings and are separately stated on our Consolidated Condensed Statements of Operations in mark-to-market gain/loss as a component of operating revenues (for physical and financial power and Heat Rate and commodity option activity) and fuel and purchased energy expense (for physical and financial natural gas, power, environmental product and fuel oil activity). Changes in fair value of interest rate derivatives not designated as hedging instruments are recognized currently in earnings as interest expense.

We offset fair value amounts associated with our derivative instruments and related cash collateral and margin deposits on our Consolidated Condensed Balance Sheets that are executed with the same counterparty under master netting arrangements. Our netting arrangements include a right to set off or net together purchases and sales of similar products in the margining or settlement process. In some instances, we have also negotiated cross commodity netting rights which allow for the net presentation of activity with a given counterparty regardless of product purchased or sold. We also post and/or receive cash collateral in support of our derivative instruments which may also be subject to a master netting arrangement with the same counterparty.

Commitments and Contingencies

On a quarterly basis, we review our litigation activities and determine if an unfavorable outcome to us is considered “remote,” “reasonably possible” or “probable” as defined by U.S. GAAP. Where we determine an unfavorable outcome is probable and is reasonably estimable, we accrue for potential litigation losses. The liability we may ultimately incur with respect to such litigation matters, in the event of a negative outcome, may be in excess of amounts currently accrued, if any; however, we do not expect that the reasonably possible outcome of these litigation matters would, individually or in the aggregate, have a material adverse effect on our financial condition, results of operations or cash flows. Where we determine an unfavorable outcome is not probable or reasonably estimable, we do not accrue for any potential litigation loss. The ultimate outcome of these litigation matters cannot presently be determined, nor can the liability that could potentially result from a negative outcome be reasonably estimated. As a result, we give no assurance that such litigation matters would, individually or in the aggregate, not have a material adverse effect on our financial condition, results of operations or cash flows.

Basis of Presentation and Summary of Significant Accounting Policies (Tables)	6 Months Ended Jun. 30, 2020
Accounting Policies [Abstract]	
Schedule of components of restricted cash	The table below represents the components of our restricted cash as of June 30, 2020 and December 31, 2019 (in millions):

	June 30, 2020			December 31, 2019		
	Current	Non-Current	Total	Current	Non-Current	Total
Debt service[1]	$ 55	$ 8	$ 63	$ 58	$ 8	$ 66
Construction/major maintenance[2]	35	7	42	28	6	34
Security/project/insurance[3]	130	—	130	209	31	240
Other	5	1	6	4	1	5
Total	$ 225	$ 16	$ 241	$ 299	$ 46	$ 345

Schedule of property, plant and equipment	*Property, Plant and Equipment, Net* — At June 30, 2020 and December 31, 2019, the components of property, plant and equipment are stated at cost less accumulated depreciation as follows (in millions):

	June 30, 2020	December 31, 2019	Depreciable Lives
Buildings, machinery and equipment	$ 16,488	$ 16,510	1.5 – 50 Years
Geothermal properties	1,595	1,553	13 – 58 Years
Other	282	291	3 – 50 Years
	18,365	18,354	
Less: Accumulated depreciation	6,907	6,851	
	11,458	11,503	
Land	128	128	
Construction in progress	351	332	
Property, plant and equipment, net	$ 11,937	$ 11,963	

Basis of Presentation and Summary of Significant Accounting Policies Leases (Tables)	6 Months Ended Jun. 30, 2020
Leases [Abstract]	
Lessee, Leases	*Lessee* — Supplemental balance sheet information related to our operating and finance leases is as follows as of June 30, 2020 and December 31, 2019 (in millions):

	Location on Consolidated Condensed Balance Sheet	June 30, 2020	December 31, 2019
Right-of-use assets – operating leases	Other assets	$ 165	$ 171
Right-of-use assets – finance leases	Property, plant and equipment, net	$ 102	$ 107
Operating lease obligation, current	Other current liabilities	$ 15	$ 12
Operating lease obligation, long-term	Other long-term liabilities	$ 164	$ 170
Finance lease obligation, current	Debt, current portion	$ 10	$ 10
Finance lease obligation, long-term	Debt, net of current portion	$ 58	$ 63

Revenue From Contracts with Customers (Tables)

Revenue from Contract with Customer [Abstract]

Disaggregation of Revenue

6 Months Ended Jun. 30, 2020

The following tables represent a disaggregation of our operating revenues for the three and six months ended June 30, 2020 and 2019 by reportable segment (in millions). See Note 11 for a description of our segments.

	Three Months Ended June 30, 2020					
	Wholesale					
	West	Texas	East	Retail	Elimination	Total
Third Party:						
Energy & other products	$ 163	$ 254	$ 99	$ 322	$ —	$ 838
Capacity	66	28	104	—	—	198
Revenues relating to physical or executory contracts – third party	$ 229	$ 282	$ 203	$ 322	$ —	$ 1,036
Affiliate[1]:	$ 9	$ 10	$ 20	$ 2	$ (41)	$ —
Revenues relating to leases and derivative instruments[2]						$ 707
Other						1
Total operating revenues						$ 1,744

	Three Months Ended June 30, 2019					
	Wholesale					
	West	Texas	East	Retail	Elimination	Total
Third Party:						
Energy & other products	$ 145	$ 318	$ 124	$ 413	$ —	$ 1,000
Capacity	36	33	154	—	—	223
Revenues relating to physical or executory contracts – third party	$ 181	$ 351	$ 278	$ 413	$ —	$ 1,223
Affiliate[1]:	$ 6	$ 14	$ 30	$ 1	$ (51)	$ —
Revenues relating to leases and derivative instruments[2]						$ 1,376
Total operating revenues						$ 2,599

	Six Months Ended June 30, 2020					
	Wholesale					
	West	Texas	East	Retail	Elimination	Total
Third Party:						

	West	Texas	East	Retail	Elimination	Total
Energy & other products	$ 364	$ 473	$ 205	$ 646	$ —	$ 1,688
Capacity	128	56	209	—	—	393
Revenues relating to physical or executory contracts – third party	$ 492	$ 529	$ 414	$ 646	$ —	$ 2,081
Affiliate[1]:	$ 26	$ 20	$ 39	$ 3	$ (88)	$ —
Revenues relating to leases and derivative instruments[2]						$ 1,953
Other						2
Total operating revenues						$ 4,036

	Six Months Ended June 30, 2019					
	Wholesale					
	West	Texas	East	Retail	Elimination	Total
Third Party:						
Energy & other products	$ 437	$ 620	$ 327	$ 825	$ —	$ 2,209
Capacity	71	65	331	—	—	467
Revenues relating to physical or executory contracts – third party	$ 508	$ 685	$ 658	$ 825	$ —	$ 2,676
Affiliate[1]:	$ 17	$ 28	$ 57	$ 4	$ (106)	$ —
Revenues relating to leases and derivative instruments[2]						$ 2,522
Total operating revenues						$ 5,198

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(1) Affiliate energy, other and capacity revenues reflect revenues on transactions between wholesale and retail affiliates excluding affiliate activity related to leases and derivative instruments. All such activity supports retail supply needs from the wholesale business and/or allows for collateral margin netting efficiencies at Calpine.

(2) Revenues relating to contracts accounted for as leases and derivatives include energy and capacity revenues relating to PPAs that we are required to account for as operating leases and physical and financial commodity derivative contracts, primarily relating to power, natural gas and environmental products. Revenue related to derivative instruments includes revenue recorded in Commodity revenue and mark-to-market gain (loss) within our operating revenues on our Consolidated Condensed Statements of Operations.

Variable Interest Entities and Unconsolidated Investments (Tables)	6 Months Ended Jun. 30, 2020
Variable Interest Entities and Unconsolidated Investments [Abstract]	
Schedule of Variable Interest Entities [Table Text Block]	The table details summarized financial information (excluding intercompany balances which are eliminated in consolidation) for our consolidated VIEs as of June 30, 2020 and December 31, 2019 (in millions):

	June 30, 2020	December 31, 2019
Assets:		
Current assets	$ 371	$ 371
Property, plant and equipment, net	3,846	3,454
Restricted cash, net of current portion	16	15
Other assets	151	53
Total assets	$ 4,384	$ 3,893
Liabilities:		
Current liabilities	$ 250	$ 303
Debt, net of current portion	2,083	1,635
Long-term derivative liabilities	10	8
Other long-term liabilities	60	53
Total liabilities	$ 2,403	$ 1,999

Schedule of equity method investments

At June 30, 2020 and December 31, 2019, our equity method investments included on our Consolidated Condensed Balance Sheets were comprised of the following (in millions):

	Ownership Interest as of June 30, 2020	June 30, 2020	December 31, 2019
Greenfield LP[(1)]	50%	$ 63	$ 66
Calpine Receivables	100%	4	4
Total investments in unconsolidated subsidiaries		$ 67	$ 70

(1) Includes our share of AOCI related to interest rate hedging instruments associated with our unconsolidated subsidiary Greenfield LP's debt.

Income (loss) from unconsolidated investments in power plants

The following table sets forth details of our (income) from unconsolidated subsidiaries for the periods indicated (in millions):

	Three Months Ended June 30, 2020	Three Months Ended June 30, 2019	Six Months Ended June 30, 2020	Six Months Ended June 30, 2019
Greenfield LP	$ (3)	$ (4)	$ (4)	$ (6)
Whitby[(1)]	—	(2)	—	(6)
Calpine Receivables	(1)	1	—	1
Total	$ (4)	$ (5)	$ (4)	$ (11)

(1) On November 20, 2019, we sold our 50% interest in Whitby to a third party.

Debt (Tables)

6 Months Ended Jun. 30, 2020

Debt Disclosure [Abstract]

Schedule of long-term debt instruments

Our debt at June 30, 2020 and December 31, 2019, was as follows (in millions):

	June 30, 2020	December 31, 2019
First Lien Term Loans	$ 3,155	$ 3,167
Senior Unsecured Notes	3,042	3,663
First Lien Notes	2,408	2,835
CCFC Term Loan	962	967
GPC Term Loan	867	—
Project financing, notes payable and other	481	879
Finance lease obligations	68	73
Revolving facilities	122	122
Subtotal	11,105	11,706
Less: Current maturities	231	1,268
Total long-term debt	$ 10,874	$ 10,438

First Lien Term Loans

First Lien Term Loans

The amounts outstanding under our First Lien Term Loans are summarized in the table below (in millions):

	June 30, 2020	December 31, 2019
2024 First Lien Term Loan	$ 1,508	$ 1,514
2026 First Lien Term Loans	1,647	1,653
Total First Lien Term Loans	$ 3,155	$ 3,167

Senior Unsecured Notes

Senior Unsecured Notes

The amounts outstanding under our Senior Unsecured Notes are summarized in the table below (in millions):

	June 30, 2020	December 31, 2019
2023 Senior Unsecured Notes(1)	$ —	$ 623
2024 Senior Unsecured Notes(2)	479	479
2025 Senior Unsecured Notes(2)	1,175	1,174
2028 Senior Unsecured Notes(1)	1,388	1,387
Total Senior Unsecured Notes	$ 3,042	$ 3,663

First Lien Notes

The amounts outstanding under our First Lien Notes are summarized in the table below (in millions):

	June 30, 2020	December 31, 2019

2022 First Lien Notes(1)	$ —	$ 245
2024 First Lien Notes(2)	—	184
2026 First Lien Notes	1,173	1,172
2028 First Lien Notes	1,235	1,234
Total First Lien Notes	$ 2,408	$ 2,835

(1)

Schedule of line of credit facilities

The table below represents amounts issued under our letter of credit facilities at June 30, 2020 and December 31, 2019 (in millions):

	June 30, 2020	December 31, 2019
Corporate Revolving Facility(1)	$ 462	$ 604
CDHI	3	3
Various project financing facilities(2)	336	184
Other corporate facilities(3)	275	294
Total	$ 1,076	$ 1,085

(1) The Corporate Revolving Facility represents our primary revolving facility and matures on March 8, 2023.

(2) On June 9, 2020, we entered into the GPC Term Loan which provides for $200 million in letter of credit facilities.

(3) On April 9, 2020, we amended one of our unsecured letter of credit facilities to partially extend the maturity of $100 million in commitments from June 20, 2020 to June 20, 2022.

Schedule of carrying values and estimated fair values of debt instruments

The following table details the fair values and carrying values of our debt instruments at June 30, 2020 and December 31, 2019 (in millions):

	June 30, 2020		December 31, 2019	
	Fair Value	Carrying Value	Fair Value	Carrying Value
First Lien Term Loans	$ 3,081	$ 3,155	$ 3,238	$ 3,167
Senior Unsecured Notes	3,027	3,042	3,764	3,663
First Lien Notes	2,404	2,408	2,929	2,835
CCFC Term Loan	941	962	982	967
GPC Term Loan	900	867	—	—
Project financing, notes payable and other(1)	426	419	822	817
Revolving facilities	122	122	122	122
Total	$ 10,901	$ 10,975	$ 11,857	$ 11,571

(1) Excludes an agreement that is accounted for as a failed sale-leaseback transaction under U.S. GAAP.

Assets and Liabilities with Recurring Fair Value Measurements (Tables)	6 Months Ended
	Jun. 30, 2020

Fair Value Disclosures [Abstract]

Fair Value, Measurement Inputs, Disclosure

The following tables present our assets and liabilities that were accounted for at fair value on a recurring basis as of June 30, 2020 and December 31, 2019, by level within the fair value hierarchy:

	Assets and Liabilities with Recurring Fair Value Measures as of June 30, 2020			
	Level 1	Level 2	Level 3	Total
	(in millions)			
Assets:				
Cash equivalents[1]	$ 417	$ —	$ —	$ 417
Commodity instruments:				
Commodity exchange traded derivatives contracts	991	—	—	991
Commodity forward contracts[2]	—	424	364	788
Interest rate hedging instruments	—	—	—	—
Effect of netting and allocation of collateral[3][4]	(991)	(299)	(40)	(1,330)
Total assets	$ 417	$ 125	$ 324	$ 866
Liabilities:				
Commodity instruments:				
Commodity exchange traded derivatives contracts	$ 1,001	$ —	$ —	$ 1,001
Commodity forward contracts[2]	—	421	118	539
Interest rate hedging instruments	—	161	—	161
Effect of netting and allocation of collateral[3][4]	(1,001)	(296)	(40)	(1,337)
Total liabilities	$ —	$ 286	$ 78	$ 364

	Assets and Liabilities with Recurring Fair Value Measures as of December 31, 2019			
	Level 1	Level 2	Level 3	Total
	(in millions)			
Assets:				
Cash equivalents[1]	$ 784	$ —	$ —	$ 784
Commodity instruments:				
Commodity exchange traded derivatives contracts	872	—	—	872
Commodity forward contracts[2]	—	245	294	539
Interest rate hedging instruments	—	12	—	12
Effect of netting and allocation of collateral[3][4]	(872)	(131)	(18)	(1,021)
Total assets	$ 784	$ 126	$ 276	$ 1,186

Liabilities:				
Commodity instruments:				
Commodity exchange traded derivatives contracts	$ 984	$ —	$ —	$ 984
Commodity forward contracts[2]	—	285	123	408
Interest rate hedging instruments	—	31	—	31
Effect of netting and allocation of collateral[3][4]	(984)	(133)	(18)	(1,135)
Total liabilities	$ —	$ 183	$ 105	$ 288

(1) At June 30, 2020 and December 31, 2019, we had cash equivalents of $190 million and $573 million included in cash and cash equivalents and $227 million and $211 million included in restricted cash, respectively.

(2) Includes OTC swaps and options.

(3) We offset fair value amounts recognized for derivative instruments executed with the same counterparty under a master netting arrangement for financial statement presentation; therefore, amounts recognized for the right to reclaim, or the obligation to return, cash collateral are presented net with the corresponding derivative instrument fair values. See Note 6 for further discussion of our derivative instruments subject to master netting arrangements.

(4) Cash collateral posted with (received from) counterparties allocated to level 1, level 2 and level 3 derivative instruments totaled $10 million, $(3) million and nil, respectively, at June 30, 2020. Cash collateral posted with (received from) counterparties allocated to level 1, level 2 and level 3 derivative instruments totaled $112 million, $2 million and nil, respectively, at December 31, 2019.

Fair Value Inputs, Assets, Quantitative Information

The following table presents quantitative information for the unobservable inputs used in our most significant level 3 fair value measurements at June 30, 2020 and December 31, 2019:

Quantitative Information about Level 3 Fair Value Measurements

	June 30, 2020				
	Fair Value, Net Asset (Liability)	**Valuation Technique**	**Significant Unobservable Input**	**Range**	**Average[2]**
	(in millions)				
Power Contracts[1]	$ 206	Discounted cash flow	Market price (per MWh)	$ 3.18 — $175.51 /MWh	$ 28.97
Power Congestion Products	$ 6	Discounted cash flow	Market price (per MWh)	$ (6.48) — $11.88 /MWh	$ 1.20
Natural Gas Contracts	$ 9	Discounted cash flow	Market price (per MMBtu)	$ 1.33 — $4.62 /MMBtu	$ 2.82

December 31, 2019			
Fair Value, Net Asset (Liability)	**Valuation Technique**	**Significant Unobservable Input**	**Range**

	(in millions)						
Power Contracts[1]	$ 158	Discounted cash flow	Market price (per MWh)	$ 4.85	— $184.15	/MWh
Power Congestion Products	$ 17	Discounted cash flow	Market price (per MWh)	$(10.32)	— $20	/MWh
Natural Gas Contracts	$ (20)	Discounted cash flow	Market price (per MMBtu)	$ 1.73	— $6.45	/MMBtu

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(1) Power contracts include power and heat rate instruments classified as level 3 in the fair value hierarchy.

Fair Value, Assets Measured on Recurring Basis, Unobservable Input Reconciliation [Table Text Block]

The following table sets forth a reconciliation of changes in the fair value of our net derivative assets (liabilities) classified as level 3 in the fair value hierarchy for the periods indicated (in millions):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Balance, beginning of period	$ 249	$ 105	$ 171	$ (8)
Realized and mark-to-market gains (losses):				
Included in net income:				
Included in operating revenues[1]	37	152	106	197
Included in fuel and purchased energy expense[2]	3	1	(1)	2
Change in collateral	—	(1)	—	1
Purchases, Issuances and settlements:				
Purchases	1	1	1	3
Issuances	—	(1)	—	(1)
Settlements	(49)	(35)	(36)	28
Transfers in and/or out of level 3:				
Transfers into level 3[3]	10	6	11	7
Transfers out of level 3[4]	(5)	(1)	(6)	(2)
Balance, end of period	$ 246	$ 227	$ 246	$ 227
Change in unrealized gains (losses) included in net income relating to instruments still held at end of period	$ 40	$ 153	$ 105	$ 199

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(1) For power contracts and other power-related products, included on our Consolidated Condensed Statements of Operations.

(2) For natural gas and power contracts, swaps and options, included on our Consolidated Condensed Statements of Operations.

(3) We had $10 million and $6 million in gains transferred out of level 2 into level 3 for the three months ended June 30, 2020 and 2019, respectively, and $11 million and $7 million in gains transferred out of level 2 into level 3 for the six months ended June 30, 2020 and 2019, respectively, due to changes in market liquidity in various power markets.

(4) We had \$5 million and \$1 million in gains transferred out of level 3 into level 2 for the three months ended June 30, 2020 and 2019, respectively, and \$6 million and \$2 million in gains transferred out of level 3 into level 2 for the six months ended June 30, 2020 and 2019, respectively, due to changes in market liquidity in various power markets.

Derivative Instruments (Tables)	6 Months Ended Jun. 30, 2020
Derivative Instruments and Hedging Activities Disclosure [Abstract]	
Schedule of Notional Amounts of Outstanding Derivative Positions	As of June 30, 2020 and December 31, 2019, the net forward notional buy (sell) position of our outstanding commodity derivative instruments that did not qualify or were not designated under the normal purchase normal sale exemption and our interest rate hedging instruments were as follows:

Derivative Instruments	Notional Amounts June 30, 2020	Notional Amounts December 31, 2019	Unit of Measure
Power	(242)	(184)	Million MWh
Natural gas	1,165	1,063	Million MMBtu
Environmental credits	36	26	Million Tonnes
Interest rate hedging instruments(1)	$ 7.0	$ 4.8	Billion U.S. dollars

Derivative Instruments Subject to Master Netting Arrangements

The following tables present the fair values of our derivative instruments and our net exposure after offsetting amounts subject to a master netting arrangement with the same counterparty to our derivative instruments recorded on our Consolidated Condensed Balance Sheets by location and hedge type at June 30, 2020 and December 31, 2019 (in millions):

	June 30, 2020 Gross Amounts of Assets and (Liabilities)	June 30, 2020 Gross Amounts Offset on the Consolidated Condensed Balance Sheets	June 30, 2020 Net Amount Presented on the Consolidated Condensed Balance Sheets(1)
Derivative assets:			
Commodity exchange traded derivatives contracts	$ 758	$ (758)	$ —
Commodity forward contracts	440	(241)	199
Interest rate hedging instruments	—	—	—
Total current derivative assets(2)	$ 1,198	$ (999)	$ 199
Commodity exchange traded derivatives contracts	233	(233)	—
Commodity forward contracts	348	(98)	250
Interest rate hedging instruments	—	—	—
Total long-term derivative assets(2)	$ 581	$ (331)	$ 250
Total derivative assets	$ 1,779	$ (1,330)	$ 449
Derivative (liabilities):			
Commodity exchange traded derivatives contracts	$ (733)	$ 733	$ —

Commodity forward contracts	(357)	238	(119)
Interest rate hedging instruments	(49)	—	(49)
Total current derivative (liabilities)[2]	$ (1,139)	$ 971	$ (168)
Commodity exchange traded derivatives contracts	(268)	268	—
Commodity forward contracts	(182)	98	(84)
Interest rate hedging instruments	(112)	—	(112)
Total long-term derivative (liabilities)[2]	$ (562)	$ 366	$ (196)
Total derivative liabilities	$ (1,701)	$ 1,337	$ (364)
Net derivative assets (liabilities)	$ 78	$ 7	$ 85

	December 31, 2019		
	Gross Amounts of Assets and (Liabilities)	Gross Amounts Offset on the Consolidated Condensed Balance Sheets	Net Amount Presented on the Consolidated Condensed Balance Sheets[1]
Derivative assets:			
Commodity exchange traded derivatives contracts	$ 727	$ (727)	$ —
Commodity forward contracts	262	(108)	154
Interest rate hedging instruments	2	—	2
Total current derivative assets[3]	$ 991	$ (835)	$ 156
Commodity exchange traded derivatives contracts	145	(145)	—
Commodity forward contracts	277	(41)	236
Interest rate hedging instruments	10	—	10
Total long-term derivative assets[3]	$ 432	$ (186)	$ 246
Total derivative assets	$ 1,423	$ (1,021)	$ 402
Derivative (liabilities):			
Commodity exchange traded derivatives contracts	$ (830)	$ 830	$ —
Commodity forward contracts	(321)	109	(212)
Interest rate hedging instruments	(13)	—	(13)
Total current derivative (liabilities)[3]	$ (1,164)	$ 939	$ (225)
Commodity exchange traded derivatives contracts	(154)	154	—
Commodity forward contracts	(87)	42	(45)
Interest rate hedging instruments	(18)	—	(18)
Total long-term derivative (liabilities)[3]	$ (259)	$ 196	$ (63)
Total derivative liabilities	$ (1,423)	$ 1,135	$ (288)
Net derivative assets (liabilities)	$ —	$ 114	$ 114

(1) At June 30, 2020 and December 31, 2019, we had $260 million and $191 million, respectively, of collateral under master netting arrangements that were not offset against our derivative instruments on the Consolidated Condensed Balance Sheets primarily related to initial margin requirements.

(2) At June 30, 2020, current and long-term derivative assets are shown net of collateral of $(28) million and $(9) million, respectively, and current and long-term derivative liabilities are shown net of collateral of $1 million and $43 million, respectively.

(3) At December 31, 2019, current and long-term derivative assets are shown net of collateral of $(4) million and $(4) million, respectively, and current and long-term derivative liabilities are shown net of collateral of $108 million and $14 million, respectively.

Schedule of Derivative Instruments in Statement of Financial Position, Fair Value

	June 30, 2020		December 31, 2019	
	Fair Value of Derivative Assets	Fair Value of Derivative Liabilities	Fair Value of Derivative Assets	Fair Value of Derivative Liabilities
Derivatives designated as cash flow hedging instruments:				
Interest rate hedging instruments	$ —	$ 119	$ 12	$ 29
Total derivatives designated as cash flow hedging instruments	$ —	$ 119	$ 12	$ 29
Derivatives not designated as hedging instruments:				
Commodity instruments	$ 449	$ 203	$ 390	$ 257
Interest rate hedging instruments	—	42	—	2
Total derivatives not designated as hedging instruments	$ 449	$ 245	$ 390	$ 259
Total derivatives	$ 449	$ 364	$ 402	$ 288

Realized Unrealized Gain Loss by Instrument

The following tables detail the components of our total activity for both the net realized gain (loss) and the net mark-to-market gain (loss) recognized from our derivative instruments in earnings and where these components were recorded on our Consolidated Condensed Statements of Operations for the periods indicated (in millions):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Realized gain (loss)[(1)(2)]				
Commodity derivative instruments	$ 36	$ 58	$ 33	$ 169
Interest rate hedging instruments[(3)]	$ (18)	$ —	$ (18)	$ —
Total realized gain (loss)	$ 18	$ 58	$ 15	$ 169
Mark-to-market gain (loss)[(4)]				
Commodity derivative instruments	$ 35	$ 187	$ 236	$ 233
Interest rate hedging instruments	(14)	(1)	(38)	(2)
Total mark-to-market gain (loss)	$ 21	$ 186	$ 198	$ 231
Total activity, net	$ 39	$ 244	$ 213	$ 400

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(1) Does not include the realized value associated with derivative instruments that settle through physical delivery.

(2) Includes amortization of acquisition date fair value of financial derivative activity related to the acquisition of Champion Energy and Calpine Solutions.

(3) Includes costs associated with the termination of de-designated interest rate hedging instruments recorded to interest expense related to our Steamboat project debt that was repaid in June 2020.

(4) In addition to changes in market value on derivatives not designated as hedges, changes in mark-to-market gain (loss) also includes adjustments to reflect changes in credit default risk exposure.

Schedule of Other Derivatives Not Designated as Hedging Instruments, Statements of Financial Performance and Financial Position, Location

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Realized and mark-to-market gain (loss)[1]				
Derivatives contracts included in operating revenues[2][3]	$ 34	$ 541	$ 541	$ 578
Derivatives contracts included in fuel and purchased energy expense[2][3]	37	(296)	(272)	(176)
Interest rate hedging instruments included in interest expense[4]	(32)	(1)	(56)	(2)
Total activity, net	$ 39	$ 244	$ 213	$ 400

(1) In addition to changes in market value on derivatives not designated as hedges, changes in mark-to-market gain (loss) also includes adjustments to reflect changes in credit default risk exposure.

(2) Does not include the realized value associated with derivative instruments that settle through physical delivery.

(3) Includes amortization of acquisition date fair value of financial derivative activity related to the acquisition of Champion Energy and Calpine Solutions.

Derivatives Designated as Hedges

The following table details the effect of our net derivative instruments that qualified for hedge accounting treatment and are included in OCI and AOCI for the periods indicated (in millions):

	Three Months Ended June 30,		Three Months Ended June 30,		
	Gain (Loss) Recognized in OCI		Gain (Loss) Reclassified from AOCI into Income[2][3]		
	2020	2019	2020	2019	Affected Line Item on the Consolidated Condensed Statements of Operations
Interest rate hedging instruments[1]	$ 3	$ (32)	$ (25)	$ 3	Interest expense

	Six Months Ended June 30,		Six Months Ended June 30,		
	Gain (Loss) Recognized in OCI		Gain (Loss) Reclassified from AOCI into Income[2][3]		
	2020	2019	2020	2019	Affected Line Item on the Consolidated

					Condensed Statements of Operations
Interest rate hedging instruments[1]	$ (101)	$ (57)	$ (31)	$ 5	Interest expense

(1) We recorded an income tax expense of $1 million and an income tax (benefit) of $(1) million for the three months ended June 30, 2020 and 2019, respectively, and income tax (benefit) of $(2) million and $(1) million for the six months ended June 30, 2020 and 2019, respectively, in AOCI related to our cash flow hedging activities.

(2) Cumulative cash flow hedge losses attributable to Calpine, net of tax, remaining in AOCI were $174 million and $72 million at June 30, 2020 and December 31, 2019, respectively. Cumulative cash flow hedge losses attributable to the noncontrolling interest, net of tax, remaining in AOCI were nil and $3 million at June 30, 2020 and December 31, 2019, respectively.

(3) Includes losses of $16 million and nil that were reclassified from AOCI to interest expense for the three months ended June 30, 2020 and 2019, respectively, and losses of $16 million and $1 million that were reclassified from AOCI to interest expense for the six months ended June 30, 2020 and 2019, respectively,where the hedged transactions became probable of not occurring.

Use of Collateral (Tables)	6 Months Ended Jun. 30, 2020
Use of Collateral [Abstract]	
Schedule of Collateral	The table below summarizes the balances outstanding under margin deposits, natural gas and power prepayments, and exposure under letters of credit and first priority liens for commodity procurement and risk management activities as of June 30, 2020 and December 31, 2019 (in millions):

	June 30, 2020		December 31, 2019	
Margin deposits[1]	$	290	$	432
Natural gas and power prepayments		31		29
Total margin deposits and natural gas and power prepayments with our counterparties[2]	$	321	$	461
Letters of credit issued	$	877	$	906
First priority liens under power and natural gas agreements		20		42
First priority liens under interest rate hedging instruments		168		31
Total letters of credit and first priority liens with our counterparties	$	1,065	$	979
Margin deposits posted with us by our counterparties[1][3]	$	23	$	127
Letters of credit posted with us by our counterparties		212		25
Total margin deposits and letters of credit posted with us by our counterparties	$	235	$	152

(1) We offset fair value amounts recognized for derivative instruments executed with the same counterparty under a master netting arrangement for financial statement presentation; therefore, amounts recognized for the right to reclaim, or the obligation to return, cash collateral are presented net with the corresponding derivative instrument fair values. See Note 6 for further discussion of our derivative instruments subject to master netting arrangements.

(2) At June 30, 2020 and December 31, 2019, $19 million and $117 million, respectively, were included in current and long-term derivative assets and liabilities, $294 million and $336 million, respectively, were included in margin deposits and other prepaid expense and $8 million and $8 million, respectively, were included in other assets on our Consolidated Condensed Balance Sheets.

(3) At June 30, 2020 and December 31, 2019, $12 million and $3 million, respectively, were included in current and long-term derivative assets and liabilities, $11 million and $93 million, respectively, were included in other current liabilities and nil and $31 million, respectively, were included in other long-term liabilities on our Consolidated Condensed Balance Sheets.

Income Taxes Income Taxes (Tables)	6 Months Ended Jun. 30, 2020
Income Tax Disclosure [Abstract]	
Schedule of Components of Income Tax Expense (Benefit)	The table below shows our consolidated income tax expense (benefit) and our effective tax rates for the periods indicated (in millions):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Income tax expense (benefit)	$ (31)	$ 9	$ 15	$ 19
Effective tax rate	(23)%	3%	5%	4%

Segment Information (Tables)	6 Months Ended Jun. 30, 2020
Segment Reporting [Abstract]	
Schedule of Financial Data for Segments	Commodity Margin is a key operational measure of profit reviewed by our chief operating decision maker to assess the performance of our segments. The tables below show financial data for our segments (including a reconciliation of Commodity Margin to income (loss) from operations by segment) for the periods indicated (in millions):

	Three Months Ended June 30, 2020					
	Wholesale				Consolidation	
	West	Texas	East	Retail	Elimination	Total
Total operating revenues[1]	$ 470	$ 620	$ 244	$ 720	$ (310)	$ 1,744
Commodity Margin	$ 269	$ 172	$ 193	$ 89	$ —	$ 723
Add: Mark-to-market commodity activity, net and other[2]	67	(17)	(38)	56	(9)	59
Less:						
Operating and maintenance expense	96	73	71	35	(9)	266
Depreciation and amortization expense	56	50	45	12	—	163
General and other administrative expense	6	13	8	4	—	31
Other operating expenses	7	1	6	—	—	14
(Income) from unconsolidated subsidiaries	—	—	(4)	—	—	(4)
Income from operations	171	18	29	94	—	312
Interest expense						167
Gain (loss) on extinguishment of debt and other (income) expense, net						13
Income before income taxes						$ 132

	Three Months Ended June 30, 2019					
	Wholesale				Consolidation	
	West	Texas	East	Retail	Elimination	Total
Total operating revenues[1]	$ 649	$ 899	$ 646	$ 1,082	$ (677)	$ 2,599
Commodity Margin	$ 251	$ 173	$ 235	$ 93	$ —	$ 752
Add: Mark-to-market commodity activity, net and other[2]	58	240	94	(182)	(10)	200
Less:						

	West	Texas	East	Retail	Consolidation Elimination	Total
Operating and maintenance expense	84	66	72	33	(10)	245
Depreciation and amortization expense	60	54	48	13	—	175
General and other administrative expense	5	15	10	4	—	34
Other operating expenses	7	1	11	—	—	19
Impairment losses	—	—	40	—	—	40
(Income) from unconsolidated subsidiaries	—	—	(6)	1	—	(5)
Income (loss) from operations	153	277	154	(140)	—	444
Interest expense						157
Gain (loss) on extinguishment of debt and other (income) expense, net						8
Income before income taxes						$ 279

	Six Months Ended June 30, 2020					
	Wholesale				Consolidation	
	West	Texas	East	Retail	Elimination	Total
Total operating revenues(3)	$ 1,175	$ 1,270	$ 786	$ 1,628	$ (823)	$ 4,036
Commodity Margin	$ 503	$ 285	$ 343	$ 180	$ —	$ 1,311
Add: Mark-to-market commodity activity, net and other(4)	121	84	44	40	(17)	272
Less:						
Operating and maintenance expense	182	139	134	68	(17)	506
Depreciation and amortization expense	112	100	91	24	—	327
General and other administrative expense	14	24	16	8	—	62
Other operating expenses	15	3	13	—	—	31
(Income) from unconsolidated subsidiaries	—	—	(4)	—	—	(4)
Income from operations	301	103	137	120	—	661
Interest expense						336
Gain (loss) on extinguishment of debt and other (income) expense, net						17
Income before income taxes						$ 308

	Six Months Ended June 30, 2019					
	Wholesale				Consolidation	
	West	Texas	East	Retail	Elimination	Total
Total operating revenues(3)	$ 1,331	$ 1,642	$ 1,335	$ 2,080	$ (1,190)	$ 5,198
Commodity Margin	$ 515	$ 335	$ 500	$ 181	$ —	$ 1,531
Add: Mark-to-market commodity activity, net and other(4)	114	284	107	(235)	(18)	252
Less:						
Operating and maintenance expense	165	131	139	67	(18)	484
Depreciation and amortization expense	133	99	91	26	—	349
General and other administrative expense	12	27	19	8	—	66
Other operating expenses	16	3	19	—	—	38
Impairment losses	—	—	55	—	—	55
(Income) from unconsolidated subsidiaries	—	—	(12)	1	—	(11)
Income (loss) from operations	303	359	296	(156)	—	802
Interest expense						306
Gain (loss) on extinguishment of debt and other (income) expense, net						27
Income before income taxes						$ 469

(1) Includes intersegment revenues of $70 million and $100 million in the West, $214 million and $348 million in Texas, $24 million and $228 million in the East and $2 million and $1 million in Retail for the three months ended June 30, 2020 and 2019, respectively.

(2) Includes $(22) million and $(19) million of lease levelization and $9 million and $18 million of amortization expense for the three months ended June 30, 2020 and 2019, respectively.

(3) Includes intersegment revenues of $189 million and $262 million in the West, $432 million and $559 million in Texas, $199 million and $365 million in the East and $3 million and $4 million in Retail for the six months ended June 30, 2020 and 2019, respectively.

(4) Includes $(40) million and $(35) million of lease levelization and $25 million and $39 million of amortization expense for the six months ended June 30, 2020 and 2019, respectively.

Basis of Presentation and Summary of Significant Accounting Policies - Components of Restricted Cash (Details) - USD ($) $ in Millions	Sep. 30, 2020	Jun. 30, 2020	Dec. 31, 2019
Accounting Policies [Line Items]			
Current		$ 225	$ 299
Non-current		16	46
Total		241	345
Debt service			
Accounting Policies [Line Items]			
Current		55	58
Non-current		8	8
Total		63	66
Construction major maintenance			
Accounting Policies [Line Items]			
Current		35	28
Non-current		7	6
Total		42	34
Margin Deposits Received/Returned to PG&E [Member]			
Accounting Policies [Line Items]			
Total		119	
Security project insurance			
Accounting Policies [Line Items]			
Current		130	209
Non-current		0	31
Total		130	240
Other			
Accounting Policies [Line Items]			
Current		5	4
Non-current		1	1
Total		$ 6	$ 5
Subsequent Event | Debt service			
Accounting Policies [Line Items]			
Total	$ 52		
Subsequent Event | Construction major maintenance			
Accounting Policies [Line Items]			
Total	2		
Subsequent Event | Security project insurance			
Accounting Policies [Line Items]			
Total	$ 34		

Basis of Presentation and Summary of Significant Accounting Policies - Property, Plant and Equipment, Net (Details) - USD ($) $ in Millions	6 Months Ended	
	Jun. 30, 2020	Dec. 31, 2019
Property, Plant and Equipment [Line Items]		
Buildings, machinery and equipment	$ 16,488	$ 16,510
Geothermal properties	1,595	1,553
Other	282	291
Property, plant and equipment, gross	18,365	18,354
Less: Accumulated depreciation	6,907	6,851
Property, plant and equipment, gross, less accumulated depreciation, depletion and amortization	11,458	11,503
Land	128	128
Construction in progress	351	332
Property, plant and equipment, net	$ 11,937	$ 11,963
Minimum [Member] | Building, Machinery and Equipment, Gross		
Property, Plant and Equipment [Line Items]		
Property, plant and equipment, estimated useful lives	1 year 6 months	
Minimum [Member] | Geothermal Properties, Gross		
Property, Plant and Equipment [Line Items]		
Property, plant and equipment, estimated useful lives	13 years	
Minimum [Member] | Property, Plant and Equipment, Other Types		
Property, Plant and Equipment [Line Items]		
Property, plant and equipment, estimated useful lives	3 years	
Maximum | Building, Machinery and Equipment, Gross		
Property, Plant and Equipment [Line Items]		
Property, plant and equipment, estimated useful lives	50 years	
Maximum | Geothermal Properties, Gross		
Property, Plant and Equipment [Line Items]		
Property, plant and equipment, estimated useful lives	58 years	
Maximum | Property, Plant and Equipment, Other Types		
Property, Plant and Equipment [Line Items]		
Property, plant and equipment, estimated useful lives	50 years	

Basis of Presentation and Summary of Significant Accounting Policies - Narrative (Details) - USD ($) $ in Millions	3 Months Ended		6 Months Ended	
	Mar. 31, 2020	Jun. 30, 2019	Jun. 30, 2020	Jun. 30, 2019
Accounting Policies [Abstract]				
Interest costs capitalized	$ 3	$ 1	$ 5	$ 8

Basis of Presentation and Summary of Significant Accounting Policies - Leases (Details) - USD ($) $ in Millions	3 Months Ended		6 Months Ended		
	Jun. 30, 2020	Jun. 30, 2019	Jun. 30, 2020	Jun. 30, 2019	Dec. 31, 2019
Lessee, Lease, Description [Line Items]					
Right-of-use assets – operating leases	$ 165		$ 165		$ 171
Operating lease obligation, current	15		15		12
Operating lease obligation, long-term	164		164		170
Finance lease obligation, current	10		10		10
Finance lease obligation, long-term	58		58		63
Operating lease, lease income	57	$ 70	105	$ 139	
Property Subject to Finance Lease					
Lessee, Lease, Description [Line Items]					
Right-of-use assets – finance leases	$ 102		$ 102		$ 107

Revenue From Contracts with Customers Disaggregation of Revenues (Details) - USD ($) $ in Millions	3 Months Ended		6 Months Ended	
	Jun. 30, 2020	Jun. 30, 2019	Jun. 30, 2020	Jun. 30, 2019
Disaggregation of Revenue [Line Items]				
Commodity revenue	$ 1,852	$ 2,128	$ 3,795	$ 4,666
Other income	1		2	
Revenues	1,744 [1]	2,599 [1]	4,036 [2]	5,198 [2]
West				
Disaggregation of Revenue [Line Items]				
Revenues	470 [1]	649 [1]	1,175 [2]	1,331 [2]
Texas				
Disaggregation of Revenue [Line Items]				
Revenues	620 [1]	899 [1]	1,270 [2]	1,642 [2]
East				
Disaggregation of Revenue [Line Items]				
Revenues	244 [1]	646 [1]	786 [2]	1,335 [2]
Retail				
Disaggregation of Revenue [Line Items]				
Revenues	720 [1]	1,082 [1]	1,628 [2]	2,080 [2]
Energy & other products				
Disaggregation of Revenue [Line Items]				
Commodity revenue	838	1,000	1,688	2,209
Energy & other products | West				
Disaggregation of Revenue [Line Items]				
Commodity revenue	163	145	364	437
Energy & other products | Texas				
Disaggregation of Revenue [Line Items]				
Commodity revenue	254	318	473	620
Energy & other products | East				
Disaggregation of Revenue [Line Items]				
Commodity revenue	99	124	205	327
Energy & other products | Retail				
Disaggregation of Revenue [Line Items]				
Commodity revenue	322	413	646	825
Energy & other products | Elimination				
Disaggregation of Revenue [Line Items]				
Commodity revenue	0	0	0	0
Capacity				
Disaggregation of Revenue [Line Items]				
Commodity revenue	198	223	393	467
Capacity | West				

Disaggregation of Revenue [Line Items]				
Commodity revenue	66	36	128	71
Capacity | Texas				
Disaggregation of Revenue [Line Items]				
Commodity revenue	28	33	56	65
Capacity | East				
Disaggregation of Revenue [Line Items]				
Commodity revenue	104	154	209	331
Capacity | Retail				
Disaggregation of Revenue [Line Items]				
Commodity revenue	0	0	0	0
Capacity | Elimination				
Disaggregation of Revenue [Line Items]				
Commodity revenue	0	0	0	0
Revenues relating to physical or executory contracts – third party				
Disaggregation of Revenue [Line Items]				
Commodity revenue	1,036	1,223	2,081	2,676
Revenues relating to physical or executory contracts – third party | West				
Disaggregation of Revenue [Line Items]				
Commodity revenue	229	181	492	508
Revenues relating to physical or executory contracts – third party | Texas				
Disaggregation of Revenue [Line Items]				
Commodity revenue	282	351	529	685
Revenues relating to physical or executory contracts – third party | East				
Disaggregation of Revenue [Line Items]				
Commodity revenue	203	278	414	658
Revenues relating to physical or executory contracts – third party | Retail				
Disaggregation of Revenue [Line Items]				
Commodity revenue	322	413	646	825
Revenues relating to physical or executory contracts – third party | Elimination				
Disaggregation of Revenue [Line Items]				
Commodity revenue	0	0	0	0
Affiliate Revenue				
Disaggregation of Revenue [Line Items]				
Commodity revenue	[3] 0	0	0	0
Affiliate Revenue | West				
Disaggregation of Revenue [Line Items]				
Commodity revenue	[3] 9	6	26	17

Affiliate Revenue | Texas				
Disaggregation of Revenue [Line Items]				
Commodity revenue	[3] 10	14	20	28
Affiliate Revenue | East				
Disaggregation of Revenue [Line Items]				
Commodity revenue	[3] 20	30	39	57
Affiliate Revenue | Retail				
Disaggregation of Revenue [Line Items]				
Commodity revenue	[3] 2	1	3	4
Affiliate Revenue | Elimination				
Disaggregation of Revenue [Line Items]				
Commodity revenue	[3] (41)	(51)	(88)	(106)
Revenues relating to leases and derivative instruments				
Disaggregation of Revenue [Line Items]				
Revenues	$ 707	[4] $ 1,376	[4] $ 1,953	[4] $ 2,522

[1] Includes intersegment revenues of $70 million and $100 million in the West, $214 million and $348 million in Texas, $24 million and $228 million in the East and $2 million and $1 million in Retail for the three months ended June 30, 2020 and 2019, respectively.

[2] Includes intersegment revenues of $189 million and $262 million in the West, $432 million and $559 million in Texas, $199 million and $365 million in the East and $3 million and $4 million in Retail for the six months ended June 30, 2020 and 2019, respectively.

[3] Affiliate energy, other and capacity revenues reflect revenues on transactions between wholesale and retail affiliates excluding affiliate activity related to leases and derivative instruments. All such activity supports retail supply needs from the wholesale business and/or allows for collateral margin netting efficiencies at Calpine.

[4] Revenues relating to contracts accounted for as leases and derivatives include energy and capacity revenues relating to PPAs that we are required to account for as operating leases and physical and financial commodity derivative contracts, primarily relating to power, natural gas and environmental products. Revenue related to derivative instruments includes revenue recorded in Commodity revenue and mark-to-market gain (loss) within our operating revenues on our Consolidated Condensed Statements of Operations.

Revenue From Contracts with Customers Performance Obligations Not Yet Satisfied (Details) - Capacity $ in Millions	Jun. 30, 2020 USD ($)
Revenue, Remaining Performance Obligation, Expected Timing of Satisfaction, Start Date [Axis]: 2020-01-01	
Revenue, Remaining Performance Obligation, Expected Timing of Satisfaction [Line Items]	
Revenue, Remaining Performance Obligation, Amount	$ 346
Revenue, Remaining Performance Obligation, Expected Timing of Satisfaction, Period	1 year
Revenue, Remaining Performance Obligation, Expected Timing of Satisfaction, Start Date [Axis]: 2021-01-01	
Revenue, Remaining Performance Obligation, Expected Timing of Satisfaction [Line Items]	
Revenue, Remaining Performance Obligation, Amount	$ 672
Revenue, Remaining Performance Obligation, Expected Timing of Satisfaction, Period	1 year
Revenue, Remaining Performance Obligation, Expected Timing of Satisfaction, Start Date [Axis]: 2022-01-01	
Revenue, Remaining Performance Obligation, Expected Timing of Satisfaction [Line Items]	
Revenue, Remaining Performance Obligation, Amount	$ 449
Revenue, Remaining Performance Obligation, Expected Timing of Satisfaction, Period	1 year
Revenue, Remaining Performance Obligation, Expected Timing of Satisfaction, Start Date [Axis]: 2023-01-01	
Revenue, Remaining Performance Obligation, Expected Timing of Satisfaction [Line Items]	
Revenue, Remaining Performance Obligation, Amount	$ 330
Revenue, Remaining Performance Obligation, Expected Timing of Satisfaction, Period	1 year
Revenue, Remaining Performance Obligation, Expected Timing of Satisfaction, Start Date [Axis]: 2024-01-01	
Revenue, Remaining Performance Obligation, Expected Timing of Satisfaction [Line Items]	
Revenue, Remaining Performance Obligation, Amount	$ 203
Revenue, Remaining Performance Obligation, Expected Timing of Satisfaction, Period	1 year
Revenue, Remaining Performance Obligation, Expected Timing of Satisfaction, Start Date [Axis]: 2025-01-01	
Revenue, Remaining Performance Obligation, Expected Timing of Satisfaction [Line Items]	
Revenue, Remaining Performance Obligation, Amount	$ 108
Revenue, Remaining Performance Obligation, Expected Timing of Satisfaction, Period	

Revenue From Contracts with Customers Performance Obligations and Contract Balances (Details) - Environmental credits - USD ($) $ in Millions	3 Months Ended		6 Months Ended		
	Jun. 30, 2020	Jun. 30, 2019	Jun. 30, 2020	Jun. 30, 2019	Dec. 31, 2019
Disaggregation of Revenue [Line Items]					
Contract with customer, liability, current	$ 27		$ 27		$ 14
Contract with customer, liability, revenue recognized	$ 2	$ 2	$ 2	$ 3	

Variable Interest Entities and Unconsolidated Investments (VIE Texuals) (Details) $ in Millions	3 Months Ended			6 Months Ended		
	Jun. 30, 2020 USD ($) MW	Mar. 31, 2020 USD ($)	Jun. 30, 2019 USD ($)	Jun. 30, 2020 USD ($) MW	Jun. 30, 2019 USD ($)	Dec. 31, 2019 USD ($) MW
Variable Interest Entity [Line Items]						
Equity method investment, ownership percentage	50.00%			50.00%		
Adjustments to additional paid in capital, other		$ 67				
Equity method investment, summarized financial information, debt	$ 276			$ 276		$ 299
Prorata share of equity method investment, summarized financial information, debt	138			138		$ 150
Return on investments from unconsolidated subsidiaries				0	$ 11	
Variable interest entity, financial or other support, amount	$ 0		$ 0	$ 0		
Greenfield						
Variable Interest Entity [Line Items]						
Power generation capacity | MW	1,038			1,038		
Equity method investment, ownership percentage	50.00%			50.00%		
Return on investments from unconsolidated subsidiaries				$ 0		
Calpine Receivables						
Variable Interest Entity [Line Items]						
Equity method investment, ownership percentage	100.00%			100.00%		
Variable interest entity, reporting entity involvement, maximum loss exposure, amount	$ 51			$ 51		
Whitby						
Variable Interest Entity [Line Items]						
Return on investments from unconsolidated subsidiaries			$ 0		$ 11	
Variable Interest Entity, Primary Beneficiary						
Variable Interest Entity [Line Items]						
Power generation capacity | MW	7,354			7,354		6,669
Russell City Energy						
Variable Interest Entity [Line Items]						
Minority interest ownership percentage by noncontrolling third party owners						25.00%
Payments to Acquire Business		35				
Acquisition of noncontrolling interest		49				
Working Capital Adjustment to Sale Price		$ 14				

Variable Interest Entities and Unconsolidated Investments (Unconsolidated VIEs) (Details) - USD ($) $ in Millions	3 Months Ended		6 Months Ended		
	Jun. 30, 2020	Jun. 30, 2019	Jun. 30, 2020	Jun. 30, 2019	Dec. 31, 2019
Schedule of Equity Method Investments [Line Items]					
Return on investments from unconsolidated subsidiaries			$ 0	$ 11	
Equity method investment, ownership percentage	50.00%		50.00%		
Equity method investments	$ 67		$ 67		$ 70
Greenfield					
Schedule of Equity Method Investments [Line Items]					
Return on investments from unconsolidated subsidiaries			$ 0		
Equity method investment, ownership percentage	50.00%		50.00%		
Equity method investments	[1] $ 63		$ 63		66
Calpine Receivables					
Schedule of Equity Method Investments [Line Items]					
Equity method investment, ownership percentage	100.00%		100.00%		
Equity method investments	$ 4		$ 4		$ 4
Whitby					
Schedule of Equity Method Investments [Line Items]					
Return on investments from unconsolidated subsidiaries		$ 0		$ 11	

[1] Includes our share of AOCI related to interest rate hedging instruments associated with our unconsolidated subsidiary Greenfield LP’s debt.

Variable Interest Entities and Unconsolidated Investments Consolidated VIEs (Details) - USD ($) $ in Millions	Jun. 30, 2020	Dec. 31, 2019
Current assets	$ 2,689	$ 3,302
Property, plant and equipment, net	11,937	11,963
Restricted cash, current	225	299
Other current assets	42	49
Total assets	15,955	16,649
Current liabilities	1,607	2,925
Debt, current portion	231	1,268
Other long-term liabilities	479	565
Total liabilities	13,156	13,991
Variable Interest Entity, Primary Beneficiary		
Current assets	371	371
Property, plant and equipment, net	3,846	3,454
Restricted cash, current	16	15
Other current assets	151	53
Total assets	4,384	3,893
Current liabilities	250	303
Debt, current portion	2,083	1,635
Long-term derivative liabilities	10	8
Other long-term liabilities	60	53
Total liabilities	$ 2,403	$ 1,999

Variable Interest Entities and Unconsolidated Investments (Income from Unconsolidated Investments 10-Q) (Details) - USD ($) $ in Millions	3 Months Ended		6 Months Ended		
	Jun. 30, 2020	Jun. 30, 2019	Jun. 30, 2020	Jun. 30, 2019	Nov. 20, 2019
(Income) from unconsolidated subsidiaries	$ (4)	$ (5)	$ (4)	$ (11)	
Greenfield					
(Income) from unconsolidated subsidiaries	(3)	(4)	(4)	(6)	
Whitby					
(Income) from unconsolidated subsidiaries	[1] 0	(2)	0	(6)	
Equity method investment, ownership interest sold					50.00%
Calpine Receivables					
(Income) from unconsolidated subsidiaries	$ (1)	$ 1	$ 0	$ 1	

[1] (1)On November 20, 2019, we sold our 50% interest in Whitby to a third party.

Debt (Debt) (Details) - USD ($) $ in Millions	3 Months Ended		6 Months Ended				
	Jun. 30, 2020	Jun. 30, 2019	Jun. 30, 2020	Jun. 30, 2019	Aug. 10, 2020	Jun. 09, 2020	Dec. 31, 2019
Debt Instrument [Line Items]							
Gain (Loss) on Extinguishment of Debt	$ (8)	$ (3)	$ (8)	$ 1			
Subtotal	11,105		11,105				$ 11,706
Less: Current maturities	231		231				1,268
Total long-term debt	10,874		10,874				10,438
Repayments of Other Long-term Debt			412	$ 77			
First Lien Term Loans							
Debt Instrument [Line Items]							
Subtotal	3,155		3,155				3,167
Senior Unsecured Notes							
Debt Instrument [Line Items]							
Subtotal	3,042		3,042				3,663
Senior Unsecured Notes							
Debt Instrument [Line Items]							
Gain (Loss) on Extinguishment of Debt	8						
First Lien Notes							
Debt Instrument [Line Items]							
Subtotal	2,408		2,408				2,835
Project financing, notes payable and other							
Debt Instrument [Line Items]							
Subtotal	481		481				879
CCFC Term Loan							
Debt Instrument [Line Items]							
Subtotal	962		962				967
GPC Term Loan [Member]							
Debt Instrument [Line Items]							
Debt Instrument, Face Amount						$ 900	
Subtotal	867		867				0
Line of Credit Facility, Maximum Borrowing Capacity						$ 200	
Finance lease obligations							
Debt Instrument [Line Items]							
Subtotal	68		68				73
Revolving facilities							
Debt Instrument [Line Items]							
Subtotal	$ 122		$ 122				$ 122
Subsequent Event | 2024 Senior Unsecured Notes(2)							
Debt Instrument [Line Items]							
Early Tender Offer Amount					$ 255		

Subsequent Event | 2029 Senior Unsecured Notes [Member]			
Debt Instrument [Line Items]			
Debt Instrument, Face Amount		$ 650	
Debt Instrument, Interest Rate, Stated Percentage		4.625%	
Subsequent Event | 2025 Senior Unsecured Notes(2)			
Debt Instrument [Line Items]			
Early Tender Offer Amount		$ 1,045	
Subsequent Event | 2031 Senior Unsecured Notes [Member]			
Debt Instrument [Line Items]			
Debt Instrument, Face Amount		$ 850	
Debt Instrument, Interest Rate, Stated Percentage		5.00%	
London Interbank Offered Rate (LIBOR) [Member] | GPC Term Loan [Member]			
Debt Instrument [Line Items]			
Debt Instrument, Basis Spread on Variable Rate	2.00%		
Increase in GPC Loan Rate Every Three Years [Member] | GPC Term Loan [Member]			
Debt Instrument [Line Items]			
Debt Instrument, Basis Spread on Variable Rate	0.125%		
Federal Funds Effective Rate [Member] | GPC Term Loan [Member]			
Debt Instrument [Line Items]			
Debt Instrument, Basis Spread on Variable Rate	0.50%		
Prime Rate or The Eurodollar Rate For A One-Month Interest Period [Member] | GPC Term Loan [Member]			
Debt Instrument [Line Items]			
Debt Instrument, Basis Spread on Variable Rate	1.00%		
Increase In LIBOR Plus Rate Every Three Years [Member] | GPC Term Loan [Member]			
Debt Instrument [Line Items]			
Debt Instrument, Basis Spread on Variable Rate	0.125%		
Minimum [Member] | GPC Term Loan [Member]			
Debt Instrument [Line Items]			
Debt Instrument, Interest Rate, Stated Percentage			0.00%
Steamboat [Member]			
Debt Instrument [Line Items]			
Repayments of Other Long-term Debt	$ 342		

Debt (Debt Textuals) (Details) - USD ($) $ in Millions	6 Months Ended Jun. 30, 2020	Aug. 14, 2020	Apr. 09, 2020	Jun. 30, 2019
Line of Credit Facility [Line Items]				
Effective interest rate	5.30%			5.90%
2022 First Lien Notes				
Line of Credit Facility [Line Items]				
Early Repayment of Senior Debt	[1] $ 245			
2024 First Lien Notes				
Line of Credit Facility [Line Items]				
Early Repayment of Senior Debt	[2] $ 184			
Subsequent Event | Russell City and Los Esteros Project Debt				
Line of Credit Facility [Line Items]				
Funds distributed after emergence of PG&E from bankruptcy		$ 88		
Other corporate facilities				
Line of Credit Facility [Line Items]				
Letter of Credit Amount Extended			$ 100	

[1] On January 21, 2020, we redeemed the outstanding $245 million in aggregate principal amount of our 2022 First Lien Notes, which was included in debt, current portion on our Consolidated Condensed Balance Sheet at December 31, 2019, with the proceeds from the 2028 First Lien Notes, which was included in cash and cash equivalents on our Consolidated Condensed Balance Sheet at

[2] (2)On January 21, 2020, we redeemed the outstanding $184 million in aggregate principal amount of our 2024 First Lien Notes, which was included in debt, current portion on our Consolidated Condensed Balance Sheet at December 31, 2019, with the proceeds from the 2028 First Lien Notes, which was included in cash and cash equivalents on our Consolidated Condensed Balance Sheet at December 31, 2019.

Debt (First Lien Term Loans) (Details) - USD ($) $ in Millions	Jun. 30, 2020	Dec. 31, 2019
Debt Instrument [Line Items]		
Long-term debt	$ 10,901	$ 11,857
2024 First Lien Term Loan		
Debt Instrument [Line Items]		
Long-term debt	1,508	1,514
2026 First Lien Term Loans		
Debt Instrument [Line Items]		
Long-term debt	1,647	1,653
First Lien Term Loans		
Debt Instrument [Line Items]		
Long-term debt	$ 3,155	$ 3,167

Debt Senior Unsecured Notes (Details) - USD ($) $ in Millions		3 Months Ended	6 Months Ended		
		Jun. 30, 2020	Jun. 30, 2020	Jun. 30, 2019	Dec. 31, 2019
Debt Instrument [Line Items]					
Long-term debt		$ 10,901	$ 10,901		$ 11,857
Repayments of unsecured debt			623	$ 44	
2023 Senior Unsecured Notes					
Debt Instrument [Line Items]					
Long-term debt	[1]	0	0		623
Repayments of unsecured debt		623			
2024 Senior Unsecured Notes(2)					
Debt Instrument [Line Items]					
Long-term debt	[2]	479	479		479
2025 Senior Unsecured Notes(2)					
Debt Instrument [Line Items]					
Long-term debt	[2]	1,175	1,175		1,174
2028 Senior Unsecured Notes					
Debt Instrument [Line Items]					
Long-term debt	[1]	1,388	1,388		1,387
Senior Unsecured Notes					
Debt Instrument [Line Items]					
Long-term debt		3,042	3,042		$ 3,663
2022 First Lien Notes					
Debt Instrument [Line Items]					
Early Repayment of Senior Debt	[3]		245		
Long-term debt	[3]	0	0		
2024 First Lien Notes					
Debt Instrument [Line Items]					
Early Repayment of Senior Debt	[4]		184		
Long-term debt	[4]	$ 0	$ 0		

[1] On January 21, 2020, we redeemed the outstanding $623 million in aggregate principal amount of our 2023 Senior Unsecured Notes, which was included in debt, current portion on our Consolidated Condensed Balance Sheet at December 31, 2019, with the proceeds from the 2028 Senior Unsecured Notes, which was included in cash and cash equivalents on our Consolidated Condensed Balance Sheet at December 31, 2019.

[2] On August 10, 2020, we utilized proceeds from our 2029 Senior Unsecured Notes and 2031 Senior Unsecured Notes, together with cash on hand, to purchase approximately $255 million and $1,045 million in aggregate principal amount of our 2024 Senior Unsecured Notes and 2025 Senior Unsecured Notes, respectively.

[3] On January 21, 2020, we redeemed the outstanding $245 million in aggregate principal amount of our 2022 First Lien Notes, which was included in debt, current portion on our Consolidated Condensed Balance Sheet at December 31, 2019, with the proceeds from the 2028 First Lien Notes, which was included in cash and cash equivalents on our Consolidated Condensed Balance Sheet at

[4] (2)On January 21, 2020, we redeemed the outstanding $184 million in aggregate principal amount of our 2024 First Lien Notes, which was included in debt, current portion on our Consolidated Condensed Balance Sheet at December 31, 2019, with the proceeds from the 2028 First Lien Notes, which was included in cash and cash equivalents on our Consolidated Condensed Balance Sheet at December 31, 2019.

Debt (First Lien Notes) (Details) - USD ($) $ in Millions		6 Months Ended Jun. 30, 2020	Dec. 31, 2019
Debt Instrument [Line Items]			
Long-term debt		$ 10,901	$ 11,857
2022 First Lien Notes			
Debt Instrument [Line Items]			
Long-term debt	[1]	0	
Early Repayment of Senior Debt	[1]	245	
2024 First Lien Notes			
Debt Instrument [Line Items]			
Long-term debt	[2]	0	
Early Repayment of Senior Debt	[2]	184	
2026 First Lien Notes			
Debt Instrument [Line Items]			
Long-term debt		1,173	1,172
2028 First Lien Notes			
Debt Instrument [Line Items]			
Long-term debt		1,235	1,234
First Lien Notes			
Debt Instrument [Line Items]			
Long-term debt		$ 2,408	$ 2,835

[1] On January 21, 2020, we redeemed the outstanding $245 million in aggregate principal amount of our 2022 First Lien Notes, which was included in debt, current portion on our Consolidated Condensed Balance Sheet at December 31, 2019, with the proceeds from the 2028 First Lien Notes, which was included in cash and cash equivalents on our Consolidated Condensed Balance Sheet at

[2] (2)On January 21, 2020, we redeemed the outstanding $184 million in aggregate principal amount of our 2024 First Lien Notes, which was included in debt, current portion on our Consolidated Condensed Balance Sheet at December 31, 2019, with the proceeds from the 2028 First Lien Notes, which was included in cash and cash equivalents on our Consolidated Condensed Balance Sheet at December 31, 2019.

Debt (Letter of Credit) (Details) - USD ($) $ in Millions		Jun. 30, 2020	Dec. 31, 2019
Line of Credit Facility [Line Items]			
Letters of Credit Outstanding, Amount		$ 1,076	$ 1,085
Revolving facilities			
Line of Credit Facility [Line Items]			
Letters of Credit Outstanding, Amount	[1]	462	604
CDHI			
Line of Credit Facility [Line Items]			
Letters of Credit Outstanding, Amount	[2]	3	3
Various project financing facilities(2)			
Line of Credit Facility [Line Items]			
Letters of Credit Outstanding, Amount	[3]	336	184
Other corporate facilities			
Line of Credit Facility [Line Items]			
Letters of Credit Outstanding, Amount	[4]	$ 275	$ 294

[1] The Corporate Revolving Facility represents our primary revolving facility and matures on March 8, 2023.

[2] On April 9, 2020, we amended one of our unsecured letter of credit facilities to partially extend the maturity of $100 million in commitments from June 20, 2020 to June 20, 2022.

[3] On June 9, 2020, we entered into the GPC Term Loan which provides for $200 million in letter of credit facilities.

[4] (2)On January 21, 2020, we redeemed the outstanding $184 million in aggregate principal amount of our 2024 First Lien Notes, which was included in debt, current portion on our Consolidated Condensed Balance Sheet at December 31, 2019, with the proceeds from the 2028 First Lien Notes, which was included in cash and cash equivalents on our Consolidated Condensed Balance Sheet at December 31, 2019.

Debt (Fair Value of Debt) (Details) - USD ($) $ in Millions	Jun. 30, 2020	Dec. 31, 2019
Fair Value, Balance Sheet Grouping, Financial Statement Captions [Line Items]		
Long-term debt	$ 10,901	$ 11,857
Senior Unsecured Notes		
Fair Value, Balance Sheet Grouping, Financial Statement Captions [Line Items]		
Long-term debt	3,042	3,663
First Lien Term Loans		
Fair Value, Balance Sheet Grouping, Financial Statement Captions [Line Items]		
Long-term debt	3,155	3,167
First Lien Notes		
Fair Value, Balance Sheet Grouping, Financial Statement Captions [Line Items]		
Long-term debt	2,408	2,835
Reported Value Measurement [Member]		
Fair Value, Balance Sheet Grouping, Financial Statement Captions [Line Items]		
Long-term debt	10,975	11,571
Reported Value Measurement [Member] | Senior Unsecured Notes		
Fair Value, Balance Sheet Grouping, Financial Statement Captions [Line Items]		
Long-term debt	3,042	3,663
Reported Value Measurement [Member] | First Lien Term Loans		
Fair Value, Balance Sheet Grouping, Financial Statement Captions [Line Items]		
Long-term debt	3,155	3,167
Reported Value Measurement [Member] | First Lien Notes		
Fair Value, Balance Sheet Grouping, Financial Statement Captions [Line Items]		
Long-term debt	2,408	2,835
Reported Value Measurement [Member] | Project financing, notes payable and other		
Fair Value, Balance Sheet Grouping, Financial Statement Captions [Line Items]		
Long-term debt	[1] 419	817
Reported Value Measurement [Member] | CCFC Term Loan		
Fair Value, Balance Sheet Grouping, Financial Statement Captions [Line Items]		
Long-term debt	962	967
Reported Value Measurement [Member] | GPC Term Loan [Member]		

Fair Value, Balance Sheet Grouping, Financial Statement Captions [Line Items]		
Long-term debt	867	0
Reported Value Measurement [Member] | Revolving facilities		
Fair Value, Balance Sheet Grouping, Financial Statement Captions [Line Items]		
Long-term debt	122	122
Level 2 | Senior Unsecured Notes		
Fair Value, Balance Sheet Grouping, Financial Statement Captions [Line Items]		
Long-term debt	3,027	3,764
Level 2 | First Lien Term Loans		
Fair Value, Balance Sheet Grouping, Financial Statement Captions [Line Items]		
Long-term debt	3,081	3,238
Level 2 | First Lien Notes		
Fair Value, Balance Sheet Grouping, Financial Statement Captions [Line Items]		
Long-term debt	2,404	2,929
Level 2 | CCFC Term Loan		
Fair Value, Balance Sheet Grouping, Financial Statement Captions [Line Items]		
Long-term debt	941	982
Level 2 | GPC Term Loan [Member]		
Fair Value, Balance Sheet Grouping, Financial Statement Captions [Line Items]		
Long-term debt	900	0
Level 3 | Project financing, notes payable and other		
Fair Value, Balance Sheet Grouping, Financial Statement Captions [Line Items]		
Long-term debt	[1] 426	822
Level 3 | Revolving facilities		
Fair Value, Balance Sheet Grouping, Financial Statement Captions [Line Items]		
Long-term debt	$ 122	$ 122

[1] Excludes an agreement that is accounted for as a failed sale-leaseback transaction under U.S. GAAP.

Assets and Liabilities with Recurring Fair Value Measurements Fair Value Hierarchy (Details) - USD ($) $ in Millions		Jun. 30, 2020	Dec. 31, 2019
Fair Value, Assets and Liabilities Measured on Recurring and Nonrecurring Basis [Line Items]			
Cash equivalents	[1]	$ 417	$ 784
Derivative Asset	[2]	449	402
Effect of Netting and Allocation of Collateral	[3],[4]	(1,330)	(1,021)
Total assets		866	1,186
Derivative Liability	[2]	364	288
Effect of Netting and Allocation of Collateral, Liability	[3],[4]	(1,337)	(1,135)
Total Liabilities		364	288
Level 1			
Fair Value, Assets and Liabilities Measured on Recurring and Nonrecurring Basis [Line Items]			
Cash equivalents	[1]	417	784
Effect of Netting and Allocation of Collateral	[3],[4]	(991)	(872)
Total assets		417	784
Effect of Netting and Allocation of Collateral, Liability	[3],[4]	(1,001)	(984)
Total Liabilities		0	0
Level 2			
Fair Value, Assets and Liabilities Measured on Recurring and Nonrecurring Basis [Line Items]			
Cash equivalents	[1]	0	0
Effect of Netting and Allocation of Collateral	[3],[4]	(299)	(131)
Total assets		125	126
Effect of Netting and Allocation of Collateral, Liability	[3],[4]	(296)	(133)
Total Liabilities		286	183
Level 3			
Fair Value, Assets and Liabilities Measured on Recurring and Nonrecurring Basis [Line Items]			
Cash equivalents	[1]	0	0
Effect of Netting and Allocation of Collateral	[3],[4]	(40)	(18)
Total assets		324	276
Effect of Netting and Allocation of Collateral, Liability	[3],[4]	(40)	(18)
Total Liabilities		78	105
Commodity exchange traded derivatives contracts			
Fair Value, Assets and Liabilities Measured on Recurring and Nonrecurring Basis [Line Items]			

Derivative Asset		991	872
Derivative Liability		1,001	984
Commodity exchange traded derivatives contracts | Level 1			
Fair Value, Assets and Liabilities Measured on Recurring and Nonrecurring Basis [Line Items]			
Derivative Asset		991	872
Derivative Liability		1,001	984
Commodity exchange traded derivatives contracts | Level 2			
Fair Value, Assets and Liabilities Measured on Recurring and Nonrecurring Basis [Line Items]			
Derivative Asset		0	0
Derivative Liability		0	0
Commodity exchange traded derivatives contracts | Level 3			
Fair Value, Assets and Liabilities Measured on Recurring and Nonrecurring Basis [Line Items]			
Derivative Asset		0	0
Derivative Liability		0	0
Commodity forward contracts			
Fair Value, Assets and Liabilities Measured on Recurring and Nonrecurring Basis [Line Items]			
Derivative Asset	[5]	788	539
Derivative Liability	[5]	539	408
Commodity forward contracts | Level 1			
Fair Value, Assets and Liabilities Measured on Recurring and Nonrecurring Basis [Line Items]			
Derivative Asset	[5]	0	0
Derivative Liability	[5]	0	0
Commodity forward contracts | Level 2			
Fair Value, Assets and Liabilities Measured on Recurring and Nonrecurring Basis [Line Items]			
Derivative Asset	[5]	424	245
Derivative Liability	[5]	421	285
Commodity forward contracts | Level 3			
Fair Value, Assets and Liabilities Measured on Recurring and Nonrecurring Basis [Line Items]			
Derivative Asset	[5]	364	294
Derivative Liability	[5]	118	123
Interest rate hedging instruments			
Fair Value, Assets and Liabilities Measured on Recurring and Nonrecurring Basis [Line Items]			
Derivative Asset		0	12
Derivative Liability		161	31
Interest rate hedging instruments | Level 1			

Fair Value, Assets and Liabilities Measured on Recurring and Nonrecurring Basis [Line Items]		
Derivative Asset	0	0
Derivative Liability	0	0
Interest rate hedging instruments | Level 2		
Fair Value, Assets and Liabilities Measured on Recurring and Nonrecurring Basis [Line Items]		
Derivative Asset	0	12
Derivative Liability	161	31
Interest rate hedging instruments | Level 3		
Fair Value, Assets and Liabilities Measured on Recurring and Nonrecurring Basis [Line Items]		
Derivative Asset	0	0
Derivative Liability	$ 0	$ 0

[1] At June 30, 2020 and December 31, 2019, we had cash equivalents of $190 million and $573 million included in cash and cash equivalents and $227 million and $211 million included in restricted cash, respectively.

[2] At June 30, 2020 and December 31, 2019, we had $260 million and $191 million, respectively, of collateral under master netting arrangements that were not offset against our derivative instruments on the Consolidated Condensed Balance Sheets primarily related to initial margin requirements.

[3] Cash collateral posted with (received from) counterparties allocated to level 1, level 2 and level 3 derivative instruments totaled $10 million, $(3) million and nil, respectively, at June 30, 2020. Cash collateral posted with (received from) counterparties allocated to level 1, level 2 and level 3 derivative instruments totaled $112 million, $2 million and nil, respectively, at December 31, 2019.

[4] We offset fair value amounts recognized for derivative instruments executed with the same counterparty under a master netting arrangement for financial statement presentation; therefore, amounts recognized for the right to reclaim, or the obligation to return, cash collateral are presented net with the corresponding derivative instrument fair values. See Note 6 for further discussion of our derivative instruments subject to master netting arrangements.

[5] Includes OTC swaps and options.

Assets and Liabilities with Recurring Fair Value Measurements Quantitative Info on Level 3 (Details) - USD ($)		Jun. 30, 2020	Dec. 31, 2019
Fair Value Measurements Inputs and Valuation Techniques			
Derivative, fair value, net asset (liability)	[1]	$ 85,000,000	$ 114,000,000
Power Contracts			
Fair Value Measurements Inputs and Valuation Techniques			
Derivative, fair value, net asset (liability)	[2]	206,000,000	158,000,000
Power Contracts | Minimum [Member]			
Fair Value Measurements Inputs and Valuation Techniques			
Fair value inputs quantitative information		3.18	4.85
Power Contracts | Maximum			
Fair Value Measurements Inputs and Valuation Techniques			
Fair value inputs quantitative information		175.51	184.15
Power Contracts | Average			
Fair Value Measurements Inputs and Valuation Techniques			
Fair value inputs quantitative information	[3]	28.97	
Power Congestion Products			
Fair Value Measurements Inputs and Valuation Techniques			
Derivative, fair value, net asset (liability)		6,000,000	17,000,000
Power Congestion Products | Minimum [Member]			
Fair Value Measurements Inputs and Valuation Techniques			
Fair value inputs quantitative information		(6.48)	(10.32)
Power Congestion Products | Maximum			
Fair Value Measurements Inputs and Valuation Techniques			
Fair value inputs quantitative information		11.88	20.00
Power Congestion Products | Average			
Fair Value Measurements Inputs and Valuation Techniques			
Fair value inputs quantitative information	[3]	1.20	
Natural Gas Contracts			
Fair Value Measurements Inputs and Valuation Techniques			
Derivative, fair value, net asset (liability)		9,000,000	(20,000,000)
Natural Gas Contracts | Minimum [Member]			
Fair Value Measurements Inputs and Valuation Techniques			
Fair value inputs quantitative information		1.33	1.73
Natural Gas Contracts | Maximum			
Fair Value Measurements Inputs and Valuation Techniques			
Fair value inputs quantitative information		4.62	$ 6.45
Natural Gas Contracts | Average			
Fair Value Measurements Inputs and Valuation Techniques			

Fair value inputs quantitative information	[3] $ 2.82

[1] At June 30, 2020 and December 31, 2019, we had $260 million and $191 million, respectively, of collateral under master netting arrangements that were not offset against our derivative instruments on the Consolidated Condensed Balance Sheets primarily related to initial margin requirements.

[2] Power contracts include power and heat rate instruments classified as level 3 in the fair value hierarchy.

[3] (2)Amount represents the arithmetic average of the significant unobservable input based on the range disclosed.

Assets and Liabilities with Recurring Fair Value Measurements (Textuals) (Details) - USD ($) $ in Millions		3 Months Ended		6 Months Ended			
		Jun. 30, 2020	Jun. 30, 2019	Jun. 30, 2020	Jun. 30, 2019	Dec. 31, 2019	Mar. 31, 2019
Fair Value Measurement [Domain]							
Fair Value Disclosures [Abstract]							
Cash and Cash Equivalents, at Carrying Value		$ 190		$ 190		$ 573	
Restricted Cash and Cash Equivalents		227		227		211	
Fair Value, Net Derivative Asset (Liability) Measured on Recurring Basis with Unobservable Inputs		249	$ 105	171	$ (8)		
Included in operating revenues	[1]	37	152	106	197		
Fair Value, Assets Measured with Unobservable Inputs on Recurring Basis, Gain (Loss) Included In Fuel And Purchased Energy Expense	[2]	3	1	(1)	2		
Amount of Change in Collateral of Financial Instruments Classified as Derivative Asset (Liability)		0	(1)	0	1		
Fair Value, Net Derivative Asset (Liability) Measured on Recurring Basis, Unobservable Inputs Reconciliation, Purchases		1	1	1	3		
Fair Value, Net Derivative Asset (Liability) Measured on Recurring Basis, Unobservable Inputs Reconciliation, Issues		0	(1)	0	(1)		
Fair Value, Measurement with Unobservable Inputs Reconciliation, Recurring Basis, Asset, Settlements		(49)	(35)	(36)	28		
Fair Value, Liabilities, Level 1 to Level 2 Transfers, Amount							$ 0
Fair Value, Liabilities, Level 2 to Level 1 Transfers, Amount		0		0			$ 0
Transfers into level 3	[3],[4]	10	6	11	7		
Transfers out of Level 3	[3],[5]	(5)	(1)	(6)	(2)		
Fair Value, Net Derivative Asset (Liability) Measured on Recurring Basis with Unobservable Inputs		246	227	246	227		
Fair Value, Assets Measured on Recurring Basis, Change in Unrealized Gain (Loss)		40	$ 153	105	$ 199		
Cash and Cash Equivalents, at Carrying Value		677		677		1,131	
Restricted Cash and Cash Equivalents		241		241		345	
Level 1							
Fair Value Disclosures [Abstract]							
Derivative, Collateral, Right to Reclaim Cash, Net		10		10		112	
Level 2							
Fair Value Disclosures [Abstract]							
Derivative, Collateral, Right to Reclaim Cash, Net		(3)		(3)		2	
Level 3							
Fair Value Disclosures [Abstract]							
Derivative, Collateral, Right to Reclaim Cash, Net		$ 0		$ 0		$ 0	

[1] For power contracts and other power-related products, included on our Consolidated Condensed Statements of Operations.

[2] For natural gas and power contracts, swaps and options, included on our Consolidated Condensed Statements of Operations.

[3] (2)Amount represents the arithmetic average of the significant unobservable input based on the range disclosed.

[4] We had $10 million and $6 million in gains transferred out of level 2 into level 3 for the three months ended June 30, 2020 and 2019, respectively, and $11 million and $7 million in gains transferred out of level 2 into level 3 for the six months ended June 30, 2020 and 2019, respectively, due to changes in market liquidity in various power markets.

[5] We had $5 million and $1 million in gains transferred out of level 3 into level 2 for the three months ended June 30, 2020 and 2019, respectively, and $6 million and $2 million in gains transferred out of level 3 into level 2 for the six months ended June 30, 2020 and 2019, respectively, due to changes in market liquidity in various power markets.

Derivative Instruments - Notional Amount of Derivative Instruments (Details) $ in Billions	6 Months Ended Jun. 30, 2020 USD ($) MMBTU MWh t	12 Months Ended Dec. 31, 2019 USD ($) MMBTU MWh t
Derivative [Line Items]		
Derivative, amount of hedged item	[1] $ 2.4	
Power		
Derivative [Line Items]		
Derivative, Nonmonetary Notional Amount, Energy Measure | MWh	242	184
Natural Gas Contracts		
Derivative [Line Items]		
Derivative, Nonmonetary Notional Amount, Energy Measure | MMBTU	1,165	1,063
Environmental credits		
Derivative [Line Items]		
Derivative, Nonmonetary Notional Amount, Mass | t	36	26
Interest rate hedging instruments		
Derivative [Line Items]		
Derivative, notional amount	[1] $ 7.0	$ 4.8

[1] (1)

Derivative Instruments - Cash Flow Derivatives (Details) - USD ($) $ in Millions		Jun. 30, 2020	Dec. 31, 2019
Derivatives, Fair Value [Line Items]			
Derivative Asset	[1]	$ 449	$ 402
Derivative Liability	[1]	364	288
Interest rate hedging instruments			
Derivatives, Fair Value [Line Items]			
Derivative Asset		0	12
Derivative Liability		161	31
Designated as Hedging Instrument			
Derivatives, Fair Value [Line Items]			
Derivative Asset		0	12
Derivative Liability		119	29
Designated as Hedging Instrument | Interest rate hedging instruments			
Derivatives, Fair Value [Line Items]			
Derivative Asset		0	12
Derivative Liability		119	29
Not Designated as Hedging Instrument			
Derivatives, Fair Value [Line Items]			
Derivative Asset		449	390
Derivative Liability		245	259
Not Designated as Hedging Instrument | Interest rate hedging instruments			
Derivatives, Fair Value [Line Items]			
Derivative Asset		0	0
Derivative Liability		42	2
Not Designated as Hedging Instrument | Energy Related Derivative			
Derivatives, Fair Value [Line Items]			
Derivative Asset		449	390
Derivative Liability		$ 203	$ 257

[1] At June 30, 2020 and December 31, 2019, we had $260 million and $191 million, respectively, of collateral under master netting arrangements that were not offset against our derivative instruments on the Consolidated Condensed Balance Sheets primarily related to initial margin requirements.

Derivative Instruments (Detail 3) (Details) - USD ($) $ in Millions	Jun. 30, 2020		Dec. 31, 2019	
Derivative Instruments Subject to Master Netting Arrangement [Line Items]				
Derivative Asset, Fair Value, Gross Asset Including Not Subject to Master Netting Arrangement	$ 78			
Derivative assets, current	199	[1] [2]	$ 156	[3]
Derivative Asset, Noncurrent	250	[1] [2]	246	[3]
Long-term derivative liabilities	(196)	[1] [2]	(63)	[3]
Derivative Liability, Fair Value, Gross Liability Including Not Subject to Master Netting Arrangement			0	
Derivative Liability, Collateral, Right to Reclaim Cash, Offset	7		114	
Derivative Liability, Current	(168)	[1] [2]	(225)	[3]
Derivative Liability	(364)	[1]	(288)	
Derivative, Collateral, Right to Reclaim Cash	260		191	
Derivative, Fair Value, Net	85	[1]	114	
Derivative Asset	449	[1]	402	
Derivative Financial Instruments, Assets [Member]				
Derivative Instruments Subject to Master Netting Arrangement [Line Items]				
Derivative Asset, Fair Value, Gross Asset Including Not Subject to Master Netting Arrangement	1,779		1,423	
Derivative Asset, Collateral, Obligation to Return Cash, Offset	(1,330)		(1,021)	
Commodity exchange traded derivatives contracts				
Derivative Instruments Subject to Master Netting Arrangement [Line Items]				
Derivative assets, current	0	[1]	0	
Derivative Asset, Noncurrent	0	[1]	0	
Long-term derivative liabilities	0	[1]	0	
Derivative Liability, Current	0	[1]	0	
Derivative Liability	(1,001)		(984)	
Derivative Asset	991		872	
Commodity forward contracts				
Derivative Instruments Subject to Master Netting Arrangement [Line Items]				
Derivative assets, current	199	[1]	154	
Derivative Asset, Noncurrent	250	[1]	236	
Long-term derivative liabilities	(84)	[1]	(45)	
Derivative Liability, Current	(119)	[1]	(212)	
Derivative Liability	(539)	[4]	(408)	
Derivative Asset	788	[4]	539	
Interest rate hedging instruments				
Derivative Instruments Subject to Master Netting Arrangement [Line Items]				

Derivative assets, current	[1] 0		2	
Derivative Asset, Noncurrent	[1] 0		10	
Long-term derivative liabilities	[1] (112)		(18)	
Derivative Liability, Current	[1] (49)		(13)	
Derivative Liability	(161)		(31)	
Derivative Asset	0		12	
Level 3				
Derivative Instruments Subject to Master Netting Arrangement [Line Items]				
Margin/Cash (Received) Posted Subject to Master Netting Arrangement	0		0	
Level 3 | Commodity exchange traded derivatives contracts				
Derivative Instruments Subject to Master Netting Arrangement [Line Items]				
Derivative Liability	0		0	
Derivative Asset	0		0	
Level 3 | Commodity forward contracts				
Derivative Instruments Subject to Master Netting Arrangement [Line Items]				
Derivative Liability	[4] (118)		(123)	
Derivative Asset	[4] 364		294	
Level 3 | Interest rate hedging instruments				
Derivative Instruments Subject to Master Netting Arrangement [Line Items]				
Derivative Liability	0		0	
Derivative Asset	0		0	
Derivative Assets, Current [Member]				
Derivative Instruments Subject to Master Netting Arrangement [Line Items]				
Derivative Asset, Fair Value, Gross Asset Including Not Subject to Master Netting Arrangement	1,198	[2]	991	[3]
Derivative Asset, Collateral, Obligation to Return Cash, Offset	(999)	[2]	(835)	[3]
Derivative Assets, Current [Member] | Commodity exchange traded derivatives contracts				
Derivative Instruments Subject to Master Netting Arrangement [Line Items]				
Derivative Asset, Fair Value, Gross Asset Including Not Subject to Master Netting Arrangement	758		727	
Derivative Asset, Collateral, Obligation to Return Cash, Offset	(758)		(727)	
Derivative Assets, Current [Member] | Commodity forward contracts				
Derivative Instruments Subject to Master Netting Arrangement [Line Items]				
Derivative Asset, Fair Value, Gross Asset Including Not Subject to Master Netting Arrangement	440		262	
Derivative Asset, Collateral, Obligation to Return Cash, Offset	(241)		(108)	
Derivative Assets, Current [Member] | Interest rate hedging instruments				
Derivative Instruments Subject to Master Netting Arrangement [Line Items]				
Derivative Asset, Fair Value, Gross Asset Including Not Subject to Master Netting Arrangement	0		2	
Derivative Asset, Collateral, Obligation to Return Cash, Offset	0		0	
Derivative Assets, Non-current [Member]				

Derivative Instruments Subject to Master Netting Arrangement [Line Items]				
Derivative Asset, Fair Value, Gross Asset Including Not Subject to Master Netting Arrangement	581	[2]	432	[3]
Derivative Asset, Collateral, Obligation to Return Cash, Offset	(331)	[2]	(186)	[3]
Derivative Assets, Non-current [Member] | Commodity exchange traded derivatives contracts				
Derivative Instruments Subject to Master Netting Arrangement [Line Items]				
Derivative Asset, Fair Value, Gross Asset Including Not Subject to Master Netting Arrangement	233		145	
Derivative Asset, Collateral, Obligation to Return Cash, Offset	(233)		(145)	
Derivative Assets, Non-current [Member] | Commodity forward contracts				
Derivative Instruments Subject to Master Netting Arrangement [Line Items]				
Derivative Asset, Fair Value, Gross Asset Including Not Subject to Master Netting Arrangement	348		277	
Derivative Asset, Collateral, Obligation to Return Cash, Offset	(98)		(41)	
Derivative Assets, Non-current [Member] | Interest rate hedging instruments				
Derivative Instruments Subject to Master Netting Arrangement [Line Items]				
Derivative Asset, Fair Value, Gross Asset Including Not Subject to Master Netting Arrangement	0		10	
Derivative Asset, Collateral, Obligation to Return Cash, Offset	0		0	
Derivative Liabilities, Current [Member]				
Derivative Instruments Subject to Master Netting Arrangement [Line Items]				
Derivative Liability, Fair Value, Gross Liability Including Not Subject to Master Netting Arrangement	(1,139)	[2]	(1,164)	[3]
Derivative Liability, Collateral, Right to Reclaim Cash, Offset	971	[2]	939	[3]
Derivative Liabilities, Current [Member] | Commodity exchange traded derivatives contracts				
Derivative Instruments Subject to Master Netting Arrangement [Line Items]				
Derivative Liability, Fair Value, Gross Liability Including Not Subject to Master Netting Arrangement	(733)		(830)	
Derivative Liability, Collateral, Right to Reclaim Cash, Offset	733		830	
Derivative Liabilities, Current [Member] | Commodity forward contracts				
Derivative Instruments Subject to Master Netting Arrangement [Line Items]				
Derivative Liability, Fair Value, Gross Liability Including Not Subject to Master Netting Arrangement	(357)		(321)	
Derivative Liability, Collateral, Right to Reclaim Cash, Offset	238		109	
Derivative Liabilities, Current [Member] | Interest rate hedging instruments				
Derivative Instruments Subject to Master Netting Arrangement [Line Items]				
Derivative Liability, Fair Value, Gross Liability Including Not Subject to Master Netting Arrangement	(49)		(13)	
Derivative Liability, Collateral, Right to Reclaim Cash, Offset	0		0	
Derivative Liabilities, Non-current [Member]				
Derivative Instruments Subject to Master Netting Arrangement [Line Items]				
Derivative Liability, Fair Value, Gross Liability Including Not Subject to Master Netting Arrangement	(562)	[2]	(259)	[3]

Derivative Liability, Collateral, Right to Reclaim Cash, Offset	366 [2]	196 [3]
Derivative Liabilities, Non-current [Member] | Commodity exchange traded derivatives contracts		
Derivative Instruments Subject to Master Netting Arrangement [Line Items]		
Derivative Liability, Fair Value, Gross Liability Including Not Subject to Master Netting Arrangement	(268)	(154)
Derivative Liability, Collateral, Right to Reclaim Cash, Offset	268	154
Derivative Liabilities, Non-current [Member] | Commodity forward contracts		
Derivative Instruments Subject to Master Netting Arrangement [Line Items]		
Derivative Liability, Fair Value, Gross Liability Including Not Subject to Master Netting Arrangement	(182)	(87)
Derivative Liability, Collateral, Right to Reclaim Cash, Offset	98	42
Derivative Liabilities, Non-current [Member] | Interest rate hedging instruments		
Derivative Instruments Subject to Master Netting Arrangement [Line Items]		
Derivative Liability, Fair Value, Gross Liability Including Not Subject to Master Netting Arrangement	(112)	(18)
Derivative Liability, Collateral, Right to Reclaim Cash, Offset	0	0
Derivative Financial Instruments, Liabilities [Member]		
Derivative Instruments Subject to Master Netting Arrangement [Line Items]		
Derivative Liability, Fair Value, Gross Liability Including Not Subject to Master Netting Arrangement	(1,701)	(1,423)
Derivative Liability, Collateral, Right to Reclaim Cash, Offset	$ 1,337	$ 1,135

[1] At June 30, 2020 and December 31, 2019, we had $260 million and $191 million, respectively, of collateral under master netting arrangements that were not offset against our derivative instruments on the Consolidated Condensed Balance Sheets primarily related to initial margin requirements.

[2] At June 30, 2020, current and long-term derivative assets are shown net of collateral of $(28) million and $(9) million, respectively, and current and long-term derivative liabilities are shown net of collateral of $1 million and $43 million, respectively.

[3] At December 31, 2019, current and long-term derivative assets are shown net of collateral of $(4) million and $(4) million, respectively, and current and long-term derivative liabilities are shown net of collateral of $108 million and $14 million, respectively.

[4] Includes OTC swaps and options.

Derivative Instruments (Details 4) (Details) - USD ($) $ in Millions		3 Months Ended		6 Months Ended	
		Jun. 30, 2020	Jun. 30, 2019	Jun. 30, 2020	Jun. 30, 2019
Summary of Derivative Instruments by Risk Exposure [Abstract]					
Gain (Loss) on Derivative Instruments, Net, Pretax	[1]	$ 39	$ 244	$ 213	$ 400
Gain (Loss) on Sale of Derivatives	[2],[3]	18	58	15	169
Mark-to-market gain (loss)	[4]	21	186	198	231
Sales [Member]					
Summary of Derivative Instruments by Risk Exposure [Abstract]					
Gain (Loss) on Derivative Instruments, Net, Pretax	[1],[5],[6]	34	541	541	578
Cost of Sales [Member]					
Summary of Derivative Instruments by Risk Exposure [Abstract]					
Gain (Loss) on Derivative Instruments, Net, Pretax	[1],[5],[6]	37	(296)	(272)	(176)
Interest Expense [Member]					
Summary of Derivative Instruments by Risk Exposure [Abstract]					
Gain (Loss) on Derivative Instruments, Net, Pretax	[1]	(32)	(1)	(56)	(2)
Interest rate hedging instruments					
Summary of Derivative Instruments by Risk Exposure [Abstract]					
Gain (Loss) on Sale of Derivatives	[2],[3],[7]	(18)	0	(18)	0
Mark-to-market gain (loss)	[4]	(14)	(1)	(38)	(2)
Energy Related Derivative					
Summary of Derivative Instruments by Risk Exposure [Abstract]					
Gain (Loss) on Sale of Derivatives	[2],[3]	36	58	33	169
Mark-to-market gain (loss)	[4]	$ 35	$ 187	$ 236	$ 233

[1] In addition to changes in market value on derivatives not designated as hedges, changes in mark-to-market gain (loss) also includes adjustments to reflect changes in credit default risk exposure.

[2] Does not include the realized value associated with derivative instruments that settle through physical delivery.

[3] Includes amortization of acquisition date fair value of financial derivative activity related to the acquisition of Champion Energy and Calpine Solutions.

[4] In addition to changes in market value on derivatives not designated as hedges, changes in mark-to-market gain (loss) also includes adjustments to reflect changes in credit default risk exposure.

[5] Does not include the realized value associated with derivative instruments that settle through physical delivery.

[6] Includes amortization of acquisition date fair value of financial derivative activity related to the acquisition of Champion Energy and Calpine Solutions.

[7] Includes costs associated with the termination of de-designated interest rate hedging instruments recorded to interest expense related to our Steamboat project debt that was repaid in June 2020.

Derivative Instruments (Details 5) (Details) - USD ($) $ in Millions		3 Months Ended		6 Months Ended	
		Jun. 30, 2020	Jun. 30, 2019	Jun. 30, 2020	Jun. 30, 2019
Derivative Instruments, Gain (Loss) [Line Items]					
Reclassification adjustment for loss on cash flow hedges realized in net income (loss)		$ (25)	$ 3	$ (31)	$ 5
Interest rate hedging instruments					
Derivative Instruments, Gain (Loss) [Line Items]					
Other Comprehensive Income (Loss), Derivatives Qualifying as Hedges, before Tax	[1]	3	(32)	(101)	(57)
Reclassification adjustment for loss on cash flow hedges realized in net income (loss)	[1],[2],[3]	$ (25)	$ 3	$ (31)	$ 5

[1] We recorded an income tax expense of $1 million and an income tax (benefit) of $(1) million for the three months ended June 30, 2020 and 2019, respectively, and income tax (benefit) of $(2) million and $(1) million for the six months ended June 30, 2020 and 2019, respectively, in AOCI related to our cash flow hedging activities.

[2] Cumulative cash flow hedge losses attributable to Calpine, net of tax, remaining in AOCI were $174 million and $72 million at June 30, 2020 and December 31, 2019, respectively. Cumulative cash flow hedge losses attributable to the noncontrolling interest, net of tax, remaining in AOCI were nil and $3 million at June 30, 2020 and December 31, 2019, respectively.

[3] Includes losses of $16 million and nil that were reclassified from AOCI to interest expense for the three months ended June 30, 2020 and 2019, respectively, and losses of $16 million and $1 million that were reclassified from AOCI to interest expense for the six months ended June 30, 2020 and 2019, respectively,where the hedged transactions became probable of not occurring.

Derivative Instruments (Textuals) (Details) - USD ($) $ in Millions	3 Months Ended		6 Months Ended		
	Jun. 30, 2020	Jun. 30, 2019	Jun. 30, 2020	Jun. 30, 2019	Dec. 31, 2019
Derivatives, Fair Value [Line Items]					
Current Derivatives Assets, net of Collateral	$ (28)		$ (28)		$ (4)
Long-Term Derivative Assets, net of Collateral	(9)		(9)		(4)
Current Derivative Liabilities, net of Collateral	1		1		108
Long-term Derivative Liabilities, net of Collateral	43		43		14
Derivative, Collateral, Right to Reclaim Cash	260		260		191
Other Comprehensive Income (Loss), Derivatives Qualifying as Hedges, Tax	(1)	$ 1	$ 2	$ 1	
Summary of Derivative Instruments [Abstract]					
Maximum length of time hedging using interest rate derivative instruments			7 years		
Derivative, Net Liability Position, Aggregate Fair Value	120		$ 120		
Collateral Already Posted, Aggregate Fair Value	37		37		
Gain (Loss) on Discontinuation of Cash Flow Hedge Due to Forecasted Transaction Probable of Not Occurring, Net	16	$ 0	16	$ 1	
Cash Flow Hedge Gain (Loss) to be Reclassified within Twelve Months			57		
Additional Collateral, Aggregate Fair Value	6		6		
Parent					
Derivatives, Fair Value [Line Items]					
Accumulated Other Comprehensive Income (Loss), Cumulative Changes in Net Gain (Loss) from Cash Flow Hedges, Effect Net of Tax	174		174		72
Noncontrolling Interest					
Derivatives, Fair Value [Line Items]					
Accumulated Other Comprehensive Income (Loss), Cumulative Changes in Net Gain (Loss) from Cash Flow Hedges, Effect Net of Tax	$ 0		$ 0		$ 3

Use of Collateral (Details) - USD ($) $ in Millions		Jun. 30, 2020	Dec. 31, 2019
Financial Instruments Owned and Pledged as Collateral [Line Items]			
Margin deposits	[1]	$ 290	$ 432
Natural gas and power prepayments		31	29
Total margin deposits and natural gas and power prepayments with our counterparties	[2]	321	461
Letters of credit issued		877	906
First priority liens under power and natural gas agreements		20	42
First priority liens under interest rate hedging instruments		168	31
Total letters of credit and first priority liens with our counterparties		1,065	979
Margin deposits held by us posted by our counterparties	[1],[3]	23	127
Letters of credit posted with us by our counterparties		212	25
Total margin deposits and letters of credit posted with us by our counterparties		235	152
Current and Non-current Derivative Assets and Liabilities			
Financial Instruments Owned and Pledged as Collateral [Line Items]			
Total margin deposits and natural gas and power prepayments with our counterparties	[2]	19	117
Margin deposits held by us posted by our counterparties		12	3
Other Current Liabilities			
Financial Instruments Owned and Pledged as Collateral [Line Items]			
Margin deposits held by us posted by our counterparties		11	93
Prepaid Expenses and Other Current Assets			
Financial Instruments Owned and Pledged as Collateral [Line Items]			
Total margin deposits and natural gas and power prepayments with our counterparties	[2]	294	336
Other Assets			
Financial Instruments Owned and Pledged as Collateral [Line Items]			
Total margin deposits and natural gas and power prepayments with our counterparties	[2]	8	8
Other Noncurrent Liabilities			
Financial Instruments Owned and Pledged as Collateral [Line Items]			
Margin deposits held by us posted by our counterparties		$ 0	$ 31

[1] We offset fair value amounts recognized for derivative instruments executed with the same counterparty under a master netting arrangement for financial statement presentation; therefore, amounts recognized for the right to reclaim, or the obligation to return, cash collateral are presented net with the corresponding derivative instrument fair values. See Note 6 for further discussion of our derivative instruments subject to master netting arrangements.

[2] At June 30, 2020 and December 31, 2019, $19 million and $117 million, respectively, were included in current and long-term derivative assets and liabilities, $294 million and $336 million, respectively, were included in margin deposits and other prepaid expense and $8 million and $8 million, respectively, were included in other assets on our Consolidated Condensed Balance Sheets.

[3] At June 30, 2020 and December 31, 2019, $12 million and $3 million, respectively, were included in current and long-term derivative assets and liabilities, $11 million and $93 million, respectively, were

included in other current liabilities and nil and $31 million, respectively, were included in other long-term liabilities on our Consolidated Condensed Balance Sheets.

Income Taxes (Income Tax Expense (Benefit)) (Details) - USD ($) $ in Millions	3 Months Ended		6 Months Ended	
	Jun. 30, 2020	Jun. 30, 2019	Jun. 30, 2020	Jun. 30, 2019
Income Tax Disclosure [Abstract]				
Deferred Tax Assets, Net	$ 1,500		$ 1,500	
Income tax expense (benefit)	$ (31)	$ 9	$ 15	$ 19
Effective income tax rate, continuing operations	(23.00%)	3.00%	5.00%	4.00%

Income Taxes - Narrative (Details) $ in Millions	3 Months Ended Jun. 30, 2020 USD ($)
Income Tax Disclosure [Abstract]	
Deferred Tax Assets, Net	$ 1,500
Valuation Allowance, Deferred Tax Asset, Increase (Decrease), Amount	$ 77

Commitments and Contingencies Commitments and Contingencies (Details) $ in Millions	Jun. 30, 2020 USD ($)
Commitments and Contingencies Disclosure [Abstract]	
Guarantor obligations, current carrying value	$ 0

Related Party Transactions - Narrative (Details) - USD ($) $ in Millions	3 Months Ended		6 Months Ended		
	Jun. 30, 2020	Jun. 30, 2019	Jun. 30, 2020	Jun. 30, 2019	Dec. 31, 2019
Related Party Transactions [Abstract]					
Continuing involvement with derecognized transferred financial assets, amount outstanding	$ 195		$ 195		$ 222
Notes receivable, related parties, current	41		41		$ 38
Trade receivables sold			1,000	$ 1,100	
Cash flows between transferor and transferee, proceeds from new transfers			997	1,100	
Revenue from related parties	14	$ 17	27	37	
Related party transaction, purchases from related party	$ 3	$ 4	$ 6	$ 7	

Segment Information (Details) - USD ($) $ in Millions	3 Months Ended				6 Months Ended			
	Jun. 30, 2020		Jun. 30, 2019		Jun. 30, 2020		Jun. 30, 2019	
Revenues from External Customers and Long-Lived Assets [Line Items]								
Total operating revenues	$ 1,744	[1]	$ 2,599	[1]	$ 4,036	[2]	$ 5,198	[2]
Commodity Margin	723		752		1,311		1,531	
Add: Mark-to-market commodity activity, net and other(2)	59	[3]	200	[3]	272	[4]	252	[4]
Operating and maintenance expense	266		245		506		484	
Depreciation and amortization expense	163		175		327		349	
General and other administrative expense	31		34		62		66	
Other operating expenses	14		19		31		38	
(Income) loss from unconsolidated investments in power plants	(4)		(5)		(4)		(11)	
Income from operations	312		444		661		802	
Interest expense	167		157		336		306	
Debt Extinguishment Costs and Other (Income) Expense, Net	13		8		17		27	
Income before income taxes	132		279		308		469	
Lease levelization	(22)		(19)		(40)		(35)	
Impairment losses	0		40		0		55	
West								
Revenues from External Customers and Long-Lived Assets [Line Items]								
Total operating revenues	470	[1]	649	[1]	1,175	[2]	1,331	[2]
Commodity Margin	269		251		503		515	
Add: Mark-to-market commodity activity, net and other(2)	67	[3]	58	[3]	121	[4]	114	[4]
Operating and maintenance expense	96		84		182		165	
Depreciation and amortization expense	56		60		112		133	
General and other administrative expense	6		5		14		12	
Other operating expenses	7		7		15		16	
(Income) loss from unconsolidated investments in power plants	0		0		0		0	
Income from operations	171		153		301		303	
Impairment losses			0				0	
Texas								
Revenues from External Customers and Long-Lived Assets [Line Items]								
Total operating revenues	620	[1]	899	[1]	1,270	[2]	1,642	[2]
Commodity Margin	172		173		285		335	
Add: Mark-to-market commodity activity, net and other(2)	(17)	[3]	240	[3]	84	[4]	284	[4]
Operating and maintenance expense	73		66		139		131	
Depreciation and amortization expense	50		54		100		99	
General and other administrative expense	13		15		24		27	
Other operating expenses	1		1		3		3	

(Income) loss from unconsolidated investments in power plants	0		0		0		0	
Income from operations	18		277		103		359	
Impairment losses			0				0	
East								
Revenues from External Customers and Long-Lived Assets [Line Items]								
Total operating revenues	244	[1]	646	[1]	786	[2]	1,335	[2]
Commodity Margin	193		235		343		500	
Add: Mark-to-market commodity activity, net and other(2)	(38)	[3]	94	[3]	44	[4]	107	[4]
Operating and maintenance expense	71		72		134		139	
Depreciation and amortization expense	45		48		91		91	
General and other administrative expense	8		10		16		19	
Other operating expenses	6		11		13		19	
(Income) loss from unconsolidated investments in power plants	(4)		(6)		(4)		(12)	
Income from operations	29		154		137		296	
Impairment losses			40				55	
Retail								
Revenues from External Customers and Long-Lived Assets [Line Items]								
Total operating revenues	720	[1]	1,082	[1]	1,628	[2]	2,080	[2]
Commodity Margin	89		93		180		181	
Add: Mark-to-market commodity activity, net and other(2)	56	[3]	(182)	[3]	40	[4]	(235)	[4]
Operating and maintenance expense	35		33		68		67	
Depreciation and amortization expense	12		13		24		26	
General and other administrative expense	4		4		8		8	
Other operating expenses	0		0		0		0	
(Income) loss from unconsolidated investments in power plants	0		1		0		1	
Income from operations	94		(140)		120		(156)	
Impairment losses			0				0	
Consolidation, Eliminations								
Revenues from External Customers and Long-Lived Assets [Line Items]								
Total operating revenues	(310)	[1]	(677)	[1]	(823)	[2]	(1,190)	[2]
Commodity Margin	0		0		0		0	
Add: Mark-to-market commodity activity, net and other(2)	(9)	[3]	(10)	[3]	(17)	[4]	(18)	[4]
Operating and maintenance expense	(9)		(10)		(17)		(18)	
Depreciation and amortization expense	0		0		0		0	
General and other administrative expense	0		0		0		0	
Other operating expenses	0		0		0		0	
(Income) loss from unconsolidated investments in power plants	0		0		0		0	
Income from operations	0		0		0		0	
Impairment losses			0				0	
Elimination | West								

Revenues from External Customers and Long-Lived Assets [Line Items]				
Total operating revenues	70	100	189	262
Elimination | Texas				
Revenues from External Customers and Long-Lived Assets [Line Items]				
Total operating revenues	214	348	432	559
Elimination | East				
Revenues from External Customers and Long-Lived Assets [Line Items]				
Total operating revenues	24	228	199	365
Elimination | Retail				
Revenues from External Customers and Long-Lived Assets [Line Items]				
Total operating revenues	2	1	3	4
Other Assets				
Revenues from External Customers and Long-Lived Assets [Line Items]				
Amortization of Intangible Assets	$ 9	$ 18	$ 25	$ 39

[1] Includes intersegment revenues of $70 million and $100 million in the West, $214 million and $348 million in Texas, $24 million and $228 million in the East and $2 million and $1 million in Retail for the three months ended June 30, 2020 and 2019, respectively.

[2] Includes intersegment revenues of $189 million and $262 million in the West, $432 million and $559 million in Texas, $199 million and $365 million in the East and $3 million and $4 million in Retail for the six months ended June 30, 2020 and 2019, respectively.

[3] Includes $(22) million and $(19) million of lease levelization and $9 million and $18 million of amortization expense for the three months ended June 30, 2020 and 2019, respectively.

[4] Includes $(40) million and $(35) million of lease levelization and $25 million and $39 million of amortization expense for the six months ended June 30, 2020 and 2019, respectively.