
UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-K

- ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the Fiscal Year ended December 31, 2021.
- 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. 001-15891

NRG Energy, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of incorporation or organization)

41-1724239
(I.R.S. Employer Identification No.)

910 Louisiana Street, Houston, Texas
(Address of principal executive offices)

77002
(Zip Code)

(713) 537-3000
(Registrant's telephone number, including area code)

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

<u>Title of Each Class</u>	<u>Trading Symbol(s)</u>	<u>Name of Exchange on Which Registered</u>
Common Stock, par value \$0.01	NRG	New York Stock Exchange

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

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. Yes No

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

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

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

Large Accelerated Filer Accelerated filer Non-accelerated filer Smaller reporting company
Emerging growth company

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

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C 7262(b)) by the registered public accounting firm that prepared or issued its audit report

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

As of the last business day of the most recently completed second fiscal quarter, the aggregate market value of the common stock of the registrant held by non-affiliates was approximately \$8,611,281,553 based on the closing sale price of \$40.30 as reported on the New York Stock Exchange.

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

<u>Class</u>	<u>Outstanding at February 24, 2022</u>
Common Stock, par value \$0.01 per share	242,153,239

Documents Incorporated by Reference:
Portions of the Registrant's definitive Proxy Statement relating to its 2022 Annual Meeting of Stockholders
are incorporated by reference into Part III of this Annual Report on Form 10-K

TABLE OF CONTENTS

<u>GLOSSARY OF TERMS</u>	<u>3</u>
<u>PART I</u>	<u>7</u>
<u>Item 1 — Business</u>	<u>7</u>
<u>Item 1A — Risk Factors</u>	<u>24</u>
<u>Item 1B — Unresolved Staff Comments</u>	<u>39</u>
<u>Item 2 — Properties</u>	<u>40</u>
<u>Item 3 — Legal Proceedings</u>	<u>41</u>
<u>Item 4 — Mine Safety Disclosures</u>	<u>41</u>
<u>PART II</u>	<u>42</u>
<u>Item 5 — Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities</u>	<u>42</u>
<u>Item 6 — Reserved</u>	<u>43</u>
<u>Item 7 — Management's Discussion and Analysis of Financial Condition and Results of Operations</u>	<u>44</u>
<u>Item 7A — Quantitative and Qualitative Disclosures About Market Risk</u>	<u>73</u>
<u>Item 8 — Financial Statements and Supplementary Data</u>	<u>76</u>
<u>Item 9 — Changes in and Disagreements With Accountants on Accounting and Financial Disclosure</u>	<u>76</u>
<u>Item 9A — Controls and Procedures</u>	<u>76</u>
<u>Item 9B — Other Information</u>	<u>79</u>
<u>Item 9C — Disclosure Regarding Foreign Jurisdictions that Prevent Inspections</u>	<u>79</u>
<u>PART III</u>	<u>80</u>
<u>Item 10 — Directors, Executive Officers and Corporate Governance</u>	<u>80</u>
<u>Item 11 — Executive Compensation</u>	<u>80</u>
<u>Item 12 — Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters</u>	<u>80</u>
<u>Item 13 — Certain Relationships and Related Transactions, and Director Independence</u>	<u>81</u>
<u>Item 14 — Principal Accounting Fees and Services</u>	<u>81</u>
<u>PART IV</u>	<u>82</u>
<u>Item 15 — Exhibits, Financial Statement Schedules</u>	<u>82</u>
<u>Item 16 — Form 10-K Summary</u>	<u>166</u>
<u>EXHIBIT INDEX</u>	<u>160</u>

Glossary of Terms

When the following terms and abbreviations appear in the text of this report, they have the meanings indicated below:

ACE	Affordable Clean Energy
Adjusted EBITDA	Adjusted earnings before interest, taxes, depreciation and amortization
ARO	Asset Retirement Obligation
ASC	The FASB Accounting Standards Codification, which the FASB established as the source of authoritative GAAP
ASU	Accounting Standards Updates – updates to the ASC
AUC	Alberta Utilities Commission
Average realized prices	Volume-weighted average power prices, net of average fuel costs and reflecting the impact of settled hedges
Bankruptcy Code	Chapter 11 of Title 11 of the U.S. Bankruptcy Code
Bankruptcy Court	United States Bankruptcy Court for the Southern District of Texas, Houston Division
Baseload	Units expected to satisfy minimum baseload requirements of the system and produce electricity at an essentially constant rate and run continuously
Brazos	Brazos Electric Power Cooperative, Inc.
BTU	British Thermal Unit
Business	NRG Business, which serves business customers
CAA	Clean Air Act
CAISO	California Independent System Operator
CARES Act	Coronavirus Aid, Relief, and Economic Security Act
Carlsbad	Carlsbad Energy Center, a 528 MW natural gas-fired project located in Carlsbad, CA
CCR	Coal Combustion Residuals
CDD	Cooling Degree Day
Centrica	Centrica plc
CES	Clean Energy Standard
CFTC	U.S. Commodity Futures Trading Commission
Cleco	Cleco Corporate Holdings LLC
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalents
ComEd	Commonwealth Edison
Company	NRG Energy, Inc.
Convertible Senior Notes	As of December 31, 2021, consists of NRG's \$575 million unsecured 2.75% Convertible Senior Notes due 2048
Cottonwood	Cottonwood Generating Station, a 1,177 MW natural gas-fueled plant
COVID-19	Coronavirus Disease 2019
CPP	Clean Power Plan
CPUC	California Public Utilities Commission
CWA	Clean Water Act
D.C. Circuit	U.S. Court of Appeals for the District of Columbia Circuit
Distributed Solar	Solar power projects that primarily sell power to customers for usage on site, or are interconnected to sell power into a local distribution grid
DSI	Dry Sorbent Injection
DSU	Deferred Stock Unit
Dual fuel customers	Customer that have both electricity and natural gas service with the Company
Economic gross margin	Sum of energy revenue, capacity revenue, retail revenue and other revenue, less cost of fuels and other cost of sales
EGU	Electric Generating Unit

EPA	U.S. Environmental Protection Agency
EPC	Engineering, Procurement and Construction
ERCOT	Electric Reliability Council of Texas, the Independent System Operator and the regional reliability coordinator of the various electricity systems within Texas
ESCO	Energy Service Companies
ESP	Electrostatic Precipitator
ESPP	NRG Energy, Inc. Amended and Restated Employee Stock Purchase Plan
Exchange Act	The Securities Exchange Act of 1934, as amended
FASB	Financial Accounting Standards Board
FERC	Federal Energy Regulatory Commission
FGD	Flue gas desulfurization
FPA	Federal Power Act
FTRs	Financial Transmission Rights
GAAP	Generally accepted accounting principles in the U.S.
GenOn	GenOn Energy, Inc.
GenOn Entities	GenOn and certain of its wholly owned subsidiaries, including GenOn Americas Generation, LLC, that filed voluntary petitions for relief under Chapter 11 of the Bankruptcy Code in the Bankruptcy Court on June 14, 2017
GHG	Greenhouse Gas
GIP	Global Infrastructure Partners
Green Mountain Energy	Green Mountain Energy Company
GW	Gigawatts
GWh	Gigawatt Hours
HDD	Heating Degree Day
Heat Rate	A measure of thermal efficiency computed by dividing the total BTU content of the fuel burned by the resulting kWhs generated. Heat rates can be expressed as either gross or net heat rates, depending whether the electricity output measured is gross or net generation and is generally expressed as BTU per net kWh
HLBV	Hypothetical Liquidation at Book Value
HLW	High-level radioactive waste
Home	NRG Home, which serves residential customers
ICE	Intercontinental Exchange
ISO	Independent System Operator, also referred to as RTOs
ISO-NE	ISO New England Inc.
Ivanpah	Ivanpah Solar Electric Generation Station, a 393 MW solar thermal power plant located in California's Mojave Desert in which NRG owns 54.5% interest
kWh	Kilowatt-hours
LaGen	Louisiana Generating LLC
LIBOR	London Inter-Bank Offered Rate
LSE	Load Serving Entities
LTIPs	Collectively, the NRG LTIP and the NRG GenOn LTIP
MATS	Mercury and Air Toxics Standards promulgated by the EPA
MDth	Thousand Dekatherms
Merger	The merger completed on December 14, 2012 by NRG and GenOn pursuant to the Merger Agreement
Midwest Generation	Midwest Generation, LLC
MISO	Midcontinent Independent System Operator, Inc.
MMBtu	Million British Thermal Units
MMDth	Million Dekatherms

MSU	Market Stock Unit
MW	Megawatts
MWe	Megawatt equivalent
MWh	Saleable megawatt hour net of internal/parasitic load megawatt-hour
NAAQS	National Ambient Air Quality Standards
NEIL	Nuclear Electric Insurance Limited
NEPOOL	New England Power Pool
NERC	North American Electric Reliability Corporation
Net Capacity Factor	The net amount of electricity that a generating unit produces over a period of time divided by the net amount of electricity it could have produced if it had run at full power over that time period. The net amount of electricity produced is the total amount of electricity generated minus the amount of electricity used during generation
Net Exposure	Counterparty credit exposure to NRG, net of collateral
Net Generation	The net amount of electricity produced, expressed in kWhs or MWhs, that is the total amount of electricity generated (gross) minus the amount of electricity used during generation
Net Revenue Rate	Sum of retail revenues less TDSP transportation charges
NOL	Net Operating Loss
NO _x	Nitrogen Oxides
NPNS	Normal Purchase Normal Sale
NQSO	Non-Qualified Stock Option
NRC	U.S. Nuclear Regulatory Commission
NRG	NRG Energy, Inc.
NRG GenOn LTIP	NRG 2010 Stock Plan for GenOn Employees (formerly the GenOn Energy, Inc. 2010 Omnibus Incentive Plan, which was assumed by NRG in connection with the Merger)
NRG LTIP	NRG Energy, Inc. Amended and Restated Long-Term Incentive Plan
NRG Yield, Inc.	NRG Yield, Inc., which changed its name to Clearway energy, Inc. following the sale by NRG or NRG Yield and the Renewables Platform to GIP
Nuclear Decommissioning Trust Fund	NRG's nuclear decommissioning trust fund assets, which are for the Company's portion of the decommissioning of the STP, units 1 & 2
Nuclear Waste Policy Act	U.S. Nuclear Waste Policy Act of 1982
NYISO	New York Independent System Operator
NYMEX	New York Mercantile Exchange
NYSDEC	New York State Department of Environmental Conservation
OCI/OCL	Other Comprehensive Income/(Loss)
ORDC	Operating Reserve Demand Curve
ORDPA	Online Reliability Deployment Price Adder
Peaking	Units expected to satisfy demand requirements during the periods of greatest or peak load on the system
Petra Nova	Petra Nova Parish Holdings, LLC
Pipeline	Projects that range from identified lead to shortlisted with an offtake, and represents a lower level of execution certainty
PJM	PJM Interconnection, LLC
PM2.5	Particulate Matter that has a diameter of less than 2.5 micrometers
PPA	Power Purchase Agreement
PPM	Parts per million
PSU	Performance Stock Unit
PUCT	Public Utility Commission of Texas
Rayburn	Rayburn Country Electric Cooperative, Inc.
RCRA	Resource Conservation and Recovery Act of 1976

Receivables Securitization Facilities	Collectively, the Receivables Facility and the Repurchase Facility
RECs	Renewable Energy Certificates
Renewables	Consists of the following projects in which NRG has an ownership interest: Agua Caliente, Ivanpah, and solar generating stations located at various NFL Stadiums
Renewables Platform	The renewable operating and development platform sold to GIP with NRG's interest in NRG Yield.
Revolving Credit Facility	The Company's \$3.7 billion revolving credit facility as of December 31, 2021, a component of the Senior Credit Facility, due 2024 was amended on May 28, 2019 and August 20, 2020
RGGI	Regional Greenhouse Gas Initiative
RMR	Reliability Must-Run
RPS	Renewable Portfolio Standards
RPSU	Relative Performance Stock Unit
RSU	Restricted Stock Unit
RTO	Regional Transmission Organization
SCR	Selective Catalytic Reduction Control System
SEC	U.S. Securities and Exchange Commission
Securities Act	The Securities Act of 1933, as amended
Senior Credit Facility	NRG's senior secured credit facility, comprised of the Revolving Credit Facility and the 2023 Term Loan Facility. The 2023 Term Loan Facility was repaid in the second quarter of 2019
Senior Notes	As of December 31, 2021, NRG's \$4.6 billion outstanding unsecured senior notes consisting of \$375 million of the 6.625% senior notes due 2027, \$821 million of 5.75% senior notes due 2028, \$733 million of the 5.25% senior notes due 2029, \$500 million of the 3.375% senior notes due 2029, \$1.0 billion of the 3.625% senior notes due 2031 and \$1.1 billion of the 3.875% senior notes due 2032
Senior Secured Notes	As of December 31, 2021, NRG's \$2.5 billion outstanding Senior Secured First Lien Notes consists of \$600 million of the 3.75% Senior Secured First Lien Notes due 2024, \$500 million of the 2.0% Senior Secured First Lien Notes due 2025, \$900 million of the 2.45% Senior Secured First Lien Notes due 2027, and \$500 million of the 4.45% Senior Secured First Lien Notes due 2029
SNF	Spent Nuclear Fuel
SO ₂	Sulfur Dioxide
South Central Portfolio	NRG's South Central Portfolio, which owned and operated a portfolio of generation assets consisting of Bayou Cove, Big Cajun-I, Big Cajun-II, Cottonwood and Sterlington, was sold on February 4, 2019. NRG is leasing back the Cottonwood facility through May 2025
S&P	Standard & Poor's
STP	South Texas Project — nuclear generating facility located near Bay City, Texas in which NRG owns a 44% interest
STPNOC	South Texas Project Nuclear Operating Company
Tax Act	The Tax Cuts and Jobs Act of 2017
TDSP	Transmission/distribution service provider
Texas Genco	Texas Genco LLC
TSR	Total Shareholder Return
TWCC	Texas Westmoreland Coal Co.
TWh	Terawatt Hours
U.S.	United States of America
U.S. DOE	U.S. Department of Energy
VaR	Value at Risk
VIE	Variable Interest Entity
Winter Storm Uri	A major winter and ice storm that had widespread impacts across North America occurring in February 2021

PART I

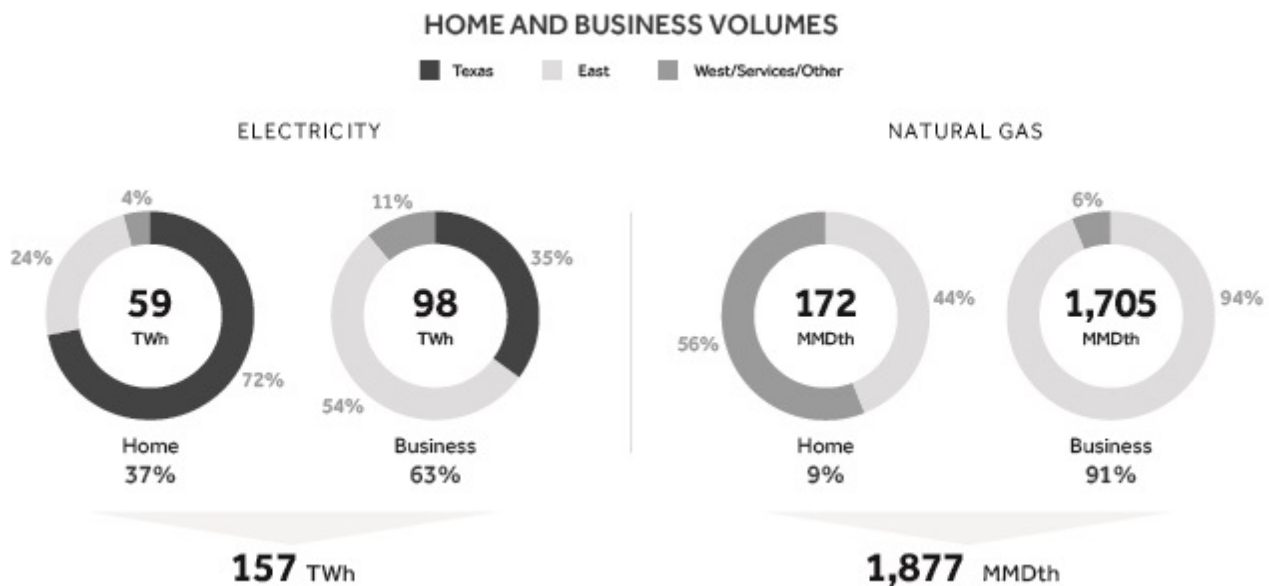
Item 1 — Business

General

NRG Energy, Inc., or NRG or the Company, is a consumer services company built on dynamic retail brands. NRG brings the power of energy to customers by producing and selling energy and related products and services, nation-wide in the U.S. and Canada in a manner that delivers value to all of NRG's stakeholders. NRG sells power, natural gas, and home and power services, and develops innovative, sustainable solutions, predominately under the brand names NRG, Reliant, Direct Energy, Green Mountain Energy, Stream, and XOOM Energy. The Company has a customer base that includes approximately 6 million Home customers as well as commercial, industrial, and wholesale customers, supported by approximately 18,000 MW of generation as of December 31, 2021.

NRG sold 157 TWhs of electricity and 1,877 MMDth of natural gas in 2021, making it one of the largest competitive energy retailers in the U.S. As of the end of 2021, NRG had recurring electricity and/or natural gas sales in 24 U.S. states, the District of Columbia, and 8 provinces in Canada. NRG's retail brands, collectively, have the largest share of competitively served residential electric customers in Texas and nationwide.

The following chart represents NRG's sales volumes for the year ended December 31, 2021:



Strategy

NRG's strategy is to maximize stakeholder value through the safe production and sale of reliable electricity and natural gas to its customers in the markets it serves, while positioning the Company to provide innovative solutions to the end-use energy or service customer. This strategy is intended to enable the Company to optimize its integrated model to generate stable and predictable cash flow, significantly strengthen earnings and cost competitiveness, and lower risk and volatility. Sustainability is a philosophy that underpins and facilitates value creation across our business for our stakeholders. It is an integral piece of NRG's strategy and ties directly to business success, reduced risks and enhanced reputation.

To effectuate the Company's strategy, NRG is focused on: (i) serving the energy needs of end-use residential, commercial and industrial, and wholesale customers in competitive markets through multiple brands and channels; (ii) offering a variety of energy products and services, including renewable energy solutions, that are differentiated by innovative features, premium service, sustainability, and loyalty/affinity programs; (iii) excellence in operating performance of its assets; (iv) optimal hedging of its portfolio; and (v) engaging in disciplined and transparent capital allocation.

The 2021 fiscal year was pivotal for the Company. NRG completed the acquisition of Direct Energy, doubling the size of its retail portfolio, while further decreasing its physical generation through the sale and planned retirement of certain assets, each as further discussed below. The completion of these significant activities positioned NRG for the next phase of its strategy focusing on growth.

The Company implemented a four-year plan beginning in 2022 to invest up to \$2 billion in order to achieve growth through optimization of the Company's core power and natural gas sales, as well as integrated solution sales within its core network in both power and home services.

Significant Acquisitions, Dispositions and Announced Retirements

On January 5, 2021, the Company acquired Direct Energy. Direct Energy is a leading retail provider of electricity, natural gas, and home and business energy-related products and services in North America, with operations in all 50 U.S. states and 8 Canadian provinces. The acquisition increased NRG's retail portfolio by over 3 million customers and complemented its integrated model. It also broadened the Company's presence in the Northeast and in states and locales where it did not previously operate, supporting NRG's objective to diversify its business. NRG realized its planned synergy target of \$175 million in 2021 and expects to realize annual synergies of \$225 million and \$300 million in 2022 and 2023, respectively. See Item 15 — Note 4, *Acquisitions, Discontinued Operations and Dispositions*, to the Consolidated Financial Statements for further discussion of the acquisition of Direct Energy.

On December 1, 2021, the Company sold approximately 4,850 MWs of fossil generating assets from its East and West regions of operations to Generation Bridge, an affiliate of ArcLight Capital Partners. As part of the transaction, NRG entered into a tolling agreement for the 866 MW Arthur Kill plant in New York City through April 2025. See Item 15 — Note 4, *Acquisitions, Discontinued Operations and Dispositions*, to the Consolidated Financial Statements for further discussion.

During the second quarter of 2021, the results of the PJM Base Residual Auction for the 2022/2023 delivery year were released, leading the Company to announce the near-term retirement of approximately 1,600 MW of its PJM coal generating assets in June 2022. On July 30, 2021, PJM identified reliability impacts resulting from the proposed deactivation of one of those assets, Indian River Unit 4. On August 27, 2021 the Company notified PJM that it would continue operations at Indian River Unit 4 until the reliability upgrades identified by PJM were completed, provided that the unit receives a satisfactory and compensatory reliability must run arrangement. See Item 15 — Note 11, *Asset Impairments*, to the Consolidated Financial Statements for further discussion. The Company is continuing to evaluate the viability of the remaining PJM generating assets.

Extreme Weather Event in Texas During February 2021 and expected Uplift Securitization proceeds

During February 2021, Texas experienced unprecedented cold temperatures for a prolonged duration as a result of Winter Storm Uri, resulting in a power emergency, blackouts, and an estimated all-time peak demand of 77 GW (without load shed). Ahead of the event, NRG launched residential customer communications calling for conservation across all of its brands, and initiated residential and commercial and industrial demand response programs to curtail customer load. The Company maximized available generating capacity and brought in additional resources to supplement in-state staff with technical and operating experts from the rest of its U.S. fleet.

The Texas Legislature passed House Bill ("HB") 4492, which among other things, authorized ERCOT to obtain \$2.1 billion of financing to distribute to LSEs that were charged and paid to ERCOT exceptionally highly priced ORDPA and ancillary service costs during Winter Storm Uri (the "Uplift Securitization"). NRG will receive \$689 million from ERCOT based on LSE-level detail published by the PUCT on December 7, 2021.

During the year ended December 31, 2021, Winter Storm Uri's pre-tax financial impact to the Company was a loss of \$380 million, which reflects the recovery of \$689 million of cost of operations as a result of the proceeds NRG will receive from the Uplift Securitization discussed above, with receipt expected to occur during the second quarter of 2022. The Company continues to pursue additional mitigants including, but not limited to, customer bad debt mitigation, counterparty default recovery, and additional ERCOT default recovery.

Business Overview

The Company's core business is the sale of electricity and natural gas to residential, commercial and industrial and wholesale customers, supported by the Company's wholesale generation. NRG manages its operations based on the combined results of the retail and wholesale generation businesses with a geographical focus.

The Company's business is segmented as follows:

- Texas, which includes all activity related to customer, plant and market operations in Texas;
- East, which includes all activity related to customer, plant and market operations in the East;
- West/Services/Other, which primarily includes the following assets and activities: (i) all activity related to customer, plant and market operations in the West and Canada, (ii) the services businesses, (iii) activity related to the Cottonwood facility, (iv) the remaining renewables activity, including the Company's equity method investment in Ivanpah Master Holdings, LLC, and (v) activity related to the Company's equity method investment for the Gladstone power plant in Australia; and
- Corporate activities.

As of December 31, 2021, in Texas, the Company's generation supply is fully integrated with its retail load. In the East, the Company's retail load is more dispersed throughout the region and not fully integrated with the Company's generation supply due to the locations of its power plants in that region. In the West/Services/Other, the Company's business is primarily serving retail load and services customers.

The Company's integrated model consists of three core functions: Customer Operations, Market Operations and Plant Operations, which directly support each other in each geographic region. The Company's integrated model in Texas provides the advantage of being able to supply a significant portion of the Company's retail customers with electricity from the Company's assets, which reduces the need to sell electricity to and buy electricity from other institutions and intermediaries, resulting in stable earnings and cash flows, lower transaction costs and less credit exposure. The integrated model also results in a reduction in actual and contingent collateral through offsetting transactions, thereby reducing transactions with third parties.

Customer Operations

Customer Operations is responsible for growing and retaining the customer base and delivering an outstanding customer experience. This includes acquisition and retention of all of NRG's residential, small commercial, government and commercial & industrial customers. NRG employs a multi-brand strategy that leverages a wide array of sales and partnership channels, direct face-to-face sales channels, call centers, websites, and brokers. Go-to-market activities include market strategy planning and development, product innovation, offer design, campaign execution, marketing and creative services, and selling. Customer portfolio maintenance and retention activities include fulfillment, billing, payment processing, collections, customer service, issue resolution, and contract renewals. NRG provides energy and related services at either fixed, indexed or month-to-month prices. Home customers typically contract for terms ranging from one month to five years, while Business contracts are often between one year and five years in length. Throughout all Customer Operations activities, the customer experience is kept at the forefront to inform decision-making and optimize retention, while creating supporters and advocates for NRG's brands in the market. Following the expansion of the customer base with the acquisition of Direct Energy, Customer Operations now comprises three end-use customer facing teams: NRG Home, which serves residential customers, NRG Business, which serves business customers, and NRG Services, which primarily includes the services businesses acquired.

Product Offerings

NRG sells a variety of products to residential and small commercial customers, including retail electricity and energy management, natural gas, home security, line and surge protection products, HVAC installation, repair and maintenance, home protection products, carbon offsets, back-up power stations, portable power, portable solar and portable lighting. Home and Services customers make purchase decisions based on a variety of factors, including price, incentive, customer service, brand, innovative offers/features and referrals from friends and family. Through its broad range of service offerings and value propositions, NRG is able to attract, retain, and increase the value of its customer relationships. NRG's brands are recognized for exemplary customer service, innovative smart energy and technology product offerings, and environmentally-friendly solutions.

The Company provides power and natural gas to the business-to-business markets in North America, as well as retail services, including demand response, commodity sales, energy efficiency and energy management solutions to Business customers. The Company is an integrated provider of supply and distributed energy resources and focuses on distributed products and services as businesses seek greater reliability, cleaner power and other benefits that they cannot obtain from the grid. These solutions include system power, distributed generation, renewable products, carbon management and specialty services, backup generation, storage and distributed solar, demand response, and energy efficiency and advisory services. In providing on-site energy solutions, the Company often benefits from its ability to supply energy products from its wholesale generation portfolio to Business customers.

Market Operations

Market Operations has two primary objectives: (i) to supply energy to our customers in the most cost-efficient manner; and (ii) to maximize the value of the Company's assets after satisfying its customer load requirements. These objectives are intended to reduce supply costs and maximize earnings with predictable cash flows.

Power and natural gas are the two main commercial groups within market operations.

Power

The power commercial group is responsible for end-use electricity supply including power plant optimization and certain fuel supply. To meet the market operations objectives, NRG enters into supply, power and gas sales and hedging agreements via a wide range of products and contracts, including (i) physical and financial commodity instruments, (ii) fuel supply and transportation contracts, (iii) renewable PPAs and (iv) capacity and other contracted revenue sources, as further discussed below.

In addition, because changes in power prices in the markets where NRG operates are generally correlated to changes in natural gas prices, NRG uses hedging strategies that may include power and natural gas forward purchases and sales contracts to manage the commodity price risk.

Physical and Financial Commodity Instruments

NRG trades electric power, natural gas and related commodities, environmental products, weather products and financial products, including forwards, futures, options and swaps. NRG enters into these instruments primarily to manage price and delivery risk, optimize physical and contractual assets in the portfolio, manage working capital requirements, reduce the carbon exposure in its business and comply with laws.

Fuel Supply and Transportation Contracts

NRG's fuel requirements consist of various forms of fossil fuel and nuclear fuel. The prices of fossil fuels can be volatile. The Company obtains its fossil fuels from multiple suppliers and through multiple transporters. Although availability is generally not an issue, localized shortages, transportation availability, delays arising from extreme weather conditions and supplier financial stability issues can and do occur. The preceding factors related to the sources and availability of raw materials are fairly uniform across the Company's business and fuel products used. NRG's primary fuel requirements consist of the following:

Natural Gas — NRG operates a fleet of mid-merit and peaking natural gas plants. Fuel needs are managed by the natural gas commercial group, on a spot basis, especially for peaking assets, as the Company does not believe it is prudent to forward purchase natural gas for these types of units as the dispatch is highly unpredictable.

Coal — NRG actively manages its coal requirements based on forecasted generation, market volatility and its inventory on site. The Company believes it is adequately hedged, using forward coal supply agreements, for its domestic coal consumption for 2022. As of December 31, 2021, NRG had purchased forward contracts to provide fuel for approximately 88% of the Company's expected requirements for 2022 and 2023. For the domestic fleet, NRG purchased approximately 16.1 million tons of coal in 2021, almost all of which was Powder River Basin coal. For fuel transport, NRG has entered into various rail transportation and rail car lease agreements with varying tenors that will provide for most of the Company's transportation requirements of Powder River Basin coal for the next three years.

Nuclear Fuel — STP's owners, including NRG, satisfy their fuel supply requirements by: (i) acquiring uranium concentrates and contracting for conversion of the uranium concentrates into uranium hexafluoride; (ii) contracting for enrichment of uranium hexafluoride; and (iii) contracting for fabrication of nuclear fuel assemblies. Through its proportionate participation in STPNOC, which is the NRC-licensed operator of STP that is responsible for all aspects of fuel procurement, NRG is party to a number of long-term forward purchase contracts with many of the world's largest suppliers covering STP's requirements for uranium concentrates with only approximately 25% of STP's requirements outstanding for the duration of the original operating license (through 2027/2028). Similarly, STP has begun the process of covering fuel supply requirements into the extended license period and has secured a fabrication contract with Westinghouse through 2047/2048. Other fuel requirements such as uranium, conversion and enrichment remain open at this time.

Renewable PPAs

The Company's strategy is to procure mid to long-term renewable generation through power purchase agreements. As of December 31, 2021, NRG has entered into PPAs totaling approximately 2.6 GW with third-party project developers and other counterparties. The average tenor of these agreements is twelve years. The Company expects to continue evaluating and executing similar agreements that support the needs of the business. The total GW entered into through PPAs may be impacted by contract terminations when they occur.

Capacity and Other Contracted Revenue Sources

NRG's revenues and cash flows, primarily in the East and West, benefit from capacity/demand payments and other contracted revenue sources, originating from market clearing capacity prices, resource adequacy contracts, tolling arrangements and other long-term contractual arrangements.

The Company's largest sources of continuing capacity revenues are capacity auctions in PJM and NYISO. PJM operates a pay-for-performance model where capacity payments are modified based on real-time performance and NRG's actual revenues will be the combination of revenues based on the cleared auction MW plus the net of any over- and under-performance of NRG's respective generation assets. The Company primarily sells physical and financial capacity forward through bilateral contracts for our New York state assets. To the extent NRG is not able to enter into physical bilateral contracts, NRG will sell the remaining capacity into the NYISO six-month strip, monthly or spot auctions.

In California, there is a resource adequacy requirement that is primarily satisfied through bilateral contracts. Such bilateral contracts are typically short-term resource adequacy contracts. When bilateral contracting does not satisfy the resource adequacy need, such shortfalls can be addressed through procurement tools administered by the CAISO, including the capacity procurement mechanism or reliability must-run contracts.

Natural Gas

The natural gas commercial group is responsible for all costing, logistics and supply for all of NRG's residential, commercial & industrial and wholesale customers. The Direct Energy acquisition, which closed on January 5, 2021, significantly increased our capabilities and scale across the natural gas value chain. NRG has acquired contractual rights to natural gas transportation and storage assets across its footprint that allow for optimal supply economics in support of our various businesses. Our diversified load coupled with this asset portfolio enables us to deliver supply economically while providing incremental optimization activities when market conditions allow. The scale of the natural gas operation extends from the wellhead (through our producer services business) to our end use customers (through our various sales channels). This scale, coupled with our associated assets, gas system platform and people, create significant opportunity across North America.

Plant Operations

The Company owns and leases a diversified wholesale generation portfolio with approximately 18,000 MW of fossil fuel, nuclear and renewable generation capacity at 25 plants as of December 31, 2021, including approximately 1,600 MW of its PJM coal fleet with an announced retirement date of June 2022. The Company's wholesale generation assets are diversified by fuel-type and dispatch level, which helps mitigate the risks associated with fuel price volatility and market demand cycles. NRG continually evaluates its generation portfolio to focus on asset optimization opportunities and the locational value of its generation assets in each of the markets where the Company participates, as well as opportunities for the development of new generation.

The following table summarizes NRG's generation portfolio as of December 31, 2021:

Type	(In MW) ^(a)			
	Texas	East	West/Services/ Other	Total
Natural gas	4,775	1,881	1,494	8,150
Coal	4,174	3,140	605	7,919
Oil	—	455	—	455
Nuclear	1,132	—	—	1,132
Utility Scale Solar	—	—	219	219
Battery Storage	2	—	—	2
Total generation capacity	10,083	5,476	2,318	17,877

(a) All Utility Scale Solar are described in MW on an alternating current basis. MW figures provided represent nominal summer net MW capacity of power generated as adjusted for the Company's owned or leased interest.

Plant Operations is responsible for operating the Company's generation facilities at the highest standards of safety and reliability, and includes (i) operations and maintenance, (ii) asset management, and (iii) development, engineering and construction.

Operations & Maintenance

NRG operates and maintains its generation portfolio, as well as approximately 7,377 MW of additional coal and natural gas generation capacity at 12 plants operated on behalf of third parties as of December 31, 2021 using prudent industry practices for the safe, reliable and economic generation of electricity in compliance with all local, state and federal requirements. The Company follows a consistent set of operating requirements, including a solid base of training, required adherence to specific safety and environmental limits, procedure and checklist usage, and the implementation of continuous process improvement through incident investigations.

NRG uses best-in-class maintenance practices for preventive, predictive, and corrective maintenance planning. The Company's strategic planning process evaluates equipment condition, performance, and obsolescence to support the development of a comprehensive work scope and schedule for long-term performance.

Asset Management

NRG manages all aspects of its generation portfolio to optimize the lifecycle value of the assets, consistent with the Company's goals. The Company evaluates capital projects required for continued operation and strategic enhancement of the assets, provides quality assurance on capital outlays, and assesses the impact of rules, regulations, and laws on business profitability. In addition, the Company manages its long-term contracts, PPAs, and real estate holdings and provides third party asset management services.

Development, Engineering & Construction

NRG develops, engineers and executes major plant modifications, "new build" generation and energy storage projects that enhance the value of its generation portfolio and provide options to meet generation growth needs in the retail markets we serve, in accordance with the Company's strategic goals. Projects have included gas-fired generation development and construction, coal to gas conversions, grid scale energy storage development, grid scale renewable construction, and asset demolition, remediation and reclamation work.

Operational Statistics

The following statistics represent the Company's retail load and customer count:

	Year ended December 31,		
	2021	2020	2019
Sales volumes - Electricity (in GWh)			
Home - Texas	42,397	38,473	38,958
Home - East	14,108	10,221	9,918
Home - West/Services/Other	2,252	—	—
Business - Texas	34,367	17,928	18,976
Business - East	53,204	1,596	1,214
Business - West/Services/Other	10,625	—	—
Total Load	156,953	68,218	69,066
Sales volumes - Natural gas (in MDth)			
Home - East	74,920	23,509	23,359
Home - West/Services/Other	97,272	—	—
Business - East	1,595,533	—	—
Business - West/Services/Other	109,021	—	—
Total Load	1,876,746	23,509	23,359

	Year ended December 31,		
	2021	2020	2019
Customer count - Electricity customers^{(a)(b)} (in thousands)			
<i>Home - Texas</i>			
Average retail	3,055	2,449	2,358
Ending retail	3,024	2,451	2,450
<i>Home - East</i>			
Average retail	1,484	1,019	990
Ending retail	1,402	970	1,070
<i>Home - West/Services/Other</i>			
Average retail	510	—	—
Ending retail	498	—	—
Customer count - Natural gas customers^(b) (in thousands)			
<i>Home - East</i>			
Average retail	360	156	122
Ending retail	364	166	158
<i>Home - West/Services/Other</i>			
Average retail	452	—	—
Ending retail	434	—	—
Total Customer count			
Average retail - Home	5,861	3,624	3,470
Ending retail - Home	5,722	3,587	3,678

(a) Includes services customers

(b) Dual fuel customers are included within electricity customer counts only

The following are industry statistics for the Company's fossil and nuclear plants, as defined by the NERC:

Annual Equivalent Availability Factor, or EAF — Measures the percentage of maximum generation available over time as the fraction of net maximum generation that could be provided over a defined period of time after all types of outages and deratings, including seasonal deratings, are taken into account.

Net Heat Rate — The net heat rate represents the total amount of fuel in BTU required to generate one net kWh provided.

Net Capacity Factor — The net amount of electricity that a generating unit produces over a period of time divided by the net amount of electricity it could have produced if it had run at full power over that time period. The net amount of electricity produced is the total amount of electricity generated minus the amount of electricity used during generation by the station.

The tables below presents these performance metrics for the Company's generation portfolio, including leased facilities, for the years ended December 31, 2021 and 2020:

	Year Ended December 31, 2021				
	Net Owned Capacity (MW) ^(b)	Net Generation (In thousands of MWh) ^(a)	Fossil and Nuclear Plants ^(a)		
			Annual Equivalent Availability Factor	Average Net Heat Rate BTU/kWh	Net Capacity Factor
Texas	10,083	36,920	70.6 %	10,717	42.4 %
East	5,476	7,494	79.8 %	11,877	8.8 %
West/Services/Other	2,318	7,949	88.0 %	7,337	47.2 %

Year Ended December 31, 2020

	Net Owned Capacity (MW)	Net Generation (In thousands of MWh) ^(a)	Fossil and Nuclear Plants ^(a)		
			Annual Equivalent Availability Factor	Average Net Heat Rate BTU/kWh	Net Capacity Factor
Texas	10,082	31,385	76.0 %	10,781	35.9 %
East	9,482	4,102	81.7 %	12,329	4.8 %
West/Services/Other	3,234	9,171	88.0 %	7,338	52.3 %

(a) Excludes equity method investments

The generation performance by region for the three years ended December 31, 2021, 2020 and 2019 is shown below:

(In thousands of MWh)	Net Generation		
	2021	2020	2019
Texas			
Coal	18,876	15,701	21,985
Gas	8,846	6,006	6,315
Nuclear ^(a)	9,198	9,678	9,695
Total Texas	<u>36,920</u>	<u>31,385</u>	<u>37,995</u>
East			
Coal	5,774	1,888	4,435
Oil	201	322	209
Gas	1,519	1,892	2,269
Total East ^(b)	<u>7,494</u>	<u>4,102</u>	<u>6,913</u>
West/Services/Other			
Gas	7,941	9,165	9,450
Renewables	8	6	12
Total West/Services/Other ^(c)	<u>7,949</u>	<u>9,171</u>	<u>9,462</u>
Total generation performance	<u>52,363</u>	<u>44,658</u>	<u>54,370</u>

(a) Reflects the Company's undivided interest in total MWh generated by STP

(b) Includes gas generation of 855 thousand MWh, 870 thousand MWh and 903 thousand MWh and oil generation of 199 thousand MWh, 322 thousand MWh and 209 thousand MWh for the years ended December 31, 2021, 2020 and 2019, respectively, that was sold to Generation Bridge

(c) Includes gas generation of 2,445 thousand MWh, 3,002 thousand MWh, and 2,203 thousand MWh for the years ended December 31, 2021, 2020 and 2019, respectively, that was sold to Generation Bridge

Competition

While there has been consolidation in the competitive retail space over the past few years, there is still considerable competition for customers. In Texas, there is healthy competition in deregulated areas and customers can choose providers based on the most appealing offers. Outside of Texas, electricity retailers compete with the incumbent utilities, in addition to other retail electric providers, which can inhibit competition depending on the market rules of the state. There is a high degree of fragmentation, with both large and small competitors offering a range of value propositions, including value, rewards, and sustainability-based offerings.

Wholesale generation is highly fragmented and diverse in terms of industry structure by region. As such, there is wide variation in terms of the capabilities, resources, nature and identities of the Company's competitors depending on the market. Competitors include regulated utilities, municipalities, cooperatives, other independent power producers, and power marketers or trading companies, including those owned by financial institutions.

Seasonality and Price Volatility

The sale of power and natural gas to retail customers are seasonal businesses with the demand for power generally peaking during the summer, and the demand for natural gas generally peaking during the winter. As a result, net working capital requirements for the Company's retail operations generally increase during summer and winter months along with the higher revenues, and then decline during off-peak months. Weather may impact operating results and extreme weather conditions could have a material impact. The rates charged to retail customers may be impacted by fluctuations in total power

prices and market dynamics, such as the price of natural gas, transmission constraints, competitor actions, and changes in market heat rates.

Annual and quarterly operating results of the Company's generation portfolio can be significantly affected by weather and energy commodity price volatility. Significant other events, such as the demand for natural gas, interruptions in fuel supply infrastructure and relative levels of hydroelectric capacity can increase seasonal fuel and power price volatility. The preceding factors related to seasonality and price volatility are fairly uniform across the regions in which the Company operates.

Market Framework

NRG sells electricity, natural gas and related products and services to customers throughout the U.S. and Canada. In most of the states and regions that have introduced retail consumer choice, NRG competitively offers electricity, natural gas, portable power and other value-enhancing services to customers. Each retail consumer choice state or province establishes its own retail competition laws and regulations, and the specific operational, licensing, and compliance requirements vary by state or province. Regulated terms and conditions of default service, as well as any movement to replace default service with competitive services, as is done in ERCOT, can affect customer participation in retail competition. In Canada, NRG sells energy and related services to residential and commercial customers in the province of Alberta pursuant both to a regulated rate service governed by provincial regulations as well as a competitive service with rates set by market forces. Sales of energy to commercial customers take place in other provinces as well. The attractiveness of NRG's retail offerings may be impacted by the rules, regulations, market structure and communication requirements from public utility commissions in each state and province.

NRG's fleet of power plants which it owns, operates or manages are located in organized energy markets, known as RTOs or ISOs. Each organized market administers day-ahead and real-time centralized bid-based energy and ancillary services markets pursuant to tariffs approved by FERC, or in the case of ERCOT, market rules approved by the PUCT. These tariffs and rules dictate how the energy markets operate, how market participants make bilateral sales with one another, and how entities with market-based rates are compensated. Established prices reflect the value of energy at the specific location and time it is delivered, which is known as the Locational Marginal Price. Each market is subject to market mitigation measures designed to limit the exercise of locational market power. These market structures facilitate NRG's sale of power and capacity products at market-based rates.

Other than ERCOT, each of the ISO regions also operates a capacity or resource adequacy market that provides an opportunity for generating and demand response resources to earn revenues to offset their fixed costs that are not recovered in the energy and ancillary services markets. The ISOs are also responsible for transmission planning and operations.

Texas

NRG's business in Texas is subject to standards and regulations adopted by the PUCT and ERCOT^(a), including the requirement for retailers to be certified by the PUCT in order to contract with end-users to sell electricity. The ERCOT market is one of the nation's largest and, historically, fastest growing power markets. ERCOT is an energy-only market and has implemented market rule changes referred to as the ORDC to provide pricing more reflective of higher energy value when operating reserves are scarce or constrained. The PUCT directed the implementation of the ORDC in 2014 to act as the primary scarcity pricing mechanism, with subsequent amendments made in 2019, 2020 and 2021. The majority of the retail load in the ERCOT market region is served by competitive retail suppliers, except certain areas that have not opted into competitive consumer choice and are served by municipal utilities and electric cooperatives.

East

While most of the states in the East region of the U.S. have introduced some level of retail consumer choice for electricity and/or natural gas, the incumbent utilities currently provide default service in most of the states and as a result typically serve the majority of residential customers. NRG's retail activities in the East are subject to standards and regulations adopted by the ISOs, state public utility commissions and legislators, including the requirement for retailers to be certified in each state in order to contract with end-users to sell electricity.

(a) The Cottonwood facility is located in Deweyville, Texas, but operates in the MISO market

Power plants owned, operated and managed by NRG and NRG's demand response assets located in the East region of the U.S. are within the control areas of PJM, NYISO and MISO. Each of the market regions in the East region provides for robust competition in the day-ahead and real-time energy and ancillary services markets. Additionally, the assets in the East region receive a significant portion of their revenues from capacity markets. PJM uses a forward capacity auction, while NYISO uses a month-ahead capacity auction. MISO has an annual auction. Capacity market prices are sensitive to design parameters, as well as additions of new capacity. PJM operates a pay-for-performance model where capacity payments are modified based on real-time generator performance. In such markets, NRG's actual capacity revenues will be the combination of cleared auction prices times the quantity of MW cleared, plus the net of any over-performance "bonus payments" and any under-performance charges. Additionally, bidding rules allow for the incorporation of a risk premium into generator bids.

West

In the West region of the U.S., NRG owns equity interests in natural gas-fired power plants located entirely within the CAISO footprint. The CAISO operates day-ahead and real-time locational markets for energy and ancillary services, while managing congestion primarily through nodal prices. The CAISO system facilitates NRG's sale of power, ancillary services and capacity products at market-based rates, either within the CAISO's centralized energy and ancillary service markets or bilaterally pursuant to tolling arrangements or other capacity sales with California's LSEs. The CPUC also determines capacity requirements for LSEs and for specified local areas utilizing inputs from the CAISO. Both the CAISO and CPUC require LSEs to contract with sufficient generation resources in order to maintain minimum levels of generation within defined local areas. Additionally, the CAISO has independent authority to contract with needed resources under certain circumstances, typically either when LSEs have failed to procure sufficient resources, or system conditions change unexpectedly.

Canada

In Canada, NRG sells to residential and commercial retail customers in Alberta under both regulated rates approved by the AUC as well as through competitive service. The Company's regulated rates are approved through periodic rate applications that establish rates for power and gas sales as well as for recovery of other costs associated with operating the regulated business. In addition, the Company sells energy to commercial customers in other provinces. All sales and operations are subject to applicable federal and provincial laws.

Regulatory Matters

As participants in wholesale and retail energy markets and owners and operators of power plants, certain NRG entities are subject to regulation by various federal and state government agencies. These include the CFTC, FERC, NRC and the PUCT, as well as other public utility commissions in certain states where NRG's generation or distributed generation assets are located. In addition, NRG is subject to the market rules, procedures and protocols of the various ISO and RTO markets in which it participates. Likewise, certain NRG entities participating in the retail markets are subject to rules and regulations established by the states and provinces in which NRG entities are licensed to sell at retail. NRG must also comply with the mandatory reliability requirements imposed by NERC and the regional reliability entities in the regions where NRG operates.

NRG's operations within the ERCOT footprint are not subject to rate regulation by FERC, as they are deemed to operate solely within the ERCOT market and not in interstate commerce. These operations are subject to regulation by the PUCT, as well as to regulation by the NRC with respect to NRG's ownership interest in STP.

Federal Energy Regulation

In March 2021, President Biden announced a framework for his "Build Back Better" initiative which includes policies to address climate change across the whole of the federal government through the tax code, an energy efficiency and clean energy incentives, research and development, among other areas of focus. The "Build Back Better" initiative has taken the form of two separate bills in Congress. The \$1.2 trillion "core infrastructure" bill, which contains spending on new electric vehicle charging programs, among other things, was signed into law by President Biden on November 15, 2021. The remaining priorities, commonly referred to as "Build Back Better," are being monitored by NRG as they progress through the legislative process.

State and Provincial Energy Regulation

Illinois Legislation — Illinois enacted the Climate and Equitable Jobs Act ("CEJA") on September 15, 2021, which targets 100% clean energy by 2050. CEJA focuses on (i) decarbonization, (ii) incentives to transition coal plants into clean energy facilities and (iii) nuclear subsidies. CEJA requires non-publicly owned coal or oil electric generating units larger than 25 MWs to eliminate CO₂e and copollutant emissions by January 1, 2030. Non-publicly owned electric generating units that are gas-fired, including Joliet, must eliminate CO₂e and copollutant emissions, including through unit retirement or the use of 100% green hydrogen, in a timeframe ranging from January 1, 2030 to January 1, 2045 depending on certain emission rates and proximity to environmental justice communities. Furthermore, CEJA placed restrictions, with immediate effect, on gas-fired units that limits future emissions to their historic baselines. These limits affect the total potential energy production by gas units in Illinois. PJM, the PJM Independent Market Monitor and the Illinois Environmental Protection Agency have exchanged

correspondence to obtain clarification on the implications of these restrictions. The new energy law also provides \$174 million in incentives to develop solar and battery storage at coal generating sites that may be available to NRG.

Regional Regulatory Developments

NRG is affected by rule/tariff changes that occur in the ISO regions. For further discussion on regulatory developments see Item 15 — Note 24, *Regulatory Matters*, to the Consolidated Financial Statements.

Texas

Public Utility Commission of Texas' Actions with Respect to Wholesale Pricing and Market Design — In September 2021, the PUCT opened a rulemaking project to evaluate whether it should amend its rules to modify the High System Wide Offer cap ("HCAP") and the ORDC, which is intended to ensure prices in the competitive market appropriately reflect the value of operating reserves as the system approaches scarcity conditions. This rulemaking project concluded in December 2021, resulting in a rule amendment that lowered the HCAP to \$5,000 per MWh and which expands the minimum contingency level to 3,000 MW. These two changes are broadly offsetting in their effect on overall average energy prices.

Activity on Securitization and ERCOT Pricing during Winter Storm Uri — The Texas Legislature acted to pass a variety of securitization vehicles to finance exceptionally high power and gas costs from Winter Storm Uri, including HB 4492. ERCOT subsequently filed two applications requesting the PUCT to issue Debt Obligation Orders ("DOOs") based on the legislation. On October 13, 2021, the PUCT issued DOOs authorizing ERCOT's securitization of \$800 million to cover short payments and reimburse congestion revenue right account holders for amounts related to the default of market participants other than electric cooperatives Brazos and Rayburn, which are discussed below (the "Default Securitization") and \$2.1 billion related to highly priced ancillary service and ORPDA during Winter Storm Uri (the "Uplift Securitization").

The DOOs require ERCOT to issue loans or securitized bonds through a bankruptcy remote special purpose entity as the borrower and distribute the proceeds to affected market participants for default-related short payments and to LSEs for certain ancillary-service and ORPDA costs using an allocation of proceeds based on an LSE's exposure to relevant costs as calculated by the LSE's prevailing load-ratio share during the period of Winter Storm Uri, and a further redistribution of proceeds initially allocated to other LSEs and customers who opt-out of securitization. In turn, ERCOT will charge non-bypassable fees related to the Default Securitization and Uplift Securitization to all qualified scheduling entities and to all LSEs (other than those that have opted-out), respectively. The Uplift Securitization provided for a one-time opt-out for certain LSEs or individual transmission-level customers who in exchange for foregoing any securitization-related proceeds likewise avoid future fees assessed by ERCOT for the use of repaying ERCOT's debt obligations. However, nearly all competitive REPs were required by the law to participate, ensuring the charge established by the law is competitively neutral. These opt-outs and calculations of the allocation of proceeds have been finalized. Based on LSE-level detail published by the PUCT on December 7, 2021, NRG will receive \$689 million of Uplift Securitization proceeds, with receipt expected to occur during the second quarter of 2022. The \$800 million Default Securitization was disbursed by ERCOT in November 2021, with NRG receiving \$12 million.

Electric Cooperative Bankruptcy and Securitization — Of the defaults in the ERCOT market, two electric cooperatives, Brazos and Rayburn, constitute the vast majority. Brazos currently is in bankruptcy. NRG and ERCOT have both filed a proof of claim in the bankruptcy proceeding of Brazos, and Brazos has challenged ERCOT's claims in a manner that may prejudice NRG's claims against Brazos. During the fourth quarter of 2021, ERCOT filed a motion to dismiss Brazos' complaint relating to ERCOT's proof of claim, which NRG joined in support, but this motion was denied by the Bankruptcy Court, and ERCOT, NRG and certain other parties appealed. On January 11, 2022, the United States District Court for the Southern District of Texas entered an order allowing the appellants to seek direct review from the Fifth Circuit Court of Appeals of the Bankruptcy Court's decision on the motion to dismiss. On January 18, 2022, ERCOT, NRG and certain other parties filed a petition for direct review by the United States Court of Appeals for the Fifth Circuit. The Court of Appeals granted the petition on February 4, 2022. On February 7, 2022, the Bankruptcy Court entered an order granting summary judgement in favor of Brazos on whether ERCOT's sales to Brazos were in the ordinary course of Brazos' business. The Bankruptcy Court ruled that the portion of ERCOT's claims for charges incurred by Brazos after the intervention of the PUCT and ERCOT were not in the ordinary course and thus are not entitled to administrative expense status under the Bankruptcy Code. The amount and priority of ERCOT's claim for amounts incurred prior to such intervention or after such intervention ceased are issues to be determined at trial. The Bankruptcy Court's summary judgement ruling may also apply to NRG's claims against Brazos. Trial on the merits of the ERCOT proof of claim and Brazos' complaint is set to commence before the Bankruptcy Court on February 22, 2022. To the extent the Bankruptcy Court reduces or disallows claims against Brazos, this presents risk for NRG.

ERCOT's market protocols provide for short payments to be extinguished through a process of uplift, whereby the cost of defaults is allocated to all market participants, including retailers, generators, municipal and cooperative utilities, and financial traders. However, the total amount of this uplift is limited by ERCOT's current protocols of \$2.5 million per month. Consequently, it would take approximately 63 years for the net short-pay balance of \$1.887 billion related to Brazos to be uplifted to the market under the current market rules. NRG's undiscounted share of the uplift based on its current market share

is estimated to be approximately \$121 million and has been short-paid \$68 million. The remaining \$53 million has been discounted based on the 63 year repayment term and present value of \$9 million was recorded as an additional liability.

Rayburn announced that it intended to securitize the amounts owed to ERCOT and payment from such securitization is expected in the first quarter of 2022.

Reliability and Plant Operations Standards — The PUCT established a rulemaking to establish weatherization standards, and issued a notice for comments in response to provisions of Texas Senate Bill 3 ("SB3") that require mandatory standards for power generators and others within the electric-power sector. SB3 provides that the standards adopted by the PUCT be implemented by generation owners, be subject to ERCOT inspections, and that ERCOT provide asset owners with a reasonable period of time to remedy any violation. Continuing violations would be subject to an administrative penalty and a requirement that a third-party contractor assess the asset owner's weatherization plans. On August 24, 2021, Commission Staff issued a proposal of weatherization standards for publication. NRG, through its trade association, filed comments. On October 21, 2021, Commissioners of the PUCT voted to adopt the rule without substantial modifications from the proposal.

PJM

PJM's Variable Resource Requirement Curve — On July 9, 2021, the Court of Appeals for the D.C. Circuit issued a decision denying in part and granting in part an appeal by several PJM state consumer advocates regarding FERC's order approving revisions to PJM's Variable Resource Requirement Curve ("VRR"). The court upheld PJM's use of a greenfield gas-fired combustion turbine as the reference unit to establish Net Cost of New Entry ("Net CONE"). However, the court remanded back to FERC the issue of allowing generators to have a 10% adder to their offer to supply capacity in the PJM market, and on January 20, 2022, FERC issued an order removing the 10% adder. The VRR is the demand curve that represents the slope of bids in the auction that ultimately results in the price and quantity of capacity allocated to load-serving entities, including NRG. The VRR curve is based on several inputs, including the Net CONE. The outcome could affect PJM's capacity market prices.

PJM Revisions to Minimum Offer Price Rule — On July 30, 2021, PJM filed proposed tariff changes at FERC to largely eliminate the current minimum offer price rules ("MOPR") except in very narrow cases. The proposal would eliminate: (i) the current MOPR for new entrant natural gas resources effective with the 2023/2024 delivery year and (ii) the expanded MOPR established in FERC's December 2019 Order to address out-of-market subsidies. On September 30, 2021, PJM's proposal went into effect by operation of law because the FERC Commissioners were split 2-2 as to the lawfulness of the change. Multiple parties filed motions for rehearing and ultimately appealed to the federal court of appeals. On December 21, 2021 and December 30, 2021, respectively, the Third Circuit Court of Appeals and the Seventh Circuit Court of Appeals issued an order holding the appeals in abeyance. The proposed revisions would allow PJM to address specific and narrow instances of buyer-side market power through subsequent filings at FERC. Any changes to the PJM capacity market construct may impact the outcome of future Base Residual Auctions.

PJM's ORDC Filing and Compliance Directives — On May 21, 2020, PJM proposed energy and reserve market reforms to enhance price formation in reserve markets, which included modifying ORDC and aligning market-based reserve products in Day-Ahead and Real-Time markets. In addition to approving PJM's proposal, FERC also directed PJM to implement a forward-looking Energy and Ancillary Services Offset to be used in PJM's capacity markets. After multiple compliance filings, parties filed appeals at the Court of Appeals for the D.C. Circuit of FERC's orders, and on August 13, 2021, FERC filed a motion and was granted a voluntary remand the case back to the agency. On December 22, 2021, FERC issued its order on voluntary remand affirming in part and reversing in part FERC's determination. Specifically, FERC reversed itself and ordered PJM to: (i) eliminate the more robust ORDC curves and reserve penalty adders and maintain the existing (lower) curves and (lower) penalty adders and (ii) restore its tariff provisions related to its prior backward-looking Energy and Ancillary Services Offset. At the direction of FERC, on January 21, 2022, PJM filed a compliance filing proposing a new schedule for the Base Residual Auctions.

Independent Market Monitor Market Seller Offer Cap Complaint — On March 18, 2021, finding that the calculation of the default Market Seller Offer Cap was unjust and unreasonable, the Order permitted the current PJM May 2021 capacity auction for the 2022/2023 delivery rule to continue under the existing rules and set a procedural schedule for parties to file briefs with possible solutions. On September 2, 2021, FERC issued an order in response to a complaint filed by the PJM Independent Market Monitor's proposal, which eliminates the Cost of New Entry-based Market Seller Offer Cap and implements a limited default cap for certain asset classes based on going-forward costs and provides for unit specific cost review by the Independent Market Monitor for all other non-zero offers into the auctions. As required by the Order, PJM submitted its compliance tariff on October 4, 2021. On October 4, certain parties filed a motion for rehearing, which was denied. Multiple parties filed appeals at the Court of Appeals for the D.C. Circuit. The appeals are currently being held in abeyance. The removal of the Offer Caps may impact the outcome of future Base Residual Auctions.

New York

NYISO's Revisions to the Buyer Side Mitigation Rules — On January 5, 2022, the NYISO filed its Comprehensive Mitigation Review proposing changes to the buyer-side mitigation rules. The proposal would remove certain facilities to be reviewed under the buyer-side mitigation rules to serve the goals of New York's Climate Leadership and Community Protection Act, adopt a marginal capacity accreditation market design and adjust the rules surrounding installed and unforced capacity. Changes to NYISO's Buyer Side Mitigation rules may impact the outcome of future capacity auctions.

California

California Resource Adequacy Proceedings — On March 25, 2021, the CPUC directed the state's major investor-owned utilities to engage in up to 1.5 GW of emergency procurement for 2021 and 2022 and is currently evaluating further procurement directives through 2023. In the same docket, the CPUC approved a new demand response program for use during emergency conditions. As part of the Integrated Resource Procurement docket, the CPUC approved a decision on June 24, 2021 that will require all Load Serving Entities to procure a pro rata share of 11.5 GW of new non-fossil resource adequacy from 2023 to 2026. To replace the retiring Diablo Canyon nuclear plant, this will consist largely of GHG-free energy, long-duration storage, baseload renewables and energy storage. A new resource adequacy docket opened in October 2021 will consider changes to the reserve margin and qualifying capacity of different resource types, and the CPUC and CAISO will continue to evaluate major structural reforms to the resource adequacy program in California that would begin in 2024.

Midway-Sunset Reliability Must Run Proceeding — San Joaquin Energy, LLC, a subsidiary of NRG, owns a 50%, non-controlling interest in the Midway-Sunset Cogeneration Company ("MSCC"). MSCC owns a cogeneration facility near Fellows, California and submitted mothball notices for the cogeneration facility to the CAISO in the latter half of 2020. On December 17, 2020, the CAISO Board effectively rejected the mothball notices by authorizing its staff to designate the MSCC facility as a reliability must-run ("RMR") resource conditioned on execution of a RMR contract. On January 29, 2021, MSCC made its RMR filing at FERC. Multiple parties filed protests and on March 16, 2021, MSCC filed a response to those protests. On April 2, 2021, FERC accepted the RMR filing, suspended it to become effective February 1, 2021 subject to refund and established hearing and settlement judge proceedings. The parties are engaging in settlement proceedings. On September 27, 2021, the CAISO gave notice to MSCC extending the term of the reliability designation through December 31, 2022.

Canada

Alberta Energy Market — In December 2020, prior to its acquisition by NRG, Direct Energy filed a Non-Energy Rate Application with the AUC to approve cost recovery for the 2020-2022 period. Major cost elements of this application relate to bad debt, corporate costs, and customer care and billing contracts. The Company engaged in a mediation and settlement process, and on April 20, 2021 an all-party settlement was executed, and was filed with the AUC on April 23, 2021. The AUC approved the settlement agreement on June 4, 2021. Separately, the Company received approval from the AUC of a negotiated rate settlement for its electricity focused 2020-2022 Energy Price Setting Plan which went into effect on July 1, 2021. The Company has completed the last repayment to the Balancing Pool and the Alberta government as part of its 90-day utility bill deferral program. This program, effective March 18, 2020, was designed to assist residential, farms, and small business customers who were negatively affected by COVID-19 related economic circumstances by temporarily deferring their utility bill payments. The program was also designed to mitigate bad debt risks associated with the implementation of the program.

Environmental Regulatory Matters

NRG is subject to numerous environmental laws in the development, construction, ownership and operation of power plants. These laws generally require that governmental permits and approvals be obtained before construction and maintained during operation of power plants. Federal and state environmental laws historically have become more stringent over time. Future laws may require the addition of emissions controls or other environmental controls or impose restrictions on the Company's operations. Complying with environmental laws often involves specialized human resources and significant capital and operating expenses, as well as occasionally curtailing operations. NRG decides to invest capital for environmental controls based on the relative certainty of the requirements, an evaluation of compliance options, and the expected economic returns on capital.

A number of regulations that affect the Company have been revised recently by the EPA, including ash storage and disposal requirements, NAAQS revisions and implementation and effluent limitation guidelines. Some of these recent revisions may, in turn, be revised by the current U.S. presidential administration. NRG will evaluate the impact of these regulations as they are revised but cannot fully predict the impact of each until anticipated revisions and legal challenges are resolved.

Air

The CAA and related regulations (as well as similar state and local requirements) have the potential to affect air emissions, operating practices and pollution control equipment required at power plants. Under the CAA, the EPA sets NAAQS for certain pollutants including SO₂, ozone, and PM_{2.5}. Many of the Company's facilities are located in or near areas that are

classified by the EPA as not achieving certain NAAQS (non-attainment areas). The relevant NAAQS may become more stringent. The Company maintains a comprehensive compliance strategy to address continuing and new requirements. Complying with increasingly stringent air regulations could require the installation of additional emissions control equipment at some NRG facilities or retiring of units if installing such controls is not economic. Significant changes to air regulatory programs affecting the Company are described below.

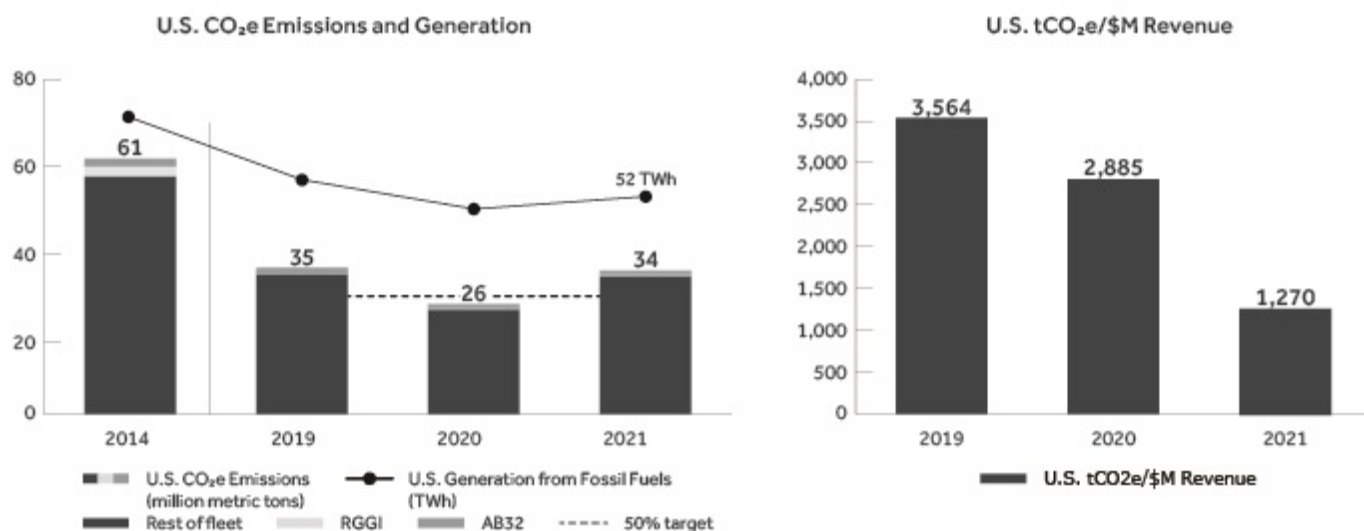
CPP/ACE Rules — The attention in recent years on GHG emissions has resulted in federal and state regulations. In October 2015, the EPA promulgated the CPP, addressing GHG emissions from existing EGUs. On February 9, 2016, the U.S. Supreme Court stayed the CPP. In July 2019, EPA promulgated the ACE rule, which rescinded the CPP, which had sought to broadly regulate CO₂ emissions from the power sector. On January 19, 2021, the D.C. Circuit vacated the ACE rule (but on February 22, 2021, at the EPA's request, stayed the issuance of the portion of the mandate that would vacate the repeal of the CPP). On October 29, 2021, the U.S. Supreme Court agreed to review the D.C. Circuit's decision, which should provide some clarity regarding the scope of the EPA's authority to regulate CO₂ under the Clean Air Act. The Company expects the EPA to promulgate a new rule to regulate GHG emissions from power plants after a decision from the U.S. Supreme Court.

Greenhouse Gas Emissions — NRG emits CO₂ (and small quantities of other GHGs) when generating electricity at a majority of its facilities. Nearly all (>99%) of NRG's domestic GHG emissions are subject to federal (U.S. EPA) GHG reporting requirements.

NRG's climate goals are to reduce greenhouse gas emissions by 50% by 2025, from its current 2014 baseline, and to achieve net-zero emissions by 2050. Greenhouse gas emissions include directly controlled emissions, emissions from NRG's purchased energy, and emissions from employee business travel. In 2021, NRG's climate goals were certified by the Science Based Targets initiative as aligned with a 1.5 degree Celsius trajectory. From the current 2014 baseline to 2021, the Company's CO₂e emissions decreased from 61 million metric tons to 34 million metric tons, representing a cumulative 44% reduction. The decrease is attributed to reductions in fleet-wide annual net generation and a market-driven shift away from coal as a primary fuel to natural gas. The increase in emissions in 2021, as compared to 2020, was primarily due to higher power demand which was a result of the easing of COVID-19 pandemic lockdowns and the associated economic recovery. The Company is continuing to target a 50% reduction by 2025 and is on track to meet that goal.

As of December 31, 2021, less than 5% of the Company's consolidated operating revenues were derived from coal-fired operating assets.

The following charts reflect the Company's domestic generation portfolio, including leased facilities and those accounted for through equity method investments. Prior year information was adjusted to remove divested assets.



Byproducts, Wastes, Hazardous Materials and Contamination

In April 2015, the EPA finalized the rule regulating byproducts of coal combustion (e.g., ash and gypsum) as solid wastes under the RCRA. In September 2017, the EPA agreed to reconsider the rule. On July 30, 2018, the EPA promulgated a rule that amended the existing ash rule by extending some of the deadlines and providing more flexibility for compliance. On August 21, 2018, the D.C. Circuit found, among other things, that the EPA had not adequately regulated unlined ponds and legacy ponds. In 2019 and 2020, the EPA proposed several changes to this rule. On August 28, 2020, the EPA finalized "A Holistic Approach to Closure Part A: Deadline to Initiate Closure," which amended the April 2015 Rule to address the August 2018 D.C. Circuit decision and extend some of the deadlines. On November 12, 2020, the EPA finalized "A Holistic Approach to Closure Part B: Alternative Demonstration for Unlined Surface Impoundments," which further amended the April 2015 Rule to, among other things, provide procedures for requesting approval to operate existing ash impoundments with an alternate liner.

Domestic Site Remediation Matters

Under certain federal, state and local environmental laws, a current or previous owner or operator of a facility, including an electric generating facility, may be required to investigate and remediate releases or threatened releases of hazardous or toxic substances or petroleum products. NRG may be responsible for property damage, personal injury and investigation and remediation costs incurred by a party in connection with hazardous material releases or threatened releases. These laws impose liability without regard to whether the owner knew of or caused the presence of the hazardous substances, and the courts have interpreted liability under such laws to be strict (without fault) and joint and several. Cleanup obligations can often be triggered during the closure or decommissioning of a facility, in addition to spills during its operations. Further discussions of affected NRG sites can be found in Item 15 — Note 23, *Commitments and Contingencies*, to the Consolidated Financial Statements.

Jewett Mine Lignite Contract — The Company's Limestone facility historically burned lignite obtained from the Jewett mine, which was operated by TWCC. In 2019, the Jewett mine and related lignite supply agreement with NRG were acquired by Westmoreland Jewett Mining LLC ("Jewett Mining"), a subsidiary of Westmoreland Mining LLC pursuant to a plan of reorganization confirmed by the Texas Bankruptcy Court. Effective August 5, 2020, NRG's subsidiary, NRG Texas LLC, acquired all of the equity interests of Jewett Mining. Active mining under the lignite supply agreement ceased as of December 31, 2016; however, under the terms of the lignite supply agreement, Jewett Mining remains responsible for reclamation activities and NRG is responsible for all reclamation costs. NRG has recorded an adequate ARO liability. The Railroad Commission of Texas has imposed a bond obligation of approximately \$99 million for the reclamation of the Jewett mine, which NRG supports through surety bonds. The cost of the reclamation may exceed the value of the bonds. NRG may provide additional performance assurance if required by the Railroad Commission of Texas.

Nuclear Waste — The federal government's program to construct a nuclear waste repository at Yucca Mountain, Nevada was discontinued in 2010. Since 1998, the U.S. DOE has been in default of the federal government's obligations to begin accepting spent nuclear fuel, or SNF, and high-level radioactive waste, or HLW, under the Nuclear Waste Policy Act. Owners of nuclear plants, including the owners of STP, had been required to enter into contracts setting out the obligations of the owners and the U.S. DOE, including the fees to be paid by the owners for the U.S. DOE's services to license a spent fuel repository. Effective May 16, 2014, the U.S. DOE stopped collecting the fees.

On February 5, 2013, STPNOC entered into a settlement agreement with the U.S. DOE for payment of damages relating to the U.S. DOE's failure to accept SNF and HLW under the Nuclear Waste Policy Act through December 31, 2013, which has been extended three times through addendums to cover payments through December 31, 2022. There are no facilities for the reprocessing or permanent disposal of SNF currently in operation in the U.S., nor has the NRC licensed any such facilities. STPNOC currently stores all SNF generated by its nuclear generating facilities on-site. STPNOC plans to continue to assert claims against the U.S. DOE for damages relating to the U.S. DOE's failure to accept SNF and HLW.

Under the federal Low-Level Radioactive Waste Policy Act of 1980, as amended in 1985, the state of Texas is required to provide, either on its own or jointly with other states in a compact, for the disposal of all low-level radioactive waste generated within the state. Texas is currently in a compact with the state of Vermont, and the compact low-level waste facility located in Andrews County in Texas has been operational since 2012.

Water

The Company is required under the CWA to comply with intake and discharge requirements, requirements for technological controls and operating practices. As with air quality regulations, federal and state water regulations have become more stringent and imposed new requirements.

Effluent Limitations Guidelines — In November 2015, the EPA revised the Effluent Limitations Guidelines ("ELG") for Steam Electric Generating Facilities, which imposed more stringent requirements (as individual permits were renewed) for wastewater streams from FGD, fly ash, bottom ash, and flue gas mercury control. On September 18, 2017, the EPA promulgated a final rule that, among other things, postponed the compliance dates to preserve the status quo for FGD wastewater and bottom ash transport water by two years to November 2020 until the EPA amended the rule. On October 13, 2020, the EPA amended the 2015 ELG rule by: (i) altering the stringency of certain limits for FGD wastewater; (ii) relaxing the zero-discharge requirement for bottom ash transport water; and (iii) changing several deadlines. On July 26, 2021, the EPA announced that it is initiating a new rulemaking to evaluate revising the ELG rule. While the EPA is developing the new rule, the existing rule (as amended in 2020) will stay in place, and the EPA expects permitting authorities to continue to implement the current regulation. The EPA anticipates releasing a proposed rule in fall 2022. In October 2021, NRG informed its regulators that the Company intends to comply with the ELG by ceasing combustion of coal by the end of 2028 at its domestic coal units outside of Texas, and installing appropriate controls by the end of 2025 at its two plants in Texas.

Regional Environmental Developments

Ash Regulation in Illinois — On July 30, 2019, Illinois enacted legislation that requires the state to promulgate regulations regarding coal ash at surface impoundments. On April 15, 2021, the state promulgated the implementing regulation, which became effective on April 21, 2021. The new regulation requires NRG to apply for initial operating permits for its coal ash surface impoundments by October 31, 2021 and construction permits (for closure) starting in 2022.

Customers

NRG sells to a wide variety of customers, primarily end-use customers in the residential, commercial and industrial sectors. The Company owns and operates power plants to generate and sell power to wholesale customers, such as utilities and other intermediaries. The Company had no customer that comprised more than 10% of the Company's consolidated revenues for the year ended December 31, 2021.

Human Capital

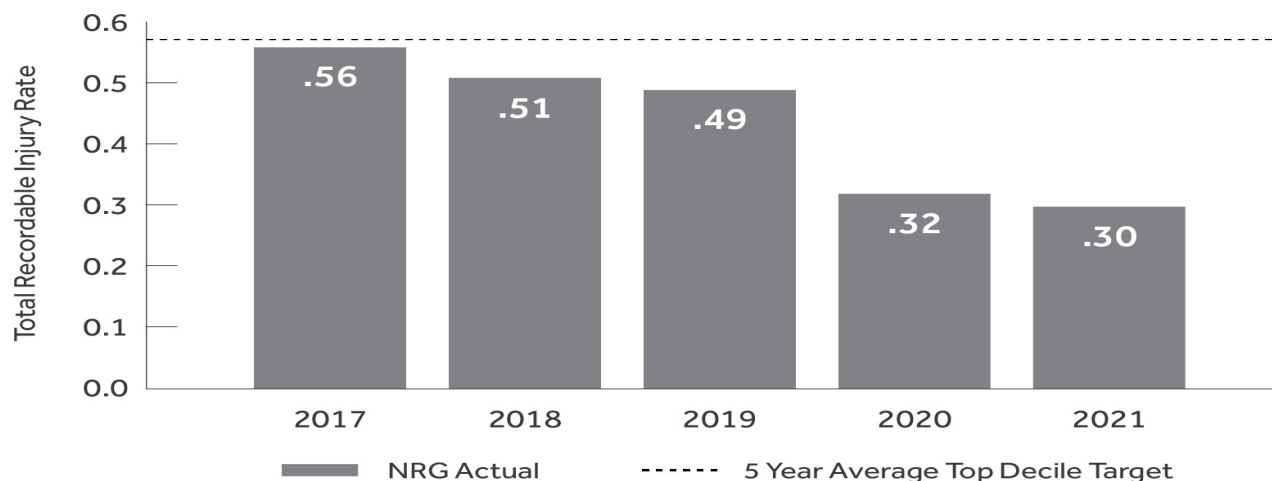
As of December 31, 2021, NRG and its consolidated subsidiaries had 6,635 employees, approximately 13% of whom were covered by U.S. collective bargaining agreements. During 2021, the Company did not experience any labor stoppages or labor disputes at any of its facilities.

NRG believes its employees are vital to its success and is committed to offering employees a rewarding career that provides opportunities for growth and the ability to make valuable contributions toward the achievement of the Company's business objectives. NRG focuses on safety, health and wellness, diversity, equity and inclusion, talent development and total rewards for its employees.

Safety

Safety is embedded in the culture at NRG. The Company strives to begin each meeting with a safety moment and regularly reminds its employees that safety comes first. NRG has achieved its targeted top decile safety record of Occupational Safety and Health Administration recordable injury rates in each of the 5 previous years.

NRG 5-Year Safety Record



Health and Wellness

For several years, NRG has invested in the well-being of its employees and their families. NRG provides programs that holistically support its employees' physical, emotional and financial wellness, allowing employees the opportunity to take control of their well-being and focus on what matters most to them for a healthy, secure future.

During 2020, the Company evaluated its approach to health and well-being in light of the circumstances resulting from the COVID-19 pandemic. In response to COVID-19, NRG implemented additional programs to provide services to support the needs of employees, including those working from home, such as programs that provided back-up childcare, expanded access to telemedicine (for both physical and mental health), and supported mental and emotional well-being through programs such as mindfulness. During 2021, the Company continued its support of employees by partnering with the National Council for Behavioral Health to roll out their Mental Health First Aid program. This program safely, respectfully and effectively opens the conversation about mental illness and addiction, encourages employees to recognize and take responsibility for their mental health, teaches managers to recognize and speak to an employee with a mental health concern before it creates performance problems, complements and supports existing benefit and wellness programs and company's policies and procedures.

Diversity, Equity and Inclusion

NRG is committed to diversity, equity and inclusion ("DE&I") as an integral part of the Company. In 2020, NRG completed a gender and race pay equity study to ensure that the Company's pay decisions were not influenced by gender, race, or other similar factors. The study showed equitable pay practices after accounting for education, experience, performance and location. NRG also conducted company-wide unconscious bias training to help all employees recognize, understand, and reduce implicit bias and offers various other related guides and tools to its employees and management.

In 2021, the Company focused on embedding DE&I in the Company's operations, culture and communications, by working with diverse suppliers, finding diverse talent, facilitating engagement and awareness of DE&I by employees, and committing to be accountable for our DE&I progress.

Talent Development

NRG deploys various talent development strategies and programs with the goal of ensuring a pipeline of leadership who can execute on the Company's strategy and drive value for all stakeholders. The Board of Directors regularly engages with management on leadership development and succession planning, including providing feedback on development plans and bench strength for key senior leader positions. The Board of Directors also has a structured program that allows directors to interact directly with individuals deeper within the organization whom management, through a robust talent assessment program, as well as mentoring relationships, has identified as high potential future leaders. In 2021, the Company launched an Executive Leadership Program to strengthen the identified pipeline of future leaders and create a cohort of high potential candidates for the program. The Company has a performance management tool that emphasizes a continuous feedback loop and a robust online training curriculum with topics including leadership, communication and productivity.

Total Rewards

NRG seeks to provide the median target of compensation and benefits, benchmarked against direct peers, industry, and, where appropriate, general peers. To ensure incentives are properly aligned with business needs and can attract and retain qualified employees, the Compensation Committee of the Board of Directors actively reviews the Company's total rewards programs, including benchmarking programs against peer groups, assessing the risks of programs and evaluating the design of the annual and long-term incentive programs. The Company offers full-time employees incentives designed to motivate and reward success. NRG continues to evaluate its offerings taking into consideration the needs of its employees to ensure they are competitive and best serve its employees. Every two years, the Company engages an independent third party to benchmark its compensation and benefits programs against its peers and report the results to the Compensation Committee of the Board of Directors.

For further discussion and recent available data regarding the Company's efforts and programs please see the Company's 2021 Proxy Statement and 2020 Sustainability Report, which are available on the Company's website at: www.nrg.com. Information included in these documents is not intended to be incorporated into this Form 10-K.

Available Information

NRG's annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to section 13(a) or 15(d) of the Exchange Act are available free of charge through the SEC's website, www.sec.gov, and through the Company's website, www.nrg.com, as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. The Company also routinely posts press releases, presentations, webcasts, sustainability reports and other information regarding the Company on the Company's website. The information posted on the Company's website is not a part of this report.

Item 1A — Risk Factors

NRG's risk factors are grouped into the following categories: (i) Risks Related to the Acquisition of Direct Energy; (ii) Risks Related to the Operation of NRG's Business; (iii) Risks Related to Governmental Regulation and Laws; (iv) Risks Related to Public Health Threats; and (v) Risks Related to Economic and Financial Market Conditions, and the Company's Indebtedness.

Risks Related to the Acquisition of Direct Energy

The acquisition of Direct Energy may not achieve its intended results.

Achieving the anticipated benefits of cost savings and operating efficiencies of the acquisition is subject to a number of uncertainties, including whether the businesses of NRG and Direct Energy are integrated in an efficient and effective manner. Failure to achieve these anticipated benefits could result in increased costs, lower-than-expected revenues or income generated by the combined company and diversion of management's time and energy, which could have an adverse effect on the Company's business, financial results and prospects.

The Company will be subject to business uncertainties related to Direct Energy that could adversely affect its financial results.

Uncertainty about the effects of the acquisition of Direct Energy on employees, customers and suppliers may have an adverse effect on NRG's business. Although the Company intends to take steps designed to reduce any adverse effects, these uncertainties may impair its ability to attract, retain and motivate key personnel for a period of time, and could cause customers, suppliers and others that deal with it to seek to change existing business relationships.

Employee retention and recruitment may be particularly challenging, as employees and prospective employees may experience uncertainty about their future roles with the Company. If, despite the Company's retention and recruiting efforts, key employees depart or fail to accept employment with NRG because of issues relating to the uncertainty and difficulty of integration or a desire not to remain with NRG, the Company's financial results could be affected.

The integration of NRG and Direct Energy may disrupt or have a negative impact on the Company's business.

The acquisition of Direct Energy is complex, and the Company will devote significant time and resources to integrating its operations with the operations of NRG. NRG could have difficulty integrating the acquired assets and personnel of Direct Energy with its own. The integration of NRG and Direct Energy may place a significant burden on management and internal resources. The diversion of management attention away from ongoing business concerns and any difficulties encountered in the transition and integration process could affect the Company's business, results of operations and financial condition. Risks that could impact the Company negatively include:

- the difficulty of managing and integrating Direct Energy and its operations;
- the potential disruption of the ongoing businesses and distraction of management;
- changes in our business focus and/or management;
- difficulties in implementing and maintaining uniform processes, systems, standards, controls, procedures, practices, policies and compensation standards;
- unanticipated issues in integrating information technology, communications, and other systems;
- the possibility of faulty assumptions underlying expectations regarding the integration process;
- the potential impairment of relationships with employees and partners;
- unforeseen expenses associated with the acquisition of Direct Energy, including delays to the integration of Direct Energy's business as a result of the COVID-19 pandemic;
- the potential difficulty in managing an increased number of locations and employees;
- the potential loss of valuable employees;
- difficulty addressing any possible differences in corporate cultures and management philosophies;
- unanticipated changes in federal or state laws or regulations; and
- the effect of any government regulations that relate to the business acquired.

If the Company is not successful in addressing these risks effectively, the business could be impacted. Many of these factors will be outside of the Company's control, and any one of them could result in delays, increased costs, decreases in the amount of expected revenues and diversion of management's time and energy, which could materially affect NRG's business, results of operations and financial condition.

Risks Related to the Operation of NRG's Business

NRG's financial performance may be impacted by price fluctuations in the retail and wholesale power and natural gas markets, as well as fluctuations in coal and oil markets and other market factors that are beyond the Company's control.

Market prices for power, capacity, ancillary services, natural gas, coal and oil are unpredictable and tend to fluctuate substantially. Unlike most other commodities, electric power can only be stored on a very limited basis and generally must be produced concurrently with its use. As a result, power prices are subject to significant volatility due to supply and demand imbalances, especially in the day-ahead and spot markets. Long and short-term power and gas prices may also fluctuate substantially due to other factors outside of the Company's control, including:

- changes in generation capacity in the Company's markets, including the addition of new supplies of power as a result of the development of new plants, expansion of existing plants, the continued operation of uneconomic power plants due to state subsidies, retirement of existing plants or addition of new transmission capacity;
- environmental regulations and legislation;
- electric supply disruptions, including plant outages and transmission disruptions;
- changes in power and gas transmission infrastructure;
- fuel price volatility and transportation capacity constraints or inefficiencies;
- changes in law, including judicial decisions;
- weather conditions, including extreme weather conditions and seasonal fluctuations, including the effects of climate change;
- changes in commodity prices and the supply of commodities, including but not limited to natural gas, coal and oil;
- changes in the demand for power or gas, or in patterns of power or gas usage, including the potential development of demand-side management tools and practices, distributed generation, and more efficient end-use technologies;
- development of new fuels, new technologies and new forms of competition for the production of power;
- economic and political conditions;
- federal, state and provincial power regulations and legislation, and regulations and actions of the ISO and RTOs;
- changes in prices related to RECs; and
- changes in capacity prices and capacity markets.

While retail rates are generally designed to allow retail sellers of electricity and natural gas to pass through price fluctuations and other changes to costs, the Company may not be able to pass through all such changes to customers. For example, serving retail power customers in ISOs that have a capacity market exposes the Company to the risk that capacity costs can change and may not be recoverable, or the Company may engage in sales of power at fixed prices. Additionally, increases in wholesale costs to retail customers may cause additional customer defaults or increased customer attrition, or may be impacted by regulatory rules.

Further, in low natural gas price environments, natural gas can be the more cost-competitive fuel compared to coal for generating electricity. The Company enters into guaranteed supply contracts to provide for the amount of coal needed to operate its base load coal-fired generating facilities, the Company may experience periods where it holds excess amounts of coal if fuel pricing results in the Company reducing or idling coal-fired generating facilities. In addition, the Company may incur costs to terminate supply contracts for coal in excess of its generating requirements.

Such factors and the associated fluctuations in power prices have affected the Company's wholesale and retail profitability in the past and are expected to continue to do so in the future.

Volatile power and gas supply costs and demand for power and gas could adversely affect the financial performance of NRG's retail operations.

NRG's retail power operations purchase a significant portion of their supply from third parties. All of the gas sold by the Company in retail and wholesale markets is purchased from third parties. As a result, financial performance depends on the ability to obtain adequate supplies of power and gas from third parties at prices below the prices NRG charges its customers. Consequently, the Company's earnings and cash flows could be adversely affected in any period in which the wholesale power or gas prices rise at a greater rate than the rates the Company can charge to customers. The price of wholesale electricity and gas supply purchases associated with the retail operations' energy commitments can be different than that reflected in the rates charged to customers due to, among other factors:

- varying supply procurement contracts used and the timing of entering into related contracts;
- subsequent changes in the overall price of natural gas;

- daily, monthly or seasonal fluctuations in the price of natural gas relative to the 12-month forward prices;
- transmission and transportation constraints and the Company's ability to move power or gas to its customers; and
- changes in market heat rate (i.e., the relationship between power and natural gas prices).

The Company's earnings and cash flows could also be adversely affected in any period in which its customers' actual usage of electricity or gas significantly varies from the forecasted usage, which could occur due to, among other factors, weather events, changes in usage patterns, competition and economic conditions.

Substantially all of NRG's businesses operates, wholly or partially, without long-term power sale agreements.

Many of NRG's retail customers are contracted for a period of one year or less, and NRG may or may not hedge its retail power sales exposure, or may hedge in a manner that is not effective at managing quantity or price risk in the retail market. In addition, many of NRG's generation facilities are exposed to market risk because they operate as "merchant" facilities without long-term power sales agreements for some or all of their generating capacity and output. Without the benefit of long-term power sales or purchase agreements, and without long-term load obligations, NRG cannot be sure that it will be able to sell or purchase power at commercially attractive rates or that its generation facilities will be able to operate profitably. This could lead to future impairments of the Company's property, plants and equipment, the closing of certain of its facilities or the loss of retail customers, which could have a material adverse effect on the Company's results of operations, financial condition or cash flows.

Competition may have a material adverse effect on NRG's results of operations, cash flows and the market value of its assets.

NRG has numerous competitors in all aspects of its business, and additional competitors may enter the industry. The Company's retail operations specifically face competition for customers. Competitors may offer different products, lower prices, and other incentives which may attract customers away from the Company. In some retail electricity markets, the principal competitor may be the incumbent utility. The incumbent utility has the advantage of long-standing relationships with its customers and strong brand recognition. Furthermore, NRG may face competition from other energy service providers, other energy industry participants, or nationally branded providers of consumer products and services, who may develop businesses that will compete with NRG.

The Company's plant operations face competition from newer or more efficient plants owned by competitors, which may put some of the Company's plants at a disadvantage to the extent these competitors are able to consume the same or less fuel as the Company's plant. Over time, the Company's plants may be unable to compete with these more efficient plants, which could result in retirements.

NRG's competitors may have greater liquidity, greater access to credit and other financial resources, lower cost structures, more effective risk management policies and procedures, greater ability to incur losses, longer-standing relationships with customers, greater potential for profitability from retail sales or greater flexibility in the timing of their sale of generation capacity and ancillary services than NRG does. Competitors may also have better access to subsidies or other out-of-market payments that put NRG at a competitive disadvantage.

NRG's competitors may be able to respond more quickly to new laws or regulations or emerging technologies, or devote greater resources to marketing of retail energy than NRG can. In addition, current and potential competitors may make strategic acquisitions or establish cooperative relationships among themselves or with third parties. Accordingly, it is possible that new competitors or alliances among current and new competitors may emerge and rapidly gain significant market share.

There can be no assurance that NRG will be able to compete successfully against current and future competitors, and any failure to do so would have a material adverse effect on the Company's business, financial condition, results of operations and cash flow.

NRG's costs, results of operations, financial condition and cash flows could be adversely impacted by disruption of its fuel supplies.

NRG relies on natural gas, coal and oil to fuel a majority of its power generation facilities. Grid operations depend on the continuing financial viability of contractual counterparties, as well as the infrastructure (including rail lines, rail cars, barge facilities, roadways, riverways and natural gas pipelines) available to serve generation facilities and to ensure that there is sufficient power produced to meet retail demand. As a result, the Company's wholesale generation facilities are subject to the risks of disruptions or curtailments in the production of power at its generation facilities if no fuel is available at any price, if a counterparty fails to perform or if there is a disruption in the fuel delivery infrastructure.

NRG routinely hedges both its wholesale sales and purchases to support its retail load obligations. In order to hedge these obligations, the Company may enter into long-term and short-term contracts for the purchase and delivery of fuel. Many of the forward power sales contracts do not allow the Company to pass through changes in fuel costs or discharge the power sale obligations in the case of a disruption in fuel supply due to force majeure events or the default of a fuel supplier or transporter.

Disruptions in the Company's fuel supplies or power supply arrangements may therefore require it to find alternative fuel sources at higher costs, to find other sources of power to deliver to retail customers or other counterparties at a higher cost, or to pay damages to counterparties for failure to deliver power or sell electricity or natural gas as contracted. Any such event could have a material adverse effect on the Company's financial performance.

NRG also buys significant quantities of energy and fuel on a short-term or spot market basis. Prices sometimes rise or fall significantly over a relatively short period of time. The price NRG can obtain for the sale of energy may not rise at the same rate, or may not rise at all, to match a rise in fuel or delivery costs. Retail rates may also not rise at the same rate or may not rise at all. This may have a material adverse effect on the Company's financial performance.

NRG's plant operating characteristics and equipment, particularly at its coal-fired plants, often dictate the specific fuel quality to be combusted. The availability and price of specific fuel qualities may vary due to supplier financial or operational disruptions, transportation disruptions and force majeure. At times, coal of specific quality may not be available at any price or the Company may not be able to transport such coal to its facilities on a timely basis. In this case, the Company may not be able to run the coal facility even if it would be profitable. Operating a coal facility with different quality coal can lead to emission or operating problems. If the Company had sold forward the power from such a coal facility, it could be required to supply or purchase power from alternate sources, perhaps at a loss. This could have a material adverse impact on the financial results of specific plants and on the Company's results of operations.

There may be periods when NRG will not be able to meet its commitments under forward sale or purchase obligations at a reasonable cost or at all.

The Company may sell fixed price gas as a proxy for power. Because the obligations under most of the Company's forward sale agreements are not contingent on a unit being available to generate power, NRG is generally required to deliver power to the buyer, even in the event of a plant outage, fuel supply disruption or a reduction in the available capacity of the unit. To the extent that the Company does not have sufficient lower-cost capacity to meet its commitments under its forward sale obligations, the Company would be required to supply replacement power either by running its other, higher cost power plants or by obtaining power from third-party sources at market prices that could substantially exceed the contract price. If NRG fails to deliver the contracted power, it would be required to pay the difference between the market price at the delivery point and the contract price, and the amount of such payments could be substantial.

NRG's trading operations and use of hedging agreements could result in financial losses that negatively impact its results of operations, and NRG's hedging activities may increase the volatility in the Company's quarterly and annual financial results.

The Company typically enters into hedging agreements, including contracts to purchase or sell commodities at future dates and at fixed prices, to manage the commodity price risks inherent in its business. The Company's risk management policies and hedging procedures may not mitigate risk as planned, and the Company may fail to fully or effectively hedge its commodity supply and price risk. In addition, these activities, although intended to mitigate price volatility, expose the Company to other risks. When the Company sells or buys power or gas forward, it gives up the opportunity to buy or sell at the future price, which not only may result in lost opportunity costs but also may require the Company to post significant amounts of cash collateral or other credit support to its counterparties. The Company also relies on counterparty performance under its hedging agreements and is exposed to the credit quality of its counterparties under those agreements. Further, if the values of the financial contracts change in a manner that the Company does not anticipate, or if a counterparty fails to perform under a contract, it could harm the Company's business, operating results or financial position.

NRG does not typically hedge the entire exposure of its operations against commodity price volatility. To the extent it does not hedge against commodity price volatility, the Company's results of operations and financial position may be improved or diminished based upon movement in commodity prices.

NRG may engage in trading activities, including the trading of power, fuel and emissions allowances that are not directly related to the operation of the Company's generation facilities or the management of related risks. These trading activities take place in volatile markets and some of these trades could be characterized as speculative. The Company would expect to settle these trades financially rather than through the production of power or the delivery of fuel. This trading activity may expose the Company to the risk of significant financial losses which could have a material adverse effect on its business and financial condition.

NRG generally attempts to balance its fixed-price physical and financial purchases and sales commitments in terms of contract volumes and the timing of performance and delivery obligations through the use of financial and physical derivative contracts. These derivatives are accounted for in accordance with the FASB ASC 815, *Derivatives and Hedging*, or ASC 815, which requires the Company to record all derivatives on the balance sheet at fair value with changes in the fair value resulting from fluctuations in the underlying commodity prices immediately recognized in earnings, unless the derivative qualifies for

cash flow hedge accounting treatment or a scope exception. As a result, the Company's quarterly and annual results are subject to significant fluctuations caused by changes in market prices.

NRG may not have sufficient liquidity to hedge market risks effectively.

The Company is exposed to market risks through its retail and wholesale operations, which involve the purchase of electricity and natural gas for resale, the sale of energy, capacity and related products, and the purchase and sale of fuel, transmission services and emission allowances. These market risks include, among other risks, volatility arising from location and timing differences that may be associated with buying and transporting fuel, converting fuel into energy and delivering energy to a buyer.

NRG undertakes these market activities through agreements with various counterparties. Many of the Company's agreements with counterparties include provisions that require the Company to provide guarantees, offset or netting arrangements, letters of credit, a first lien on assets and/or cash collateral to protect the counterparties against the risk of the Company's default or insolvency. The amount of such credit support that must be provided typically is based on the difference between the price of the commodity in a given contract and the market price of the commodity. Significant movements in market prices can result in the Company being required to provide cash collateral and letters of credit in very large amounts. The effectiveness of the Company's strategy may depend on the amount of collateral available to enter into or maintain these contracts, and liquidity requirements may be greater than the Company anticipates or will be able to meet. Without a sufficient amount of working capital to post as collateral in support of performance guarantees or as a cash margin, the Company may not be able to manage price volatility effectively or to implement its strategy. An increase in the amount of letters of credit or cash collateral required to be provided to the Company's counterparties may negatively affect the Company's liquidity and financial condition.

Further, if retail customers use more power or gas than expected, or if any of NRG's facilities experience unplanned outages, the Company may be required to procure additional power or gas at spot market prices to fulfill contractual commitments. Without adequate liquidity to meet margin and collateral requirements, the Company may be exposed to significant losses, may miss significant opportunities, and may have increased exposure to the volatility of spot markets.

NRG relies on storage, transportation assets and suppliers, which it does not own or control, to deliver natural gas.

The Company depends on natural gas pipelines and other transportation and storage facilities owned and operated by third parties to deliver natural gas to wholesale and retail markets and to provide retail energy services to customers. The Company's ability to provide natural gas for its present and projected customers will depend upon its suppliers' ability to obtain and deliver supplies of natural gas, as well as NRG's ability to acquire supplies directly from new sources. Factors beyond the control of the Company and its suppliers may affect the Company's ability to deliver such supplies. These factors include other parties' control over the drilling of new wells and the facilities to transport natural gas to the Company's receipt points, development of additional interstate pipeline infrastructure, availability of supply sources competition for the acquisition of natural gas, priority allocations, impact of severe weather disruptions to natural gas supplies and the regulatory and pricing policies of federal and state regulatory agencies, as well as the availability of Canadian reserves for export to the U.S. Energy deregulation legislation may increase competition among natural gas utilities and impact the quantities of natural gas requirements needed for sales service. If supply, transportation or storage is disrupted, including for reasons of force majeure, the ability of the Company to sell and deliver its products and services may be hindered. As a result, the Company may be responsible for damages incurred by its customers, such as the additional cost of acquiring alternative supply at then-current market rates. These conditions could have a material impact on the Company's financial condition, results of operations and cash flows.

Operation of power generation facilities involves significant risks and hazards customary to the power industry that could have a material adverse effect on NRG's revenues and results of operations, and NRG may not have adequate insurance to cover these risks and hazards.

The ongoing operation of NRG's facilities involves risks that include the breakdown or failure of equipment or processes, performance below expected levels of output or efficiency and the inability to transport the Company's products to its customers in an efficient manner due to a lack of transmission capacity. Unplanned outages of generating units, including extensions of scheduled outages due to mechanical failures or other problems occur from time to time and are an inherent risk of the Company's business. Unplanned outages typically increase the Company's operation and maintenance expenses and may reduce the Company's revenues as a result of selling fewer MWh or incurring non-performance penalties and/or require NRG to incur significant costs as a result of obtaining replacement power from third parties in the open market or running one of its higher cost units to satisfy the Company's forward power sales obligations. NRG's inability to operate the Company's plants efficiently, manage capital expenditures and costs, and generate earnings and cash flow from the Company's asset-based businesses could have a material adverse effect on the Company's results of operations, financial condition or cash flows.

In addition, NRG provides plant operations and commercial services to a variety of third-parties. There is a risk that mistakes, mis-operations, or actions taken by these third-parties could be attributed to NRG, including the risk of investigation

or penalties being assessed to NRG in connection with the services it offers, or that regulators could question whether NRG had the appropriate safeguards in place.

Power generation involves hazardous activities, including acquiring, transporting and unloading fuel, operating large pieces of rotating equipment and delivering electricity to transmission and distribution systems. In addition to natural risks such as earthquake, flood, lightning, hurricane and wind, other hazards, such as fire, explosion, structural collapse and machinery failure are inherent risks in the Company's operations. These and other hazards can cause significant personal injury or loss of life, severe damage to and destruction of property, plant and equipment, contamination of, or damage to, the environment and suspension of operations. The occurrence of any one of these events may result in NRG being named as a defendant in lawsuits asserting claims for substantial damages, including for environmental cleanup costs, personal injury and property damage and fines and/or penalties.

NRG maintains an amount of insurance protection that it considers adequate, obtains warranties from vendors and obligates contractors to meet certain performance levels, but the Company cannot provide any assurance that these measures will be sufficient or effective under all circumstances and against all hazards or liabilities to which it may be subject. A successful claim for which the Company is not fully insured or protected could hurt its financial results and materially harm NRG's financial condition. NRG cannot provide any assurance that its insurance coverage will continue to be available at all or at rates or on terms similar to those presently available. Any losses not covered by insurance could have a material adverse effect on the Company's financial condition, results of operations or cash flows.

Supplier and/or customer concentration may expose the Company to significant financial credit or performance risks.

NRG often relies on a single contracted supplier or a small number of suppliers for the provision of fuel, transportation of fuel, chemicals and other services required for the operation of certain of its facilities. If these suppliers cannot perform, the Company utilizes the marketplace to provide these services. There can be no assurance that the marketplace can provide these services as, when and where required or at comparable prices.

The Company may also hedge a portion of its exposure to power and fuel price fluctuations through various physical or financial agreements with counterparties. Counterparties to these agreements may breach or may be unable to perform their obligations, and in case of renewable generation, such counterparties may be subject to additional risks, such as facility development and transmission risks, unfavorable weather and atmospheric conditions, and mechanical or operational failures. NRG may not be able to enter into replacement agreements on terms as favorable as its existing agreements, or at all. If the Company is unable to enter into replacement purchase agreements or other replacement hedging agreements, the Company would be exposed to market price volatility and the risk that fuel and transportation may not be available during certain periods at any price.

The failure of any supplier or customer to fulfill its contractual obligations to NRG could have a material adverse effect on the Company's financial results. Consequently, the financial performance of the Company's facilities is dependent on the credit quality of, and continued performance by, suppliers and customers.

Maintenance, expansion and refurbishment of power generation facilities involve significant risks that could result in unplanned power outages or reduced output and could have a material adverse effect on NRG's results of operations, cash flows and financial condition.

NRG's facilities require periodic maintenance and repair. Any unexpected failure, including failure associated with breakdowns, forced outages or any unanticipated capital expenditures could result in reduced profitability.

NRG cannot be certain of the level of capital expenditures that will be required due to changing environmental and safety laws (including changes in the interpretation or enforcement thereof) needed facility repairs and unexpected events (such as natural disasters or terrorist attacks). The unexpected requirement of large capital expenditures could have a material adverse effect on the Company's liquidity and financial condition.

NRG and its subsidiaries have guaranteed the performance of third parties, which may result in substantial costs in the event of non-performance.

NRG and its subsidiaries have issued certain guarantees of the performance of others, which obligate NRG and its subsidiaries to perform in the event that the third parties do not perform. In the event of non-performance by the third parties, NRG could incur substantial cost to fulfill their obligations under these guarantees. Such performance guarantees could have a material impact on the operating results, financial condition, or cash flows of the Company.

NRG relies on power transmission and distribution facilities that it does not own or control and that are subject to transmission constraints within a number of the Company's core regions.

NRG depends on transmission and distribution facilities owned and operated by others to deliver power to its customers. If transmission or distribution is disrupted, including by force majeure events, or if the transmission or distribution

infrastructure is inadequate, NRG's ability to deliver power may be adversely impacted. The Company also cannot predict whether transmission or distribution facilities will be expanded in specific markets to accommodate competitive access to those markets.

In addition, in certain of the markets in which NRG operates, energy transmission congestion may occur and the Company may be deemed responsible for congestion costs associated with power sales or purchases, or retail sales, particularly where the Company's load is not co-located with its retail sales obligations. If NRG were liable for such congestion costs, the Company's financial results could be adversely affected.

Rates and terms for service of certain residential and commercial customers in Alberta are subject to regulatory review and approval.

The Company owns Direct Energy Regulated Services, which serves as a regulated rate supplier for residential and commercial energy customers in portions of the province of Alberta. It is required to engage in regulatory approval proceedings as a part of the process of establishing the terms and rates for sales of power and natural gas. These proceedings typically involve multiple parties, including governmental bodies and officials, consumer advocacy groups and various consumers of energy, who have differing concerns but who have the common objective of limiting rate increases or even reducing rates. Decisions are subject to appeal, potentially leading to additional uncertainty associated with the approval proceedings. The potential duration of such proceedings creates a risk that rates ultimately approved by the applicable regulatory body may not be sufficient for the Company to recover its costs by the time the rates become effective. Established rates are also subject to subsequent reviews by regulators, whereby various portions of rates could be adjusted, subject to refund or disallowed. In certain instances, the Company could agree to negotiated settlements related to various rate matters and other cost recovery elements. These settlements are subject to regulatory approval. The ultimate outcome and timing of regulatory rate proceedings have a significant effect on the Company to recover its costs or earn an adequate return. In addition, subsequent legislative or regulatory action could alter the terms on which the regulated business operates and future earnings could be negatively impacted. The Company also operates a competitive energy supply business in Alberta that is not subject to rate regulation and is subject to stringent requirements to segregate operations and information relating to the competitive business from the regulated business. Failure to comply with these and other requirements on the business could subject the Company's regulated and competitive businesses in Alberta to fines, penalties, and restrictions on the ability to continue business.

Because NRG owns less than a majority of the ownership interests of some of its project investments, the Company cannot exercise complete control over their operations.

NRG has limited control over the operation of some project investments and joint ventures because the Company's investments are in projects where it beneficially owns less than a majority of the ownership interests. NRG seeks to exert a degree of influence with respect to the management and operation of projects in which it owns less than a majority of the ownership interests by negotiating to obtain positions on management committees or to receive certain limited governance rights, such as rights to veto significant actions. However, the Company may not always succeed in such negotiations. NRG may be dependent on its co-venturers to operate such projects. The Company's co-venturers may not have the level of experience, technical expertise, human resources management or other attributes necessary to operate these projects optimally. The approval of co-venturers also may be required for NRG to receive distributions of funds from projects or to transfer the Company's interest in projects.

NRG may be unable to integrate the operations of acquired entities in the manner expected.

NRG enters into acquisitions that result in various benefits, including, among other things, cost savings and operating efficiencies. Achieving the anticipated benefits of these acquisitions depends on whether the businesses can be integrated into NRG in an efficient and effective manner. The integration process could take longer than anticipated and could result in the loss of valuable employees, the disruption of NRG's businesses, processes and systems or inconsistencies in standards, controls, procedures, practices, policies and compensation arrangements, any of which could divert the attention of management and adversely affect the Company's ability to achieve the anticipated benefits of the acquisitions. NRG may have difficulty addressing possible differences in corporate cultures and management philosophies. Failure to achieve these anticipated benefits could result in increased costs or decreases in the amount of expected revenues and could adversely affect NRG's future business, financial condition, operating results and prospects.

Future acquisition or disposition activities could involve unknown risks and may have materially adverse effects and NRG may be subject to trailing liabilities from businesses that it disposes of or that are inactive.

NRG may in the future acquire or dispose of businesses or assets, acquire or sell books of retail customers, or pursue other business activities, directly or indirectly through subsidiaries, that involve a number of risks. The acquisition of companies and assets is subject to substantial risks, including the failure to identify material problems during due diligence, the risk of over-paying for assets or customers, the ability to retain customers and the inability to arrange financing for an acquisition as may be required or desired. Further, the integration and consolidation of acquisitions requires substantial human, financial and other

resources and, ultimately, the Company's acquisitions may not be successfully integrated. In the case of dispositions, such risks may relate to employment matters, counterparties, regulators and other stakeholders in the disposed business, risks relating to separating the disposed assets from NRG's business, risks related to the management of NRG's ongoing business, risks unknown to NRG at the time, and other financial, legal and operational risks related to such disposition. In addition, NRG may be subject to material trailing liabilities from disposed businesses. Any such risk may result in one or more costly disputes or litigation. There can be no assurances that any future acquisitions will perform as expected or that the returns from such acquisitions will support the indebtedness incurred to acquire them or the capital expenditures needed to develop them. There can also be no assurances that NRG will realize the anticipated benefits from any such dispositions. The failure to realize the anticipated returns or benefits from an acquisition or disposition could adversely affect NRG's results of operations, cash flows and financial condition.

Risks that are beyond NRG's control, including but not limited to acts of terrorism or related acts of war, natural disaster, hostile cyber intrusions, data breaches or other catastrophic events could have a material adverse effect on NRG's financial condition, results of operations and cash flows.

NRG's generation facilities and the facilities of third parties on which they rely may be targets of terrorist activities, as well as events occurring in response to or in connection with such activities, all of which could cause environmental repercussions and/or result in full or partial disruption of the facilities ability to generate, transmit, transport or distribute electricity or natural gas. Strategic targets, such as energy-related facilities, may be at greater risk of future terrorist activities than other domestic targets. Any such environmental repercussions or disruption could result in a significant decrease in revenues or significant reconstruction or remediation costs beyond what could be recovered through insurance policies, which could have a material adverse effect on the Company's financial condition, results of operations and cash flows. In addition, significant weather events or terrorist actions could damage or shut down the power or gas transmission and distribution facilities upon which the Company is dependent, which may reduce retail volume for extended periods of time. Power or gas supply may be sold at a loss if these events cause a significant loss of retail customer demand.

Numerous functions affecting the efficient operation of NRG's businesses depend on the secure and reliable storage, processing and communication of electronic data and the use of sophisticated computer hardware and software systems. Hostile cyber intrusions, including those targeting information systems, as well as electronic control systems used at the generation facilities and for the distribution systems, could severely disrupt business operations and result in loss of service to customers, as well as significant expense to repair security breaches or system damage. The operation of NRG's generation plants, including STP, and of NRG's energy and fuel trading businesses rely on cyber-based technologies and, therefore, are subject to the risk that such systems could be the target of disruptive actions, particularly through cyber-attack or cyber intrusion, including by computer hackers, foreign governments and cyber terrorists, or otherwise be compromised by unintentional events. As a result, operations could be interrupted, property could be damaged and sensitive customer information could be lost or stolen, causing NRG to incur significant losses of revenues, other substantial liabilities and damages, costs to replace or repair damaged equipment and damage to NRG's reputation. In addition, NRG may experience increased capital and operating costs to implement increased security for its cyber systems and plants.

In addition, the Company requires access to sensitive data in the ordinary course of business. Examples of sensitive data are names, addresses, account information, historical electricity usage, expected patterns of use, payment history, credit bureau data, credit and debit card account numbers, driver's license numbers, social security numbers and bank account information. NRG provides sensitive data to vendors and service providers, who require access to this information in order to provide services to NRG, such as call center operations. If a significant breach occurs or if sensitive data that was entrusted to the Company were mishandled, the reputation of NRG and its businesses may be adversely affected, customer confidence may be diminished, or NRG and its retail operations may be subject to legal claims, any of which may contribute to the loss of customers and have a negative impact on the business and/or results of operations.

The Company has made investments, and may continue to make investments, in new business initiatives predominantly focused on consumer products and in markets that may not be successful, may not achieve the intended financial results or may result in product liability and reputational risk that could adversely affect the Company.

NRG continues to pursue growth in its existing businesses and markets and further diversification across the competitive energy value chain. Such initiatives may involve significant risks and uncertainties, including distraction of management from current operations, inadequate return on capital, and unidentified issues not discovered in the diligence performed prior to launching an initiative or entering a market.

As part of these initiatives, the Company may be liable to customers for any damage caused to customers' homes, facilities, belongings or property during the installation of Company products and systems, such as home back-up generators and residential HVAC system repairs, installation and replacements. Where such work is performed by independent contractors, such as repairs performed under the Company's home warranty and protection plan products, the Company may nonetheless face claims and costs for damage. In addition, shortages of skilled labor for Company projects could significantly delay a

project or otherwise increase its costs. The products that the Company sells or manufactures may expose the Company to product liability claims relating to personal injury, death, or environmental or property damage, and may require product recalls or other actions. Although the Company maintains liability insurance, the Company cannot be certain that its coverage will be adequate for liabilities actually incurred or that insurance will continue to be available to the Company on economically reasonable terms, or at all. Further, any product liability claim or damage caused by the Company could significantly impair the Company's brand and reputation, which may result in a failure to maintain customers and achieve the Company's desired growth initiatives in these new businesses.

Changes in technology may impair the value of NRG's power plants and the attractiveness of its retail products, and the Company may potentially be affected by emerging technologies that may over time affect change in capacity markets and the energy industry overall with the inclusion of distributed generation and clean technology.

Research and development activities are ongoing in the industry to provide alternative and more efficient technologies to produce power, including wind, photovoltaic (solar) cells, hydrogen, energy storage, and improvements in traditional technologies and equipment, such as more efficient gas turbines. Advances in these or other technologies could reduce the costs of power production to a level below what the Company has currently forecasted, which could adversely affect its cash flows, results of operations or competitive position. Technology, including distributed technology or changes in retail rate structures, may also have a material impact on the Company's ability to retain retail customers.

Some emerging technologies, such as distributed renewable energy technologies, broad consumer adoption of electric vehicles and energy storage devices, could affect the price of energy. These emerging technologies may affect the financial viability of utility counterparties and could have significant impacts on wholesale market prices, which could ultimately have a material adverse effect on NRG's financial condition, results of operations and cash flows.

NRG's business, financial condition and results of operations could be adversely impacted by strikes or work stoppages by its unionized employees or inability to replace employees as they retire.

As of December 31, 2021, approximately 13% of NRG's employees were covered by collective bargaining agreements. In the event that the Company's union employees strike, participate in a work stoppage or slowdown or engage in other forms of labor strife or disruption, NRG would be responsible for procuring replacement labor or the Company could experience reduced power generation or outages. Although NRG's ability to procure such labor is uncertain, contingency staffing planning is completed as part of each respective contract negotiations. Strikes, work stoppages or the inability to negotiate future collective bargaining agreements on favorable terms could have a material adverse effect on the Company's business, financial condition, results of operations and cash flows. In addition, a number of the Company's employees at NRG's plants are close to retirement. The Company's inability to replace retiring workers could create potential knowledge and expertise gaps as such workers retire.

Risks Related to Governmental Regulation and Laws

NRG's business is subject to substantial energy regulation and may be adversely affected by legislative or regulatory changes, as well as liability under, or any future inability to comply with, existing or future energy regulations or requirements.

NRG's business is subject to extensive U.S. federal, state and local laws and foreign laws. Compliance with, or changes to, the requirements under these legal regimes may cause the Company to incur significant additional costs, reduce the Company's ability to hedge exposure or to sell retail power within certain states or to certain classes of retail customers, or restrict the Company's marketing practices, its ability to pass through costs to retail customers, or its ability to compete on favorable terms with competitors, including the incumbent utility. Retail competition and home warranty services are regulated on a state-by-state or at the province-by-province level and are highly dependent on state and provincial laws, regulations and policies, which could change at any moment. Failure to comply with such requirements could result in the shutdown of a non-complying facility, the imposition of liens, fines, and/or civil or criminal liability.

Public utilities under the FPA are required to obtain FERC acceptance of their rate schedules for wholesale sales of electricity. Except for ERCOT generation facilities and power marketers, all of NRG's non-qualifying facility generating companies and power marketing affiliates in the U.S. make sales of electricity in interstate commerce and are public utilities for purposes of the FPA. FERC has granted each of NRG's generating and power marketing companies that make sales of electricity outside of ERCOT the authority to sell electricity at market-based rates. FERC's orders that grant NRG's generating and power marketing companies market-based rate authority reserve the right to revoke or revise that authority if FERC subsequently determines that NRG can exercise market power in transmission or generation, create barriers to entry, or engage in abusive affiliate transactions. In addition, NRG's market-based sales are subject to certain market behavior rules, and if any of NRG's generating and power marketing companies were deemed to have violated those rules, they are subject to potential disgorgement of profits associated with the violation and/or suspension or revocation of their market-based rate authority. If NRG's generating and power marketing companies were to lose their market-based rate authority, such companies would be required to obtain FERC's acceptance of a cost-of-service rate schedule and could become subject to the accounting, record-

keeping, and reporting requirements that are imposed on utilities with cost-based rate schedules. This could have a material adverse effect on the rates NRG charges for power from its facilities.

Substantially all of the Company's generation assets are also subject to the reliability standards promulgated by the designated Electric Reliability Organization (currently NERC) and approved by FERC. If NRG fails to comply with the mandatory reliability standards, NRG could be subject to sanctions, including substantial monetary penalties and increased compliance obligations. NRG is also affected by legislative and regulatory changes, as well as changes to market design, market rules, tariffs, cost allocations, and bidding rules that occur in the existing ISOs. The ISOs that oversee most of the wholesale power markets impose, and in the future may continue to impose, mitigation, including price limitations, offer caps, non-performance penalties and other mechanisms to address some of the volatility and the potential exercise of market power in these markets. These types of price limitations and other regulatory mechanisms may have a material adverse effect on the profitability of NRG's generation facilities that sell energy and capacity into the wholesale power markets.

The regulatory environment has undergone significant changes in the last several years due to state and federal policies affecting wholesale and retail competition and the creation of incentives for the addition of large amounts of new renewable generation and, in some cases, transmission. These changes are ongoing, and the Company cannot predict the future design of the wholesale power markets or the ultimate effect that the changing regulatory environment will have on NRG's business. In addition, in some of these markets, interested parties have proposed material market design changes. If competitive restructuring of the electric power markets is reversed, discontinued, or delayed, the Company's business prospects and financial results could be negatively impacted. In addition, since 2010, there have been a number of reforms to the regulation of the derivatives markets, both in the United States and internationally. These regulations, and any further changes thereto, or adoption of additional regulations, including any regulations relating to position limits on futures and other derivatives or margin for derivatives, could negatively impact NRG's ability to hedge its portfolio in an efficient, cost-effective manner by, among other things, potentially decreasing liquidity in the forward commodity and derivatives markets or limiting NRG's ability to utilize non-cash collateral for derivatives transactions.

NRG's business may be affected by interference in the competitive wholesale marketplace.

NRG's generation and competitive retail operations rely on a competitive wholesale marketplace. The competitive wholesale marketplace may be impacted by out-of-market subsidies, including bailouts of uneconomic nuclear plants, imports of power from Canada, renewable mandates or subsidies, mandates to sell power below its cost of acquisition and associated costs, as well as out-of-market payments to new or existing generators. These out-of-market subsidies to existing or new generation undermine the competitive wholesale marketplace, which can lead to premature retirement of existing facilities, including those owned by the Company. If these measures continue, capacity and energy prices may be suppressed, and the Company may not be successful in its efforts to insulate the competitive market from this interference. The Company's retail operations may be materially impacted by rules or regulations that allow regulated utilities to participate in competitive retail markets or own and operate facilities that could be provided by competitive market participants.

The integration of the Capacity Performance product into the PJM market could lead to substantial changes in capacity income and non-performance penalties, which could have a material adverse effect on NRG's results of operations, financial condition and cash flows.

PJM operates a pay-for-performance model where capacity payments are modified based on real-time generator performance. Capacity market prices are sensitive to design parameters, as well as additions of new capacity. NRG may experience substantial changes in capacity income and non-performance penalties, which could have a material adverse effect on NRG's results of operations, financial condition and cash flows.

NRG's ownership interest in a nuclear power facility subjects the Company to regulations, costs and liabilities uniquely associated with these types of facilities.

Under the Atomic Energy Act of 1954, as amended, or AEA, ownership and operation of STP, of which NRG indirectly owns a 44% interest, is subject to regulation by the NRC. Such regulation includes licensing, inspection, enforcement, testing, evaluation and modification of all aspects of nuclear reactor power plant design and operation, environmental and safety performance, technical and financial qualifications, decommissioning funding assurance and transfer and foreign ownership restrictions. The current facility operating licenses for STP expire on August 20, 2047 (Unit 1) and December 15, 2048 (Unit 2).

There are unique risks to owning and operating a nuclear power facility. These include liabilities related to the handling, treatment, storage, disposal, transport, release and use of radioactive materials, particularly with respect to spent nuclear fuel, and uncertainties regarding the ultimate, and potential exposure to, technical and financial risks associated with modifying or decommissioning a nuclear facility. The NRC could require the shutdown of the plant for safety reasons or refuse to permit restart of the unit after unplanned or planned outages. New or amended NRC safety and regulatory requirements may give rise to additional operation and maintenance costs and capital expenditures. Additionally, aging equipment may require more capital expenditures to keep each of these nuclear power plants operating efficiently. This equipment is also likely to require periodic

upgrading and improvement. Any unexpected failure, including failure associated with breakdowns, forced outages, or any unanticipated capital expenditures, could result in reduced profitability. STP will be obligated to continue storing spent nuclear fuel if the U.S. DOE continues to fail to meet its contractual obligations to STP made pursuant to the U.S. Nuclear Waste Policy Act of 1982 to accept and dispose of STP's spent nuclear fuel. Costs associated with these risks could be substantial and could have a material adverse effect on NRG's results of operations, financial condition or cash flow to the extent not covered by the Decommissioning Trusts or recovered from ratepayers. In addition, to the extent that all or a part of STP is required by the NRC to permanently or temporarily shut down or modify its operations, or is otherwise subject to a forced outage, NRG may incur additional costs to the extent it is obligated to provide power from more expensive alternative sources — either NRG's own plants, third party generators or the ERCOT — to cover the Company's then existing forward sale obligations. Such shutdown or modification could also lead to substantial costs related to the storage and disposal of radioactive materials and spent nuclear fuel.

While STP maintains property and liability insurance for losses related to nuclear operations, there may be limitations on the amounts and types of insurance commercially available. See also Item 15 — Note 23, *Commitments and Contingencies, Nuclear Insurance*. An accident at STP or another nuclear facility could have a material adverse effect on NRG's financial condition, its operational results, or liquidity as losses may exceed the insurance coverage available and/or may result in the obligation to pay retrospective premium obligations.

NRG is subject to environmental laws that impose extensive and increasingly stringent requirements on the Company's ongoing operations, as well as potentially substantial liabilities arising out of environmental contamination. These environmental requirements and liabilities could adversely impact NRG's results of operations, financial condition and cash flows.

NRG is subject to the environmental laws of foreign and U.S., federal, state and local authorities. The Company must comply with numerous environmental laws and obtain numerous governmental permits and approvals to build and operate the Company's plants. Federal and state environmental laws generally have become more stringent over time. Should NRG fail to comply with any environmental requirements that apply to its operations, the Company could be subject to administrative, civil and/or criminal liability and fines, and regulatory agencies could take other actions seeking to curtail the Company's operations. In addition, when new requirements take effect or when existing environmental requirements are revised, reinterpreted or subject to changing enforcement policies, NRG's business, results of operations, financial condition and cash flows could be adversely affected.

NRG's businesses are subject to physical, market and economic risks relating to potential effects of climate change, and policies at the national, regional and state levels to regulate GHG emissions and mitigate climate change could adversely impact NRG's results of operations, financial condition and cash flows.

Fluctuations in weather and other environmental conditions, including temperature and precipitation levels, may affect consumer demand for electricity or natural gas. In addition, the potential physical effects of climate change, such as increased frequency and severity of storms, floods and other climatic events, could disrupt NRG's operations and supply chain, and cause it to incur significant costs in preparing for or responding to these effects. These or other changes in climate could lead to increased operating costs or capital expenses. NRG's customers may also experience the potential physical impacts of climate change and may incur significant costs in preparing for or responding to these efforts, including increasing the mix and resiliency of their energy solutions and supply.

Hazards customary to the power production industry include the potential for unusual weather conditions, which could affect fuel pricing and availability, the Company's route to market or access to customers, i.e., transmission and distribution lines, transportation and delivery, or critical plant assets. The contribution of climate change to the frequency or intensity of weather-related events could affect NRG's operations and planning process.

Climate change could also affect the availability of a secure and economical supply of water in some locations, which is essential for the continued operation of NRG's generation plants. NRG monitors water risk carefully. If it is determined that a water supply risk exists that could impact projected generation levels at any plant risk mitigation efforts are identified and evaluated for implementation.

Further, demand for NRG's energy-related services could be similarly impacted by consumers' preferences or market factors favoring energy efficiency, low-carbon power sources or reduced electricity usage.

NRG's GHG emissions for 2021 can be found in Item 1, *Business — Environmental Regulatory Matters*. GHG regulation, at the state or federal level, could increase the cost of electricity generated by fossil fuels, and such increases could reduce demand for the power NRG generates and markets. Any increase in costs at a national, regional or state level could adversely affect NRG's results of operations, financial condition and cash flows

Changes in data privacy and data protection laws and regulations or any non-compliance with such laws and regulations, could adversely affect NRG's business and financial results.

The consumer privacy landscape continues to experience momentum for greater privacy protection and reform at the state and federal level in response to precedents set forth by the General Data Protection Regulation (the "GDPR") and the California Consumer Privacy Act (the "CCPA"). The development and evolving nature of domestic and international privacy regulation and enforcement could impact and potentially limit how NRG processes personally identifiable information. The 2020 enactment of the CCPA granted certain data access rights to California residents with respect to their personal information, and with the forthcoming amendments to the CCPA supported by the California Privacy Rights Act (the "CPRA"), effective January 1, 2023, California residents will have increased access rights (including the right to limit the use and disclosure of sensitive personal information), which will be enforced by a new state privacy regulator, resulting in more scrutiny of business practices and disclosures. Additional states including Virginia, Colorado, and Nevada have similarly adopted enhanced data privacy legislation patterned after the standards set forth by CCPA, including broader data access rights, with Virginia going a step further requiring businesses to perform data protection assessments for certain processing activities.

As new laws and regulations are created, requiring businesses to implement processes to enable customer access to their data and enhanced data protection and management standards, NRG cannot forecast the impact that they may have on the Company's business. Any non-compliance with laws may result in proceedings or actions against the Company by governmental entities or individuals. Moreover, any inquiries or investigations, government penalties or sanctions, or civil actions by individuals may be costly to comply with, resulting in negative publicity, increased operating costs, significant management time and attention, and may lead to remedies that harm the business, including fines, demands or orders that existing business practices be modified or terminated.

NRG's retail operations are subject to changing rules and regulations that could have a material impact on the Company's profitability.

The competitiveness of NRG's retail operations partially depends on regulatory policies that establish the structure, rules, terms and conditions on which services are offered to retail customers. These policies can include, among other things, controls on the retail rates that NRG can charge, the imposition of additional costs on sales, restrictions on the Company's ability to obtain new customers through various marketing channels and disclosure requirements. The Company's retail operations may be materially impacted by rules or regulations that allow regulated utilities to participate in competitive retail markets or own and operate facilities that could be provided by competitive market participants. Additionally, state, federal or provincial imposition of net metering or RPS programs can make it more or less expensive for retail customers to supplement or replace their reliance on grid power.

The Company's international operations are exposed to political and economic risks, commercial instability and events beyond the Company's control in the countries in which it operates, which risks may negatively impact the Company's business.

The Company's international operations depend on products manufactured, purchased and sold in the U.S. and internationally. In some cases, these countries have greater political and economic volatility and greater vulnerability to infrastructure and labor disruptions than in NRG's other markets. Operating a business in a number of different regions and countries exposes the Company to a number of risks, including: multiple and potentially conflicting laws, regulations and policies that are subject to change; imposition of currency restrictions on repatriation of earnings or other restraints; imposition of burdensome tariffs or quotas; national and international conflict, including terrorist acts; and political and economic instability or civil unrest that may severely disrupt economic activity in affected countries.

The occurrence of one or more of these events may negatively impact the Company's business, results of operations and financial condition.

Risks Related to Public Health Threats

Public health threats or outbreaks of communicable diseases could have a material adverse effect on the Company's operations and financial results.

The Company may face risks related to public health threats or outbreaks of communicable diseases. A widespread healthcare crisis, such as an outbreak of a communicable disease, could adversely affect the global economy and the Company's ability to conduct its business for an indefinite period of time. For example, the ongoing global COVID-19 pandemic negatively impacted local and global economies, disrupted financial markets and international trade, resulted in increased unemployment levels and impacted local and global supply chains, all of which negatively impact the electricity industry and the Company's business. Federal, state, and local governments had implemented various mitigation measures, including travel restrictions, border closings, restrictions on public gatherings, shelter-in-place orders and limitations on business activities. Although the operations of the Company are considered an essential service, some of these measures may adversely impact the ability of NRG employees, contractors, suppliers, customers, and other business partners to conduct

business activities. This could have a material adverse effect on the Company's results of operations, financial condition, risk exposure and liquidity.

In particular, the continued spread of COVID-19 and efforts to contain the virus could:

- adversely impact demand for the Company's electricity services and other products and services and the ability of customers to pay their bills;
- cause an increase in costs for the Company as a result of emergency measures taken by state and local regulatory authorities in response to the COVID-19 crisis, including regulatory changes prohibiting customer disconnects and late fees;
- impact the ability of the Company's partners or counterparties to perform their obligations under existing arrangements, including development projects, power purchase and sale arrangements, hedging arrangements or other commercial activities; and
- cause other unpredicted events which may have an adverse impact on the Company's results of operations, financial condition, risk exposure and liquidity.

The situation surrounding COVID-19 remains fluid and the potential for a material impact on the Company's results of operations, financial condition, risk exposure and liquidity increases the longer the virus, or any variants thereof, impacts the level of economic activity in the United States and abroad. NRG cannot reasonably estimate with any degree of certainty the future impact of COVID-19, or any resurgence of COVID-19 or other pandemic may have on the Company's results of operations, financial position, risk exposure and liquidity.

Risks Related to the Economic and Financial Market Conditions, and the Company's Indebtedness

NRG's level of indebtedness could adversely affect its ability to raise additional capital to fund its operations or return capital to stockholders. It could also expose it to the risk of increased interest rates and limit its ability to react to changes in the economy or its industry.

NRG's substantial debt could have negative consequences, including:

- increasing NRG's vulnerability to general economic and industry conditions;
- requiring a substantial portion of NRG's cash flow from operations to be dedicated to the payment of principal and interest on its indebtedness, therefore reducing NRG's ability to pay dividends or to use its cash flow to fund its operations, capital expenditures and future business opportunities;
- limiting NRG's ability to enter into long-term power sales or fuel purchases which require credit support;
- limiting NRG's ability to obtain additional financing for working capital including collateral postings, capital expenditures, debt service requirements, acquisitions and general corporate or other purposes;
- limiting NRG's ability to adjust to changing market conditions and placing it at a competitive disadvantage compared to its competitors who have less debt; and
- exposing NRG to the risk of increased interest rates because certain of its borrowings are at variable rates of interest, primarily through its Revolving Credit Facility.

The Company's credit documents contain financial and other restrictive covenants that may limit the Company's ability to return capital to stockholders or otherwise engage in activities that may be in its long-term best interests. NRG's failure to comply with those covenants could result in an event of default which, if not cured or waived, could result in the acceleration of all of the Company's indebtedness. The Company's corporate credit agreement includes a sustainability-linked metric and sustainability-linked bonds, which could result in increased interest expense to the Company if the sustainability metrics set forth therein are not met. Furthermore, financial and other restrictive covenants contained in any project level subsidiary debt may limit the ability of NRG to receive distributions from such subsidiary.

In addition, NRG's ability to arrange financing, either at the corporate level, a non-recourse project-level subsidiary or otherwise, and the costs of such capital, are dependent on numerous factors, including: general economic and capital market conditions; credit availability from banks and other financial institutions; investor confidence in NRG, its partners and the regional wholesale power markets; NRG's financial performance and the financial performance of its subsidiaries; NRG's level of indebtedness and compliance with covenants in debt agreements; maintenance of acceptable credit ratings; cash flow; and provisions of tax and securities laws that may impact raising capital.

NRG may not be successful in obtaining additional capital for these or other reasons. The failure to obtain additional capital from time to time may have a material adverse effect on its business and operations.

Adverse economic conditions could adversely affect NRG's business, financial condition, results of operations and cash flows.

Adverse economic conditions and declines in wholesale energy prices, partially resulting from adverse economic conditions, may impact NRG's results of operations. The breadth and depth of negative economic conditions may have a wide-ranging impact on the U.S. business environment. In addition, adverse economic conditions also reduce the demand for energy commodities. Reduced demand from negative economic conditions continues to impact the key domestic wholesale energy markets NRG serves. In general, economic and commodity market conditions will continue to impact NRG's unhedged future energy margins, liquidity, earnings growth and overall financial condition. In addition, adverse economic conditions, declines in wholesale energy prices, reduced demand for energy and other factors may negatively impact the trading price of NRG's common stock and impact forecasted cash flows, which may require NRG to evaluate its goodwill and other long-lived assets for impairment. Any such impairment could have a material impact on NRG's financial statements.

Goodwill and other intangible assets that NRG has recorded in connection with its acquisitions are subject to impairment evaluations and, as a result, the Company could be required to write off some or all of this goodwill and other intangible assets, which may adversely affect the Company's financial condition and results of operations.

Goodwill is not amortized but is reviewed annually or more frequently for impairment. Other intangibles are also reviewed at least annually or more frequently, if certain conditions exist, and are amortized. Any reduction in or impairment of the value of goodwill or other intangible assets will result in a charge against earnings, which could materially adversely affect NRG's reported results of operations and financial position in future periods.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING INFORMATION

This Annual Report on Form 10-K of NRG Energy, Inc., or NRG or the Company, includes forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or Exchange Act. The words "believes," "projects," "anticipates," "plans," "expects," "intends," "estimates" and similar expressions are intended to identify forward-looking statements. These forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause NRG's actual results, performance and achievements, or industry results, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. These factors, risks and uncertainties include the factors described under Item 1A — *Risk Factors* and the following:

- Business uncertainties related to the integration of the operations of Direct Energy with its own;
- NRG's ability to obtain and maintain retail market share;
- General economic conditions, changes in the wholesale power and gas markets and fluctuations in the cost of fuel;
- Volatile power and gas supply costs and demand for power and gas;
- Changes in law, including judicial and regulatory decisions;
- Hazards customary to the power production industry and power generation operations, such as fuel and electricity price volatility, unusual weather conditions, catastrophic weather-related or other damage to facilities, unscheduled generation outages, maintenance or repairs, unanticipated changes to fuel supply costs or availability due to higher demand, shortages, transportation problems or other developments, environmental incidents, or electric transmission or gas pipeline system constraints and the possibility that NRG may not have adequate insurance to cover losses as a result of such hazards;
- The effectiveness of NRG's risk management policies and procedures and the ability of NRG's counterparties to satisfy their financial commitments;
- NRG's ability to enter into contracts to sell power or gas and procure fuel on acceptable terms and prices;
- NRG's inability to estimate with any degree of certainty the future impact that COVID-19, any resurgence of COVID-19, or other pandemic may have on NRG's results of operations, financial position, risk exposure and liquidity;
- NRG's ability to successfully integrate, realize cost savings and manage any acquired businesses;
- NRG's ability to engage in successful acquisitions and divestitures, as well as other mergers and acquisitions activity;
- Cyber terrorism and inadequate cybersecurity, data breaches or the occurrence of a catastrophic loss and the possibility that NRG may not have adequate insurance to cover losses resulting from such hazards or the inability of NRG's insurers to provide coverage;
- Counterparties' collateral demands and other factors affecting NRG's liquidity position and financial condition;
- NRG's ability to operate its businesses efficiently and generate earnings and cash flows from its asset-based businesses in relation to its debt and other obligations;
- The liquidity and competitiveness of wholesale markets for energy commodities;
- Government regulation, including changes in market rules, rates, tariffs and environmental laws;
- NRG's ability to develop and innovate new products, as retail and wholesale markets continue to change and evolve;
- Price mitigation strategies and other market structures employed by ISOs or RTOs that result in a failure to adequately and fairly compensate NRG's generation units;
- NRG's ability to mitigate forced outage risk;
- NRG's ability to borrow funds and access capital markets, as well as NRG's substantial indebtedness and the possibility that NRG may incur additional indebtedness in the future;
- Operating and financial restrictions placed on NRG and its subsidiaries that are contained in NRG's corporate credit agreements, and in debt and other agreements of certain of NRG subsidiaries and project affiliates generally;
- The ability of NRG and its counterparties to develop and build new power generation facilities;
- NRG's ability to implement its strategy of finding ways to meet the challenges of climate change, clean air and protecting natural resources, while taking advantage of business opportunities;
- NRG's ability to increase cash from operations through operational and market initiatives, corporate efficiencies, asset strategy, and a range of other programs throughout NRG to reduce costs or generate revenues;
- NRG's ability to successfully evaluate investments and achieve intended financial results in new business and growth initiatives;

- NRG's ability to develop and maintain successful partnering relationships as needed.

Forward-looking statements speak only as of the date they were made, and NRG undertakes no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. The foregoing review of factors that could cause NRG's actual results to differ materially from those contemplated in any forward-looking statements included in this Annual Report on Form 10-K should not be construed as exhaustive.

Item 1B — Unresolved Staff Comments

None.

Item 2 — Properties

Listed below are descriptions of NRG's interests in facilities, operations and/or projects owned or leased as of December 31, 2021. The rated MW capacity figures provided represent nominal summer MW capacity of power generated. Net MW capacity is adjusted for the Company's owned or leased interest as of December 31, 2021. The Company believes its existing facilities, operations and/or projects are suitable for the conduct of its business. The following table summarizes NRG's power production and cogeneration facilities by region:

Name of Facility	Power Market	Plant Type	Primary Fuel	Location	Rated MW Capacity ^(a)	Net MW Capacity ^(b)	% Owned
Texas							
Cedar Bayou	ERCOT	Fossil	Natural Gas	TX	1,494	1,494	100.0
Cedar Bayou 4	ERCOT	Fossil	Natural Gas	TX	504	252	50.0
Elbow Creek	ERCOT	Other	Battery Storage	TX	2	2	100.0
Greens Bayou	ERCOT	Fossil	Natural Gas	TX	330	330	100.0
Gregory	ERCOT	Fossil	Natural Gas	TX	385	385	100.0
Limestone ^(c)	ERCOT	Fossil	Coal	TX	1,660	1,660	100.0
Petra Nova Cogen	ERCOT	Fossil	Natural Gas	TX	68	34	50.0
San Jacinto	ERCOT	Fossil	Natural Gas	TX	160	160	100.0
South Texas Project	ERCOT	Nuclear	Uranium	TX	2,572	1,132	44.0
T.H. Wharton	ERCOT	Fossil	Natural Gas	TX	1,002	1,002	100.0
W.A. Parish	ERCOT	Fossil	Coal	TX	2,514	2,514	100.0
W.A. Parish	ERCOT	Fossil	Natural Gas	TX	1,118	1,118	100.0
Total Texas					11,809	10,083	
East							
Astoria Turbines ^(e)	NYISO	Fossil	Natural Gas	NY	420	420	100.0
Chalk Point	PJM	Fossil	Natural Gas	MD	80	80	100.0
Fisk	PJM	Fossil	Oil	IL	171	171	100.0
Indian River ^(d)	PJM	Fossil	Coal	DE	410	410	100.0
Indian River	PJM	Fossil	Oil	DE	16	16	100.0
Joliet	PJM	Fossil	Natural Gas	IL	1,381	1,381	100.0
Powerton	PJM	Fossil	Coal	IL	1,538	1,538	100.0
Vienna	PJM	Fossil	Oil	MD	167	167	100.0
Waukegan ^(d)	PJM	Fossil	Coal	IL	682	682	100.0
Waukegan	PJM	Fossil	Oil	IL	101	101	100.0
Will County ^(d)	PJM	Fossil	Coal	IL	510	510	100.0
Total East					5,476	5,476	
West/Other							
Cottonwood	MISO	Fossil	Natural Gas	TX	1,177	1,177	— ^(d)
Gladstone		Fossil	Coal	AUS	1,613	605	37.5
Ivanpah	CAISO	Renewable	Solar	CA	393	214	54.5
Midway-Sunset	CAISO	Fossil	Natural Gas	CA	226	113	50.0
Stadiums and Other		Renewable	Solar	various	5	5	100.0
Watson	CAISO	Fossil	Natural Gas	CA	416	204	49.0
Total West/Other					3,830	2,318	
Total Fleet					21,115	17,877	

(a) MW capacity of the facility without taking into account NRG ownership percentage

(b) Actual capacity can vary depending on factors including weather conditions, operational conditions, and other factors. Additionally, ERCOT and PJM require periodic demonstration of capability, and the capacity may vary individually and in the aggregate from time to time

(c) In early July 2021, Limestone Unit 1 came offline as a result of damage to the duct work associated with the flue gas desulfurization system. Based on management's current assessment of necessary remediation efforts, Unit 1 is expected to remain on an outage until the second quarter of 2022

(d) NRG leases 100% interests in the Cottonwood facility through a facility lease agreement expiring in May 2025 and operates the Cottonwood facility

(e) On February, 22, 2022, NRG submitted deactivation notices to the NYISO for the Astoria facility, with a planned retirement date of 2023

- (f) During the second quarter of 2021, the results of the PJM Base Residual Auction for the 2022/2023 delivery year were released, leading the Company to announce the near-term retirement of a significant portion of its PJM coal generating assets as detailed below:

Name of Facility	Power Market	Primary Fuel	Net MW Capacity	Retirement Date
Indian River 4	PJM	Coal	410	June 2022*
Waukegan 7	PJM	Coal	328	June 2022
Waukegan 8	PJM	Coal	354	June 2022
Will County	PJM	Coal	510	June 2022
Total			1,602	

* On July 30, 2021, PJM identified reliability impacts resulting from the proposed deactivation of one of those assets, Indian River Unit 4. On August 27, 2021 the Company notified PJM that it would continue operations at Indian River Unit 4 until the reliability upgrades identified by PJM were completed, provided that the unit receives a satisfactory and compensatory reliability must run arrangement.

Other Properties

NRG owns several real properties and facilities related to its generation assets, other vacant real property unrelated to its generation assets, and properties not used for operational purposes. NRG believes it has satisfactory title to its plants and facilities in accordance with standards generally accepted in the electric power industry, subject to exceptions that, in the Company's opinion, would not have a material adverse effect on the use or value of its portfolio.

NRG leases its operational and corporate headquarters at 910 Louisiana Street, Houston, Texas, its financial and commercial corporate offices at 804 Carnegie Center, Princeton, New Jersey, as well as its retail operations offices, call centers, and various other office space.

Item 3 — Legal Proceedings

See Item 15 — Note 23, *Commitments and Contingencies*, to the Consolidated Financial Statements for discussion of the material legal proceedings to which NRG is a party.

Item 4 — Mine Safety Disclosures

There have been no events that are required to be reported under this Item.

PART II

Item 5 — Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Market Information and Holders

NRG's common stock trades on the New York Stock Exchange under the symbol "NRG." NRG's authorized capital stock consists of 500,000,000 shares of common stock and 10,000,000 shares of preferred stock. A total of 25,000,000 shares of the Company's common stock are authorized for issuance under the NRG LTIP. For more information about the NRG LTIP and the NRG GenOn LTIP, refer to Item 12 — *Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters* and Item 15 — Note 21, *Stock-Based Compensation*, to the Consolidated Financial Statements.

As of January 31, 2022, there were 16,501 common stockholders of record.

NRG increased the annual dividend to \$1.30 from \$1.20 per share beginning in the first quarter of 2021 and further increased the annual dividend by 8% to \$1.40 per share beginning in the first quarter of 2022. NRG expects to target an annual dividend growth rate of 7-9% per share in subsequent years.

Issuer Purchases of Equity Securities

The table below sets forth the information with respect to purchases made by or on behalf of NRG or any "affiliated purchaser" (as defined in Rule 10b-18(a)(3) under the Exchange Act) of NRG's common stock during the quarter ended December 31, 2021.

For the three months ended December 31, 2021	Total Number of Shares Purchased	Average Price Paid per Share ^(b)	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs ^{(a)(c)}
Month #1				
(October 1, 2021 to October 31, 2021	—	\$ —	—	\$ —
Month #2				
(November 1, 2021 to November 30, 2021,	—	\$ —	—	\$ —
Month #3				
(December 1, 2021 to December 31, 2021)	1,084,752	\$ 40.85	1,084,752	\$ 955,665,275
Total at December 31, 2021	1,084,752	\$ 40.85	1,084,752	

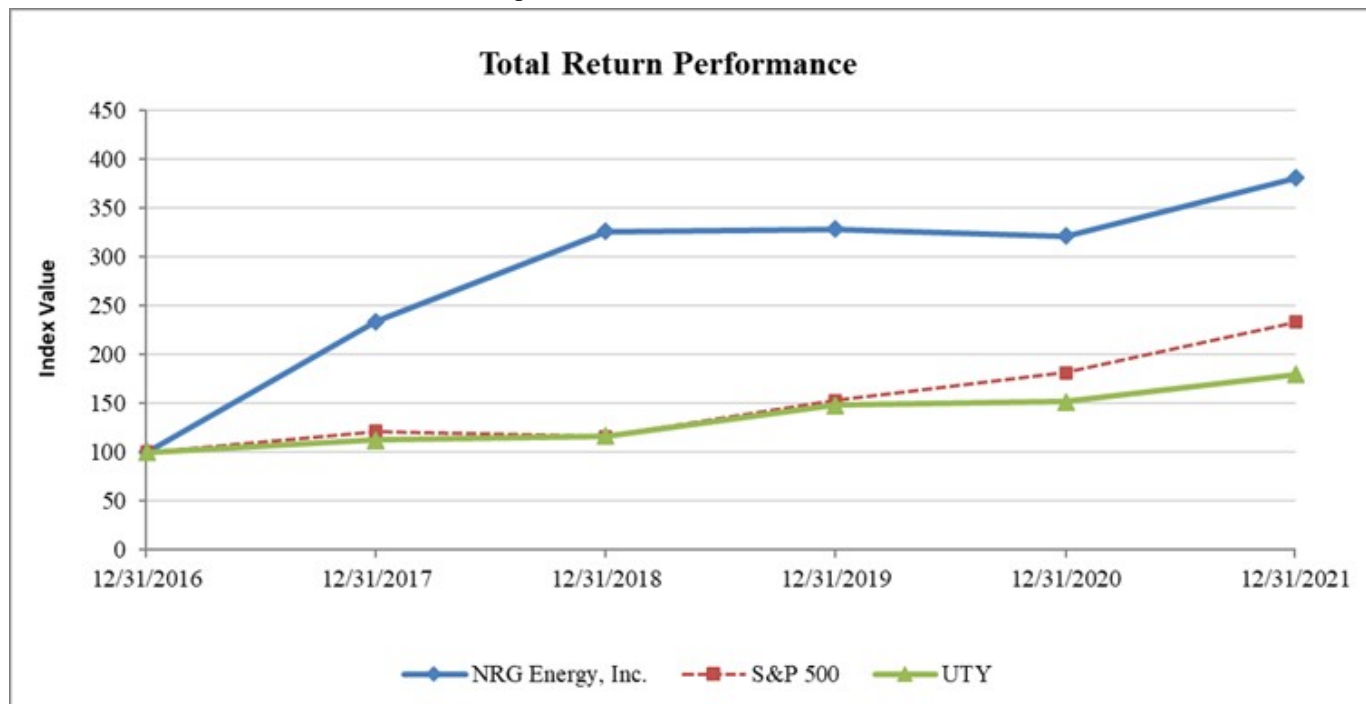
- (a) On December 6, 2021 the Company announced that the Board of Directors has authorized \$1 billion for share repurchases, as part of NRG's Capital Allocation Program. The program began in December 2021 and will continue throughout 2022
- (b) The average price paid per share excludes commissions of \$0.02 per share paid in connection with the open market share repurchases
- (c) Includes commissions of \$0.02 per share paid in connection with the open market share repurchases

Stock Performance Graph

The performance graph below compares the cumulative total stockholder return on NRG's common stock for the period December 31, 2016 through December 31, 2021 with the cumulative total return of the Standard & Poor's 500 Composite Stock Price Index, or S&P 500, and the Philadelphia Utility Sector Index, or UTY.

The performance graph shown below is being furnished and compares each period assuming that \$100 was invested on December 31, 2016, in each of the common stock of NRG, the stocks included in the S&P 500 and the stocks included in the UTY, and that all dividends were reinvested.

Comparison of Cumulative Total Return



	12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021
NRG Energy, Inc.	\$ 100.00	\$ 233.70	\$ 326.22	\$ 328.47	\$ 321.43	\$ 381.07
S&P 500	100.00	121.83	116.49	153.17	181.35	233.41
UTY	100.00	112.82	116.79	148.11	152.14	179.90

Item 6 — Reserved

Item 7 — Management's Discussion and Analysis of Financial Condition and Results of Operations

The discussion and analysis below has been organized as follows:

- Executive Summary, including the business environment in which the Company operates, a discussion of regulation, weather, competition and other factors that affect the business, and other significant events that are important to understanding the results of operations and financial condition;
- Results of operations for the years ended December 31, 2021 and December 31, 2020, including an explanation of significant differences between the periods in the specific line items of NRG's Consolidated Statements of Operations;
- Financial condition addressing credit ratings, liquidity position, sources and uses of cash, capital resources and requirements, contractual obligations and market commitments, and off-balance sheet arrangements; and
- Critical accounting estimates that are most important to both the portrayal of the Company's financial condition and results of operations, and require management's most difficult, subjective, or complex judgments.

As you read this discussion and analysis, refer to NRG's Consolidated Statements of Operations in this Form 10-K, which present the results of the Company's operations for the years ended December 31, 2021 and 2020, and also refer to Item 1 to this Form 10-K for more detail discussion about the Company's business. A discussion and analysis of fiscal year 2019 may be found in Part II, Item 7 — Management's Discussion and Analysis of Financial Condition and Results of Operations of the Annual Report on Form 10-K for the fiscal year ended December 31, 2020.

As further described in Item 15 — Note 4, *Acquisitions, Discontinued Operations and Dispositions*, to the Consolidated Financial Statements, the Company determined in prior years that the following businesses were discontinued operations and recast to present their results in the corporate segment:

- South Central Portfolio
- NRG Yield, Inc. and its Renewables Platform
- Carlsbad

Executive Summary

NRG Energy, Inc., or NRG or the Company, is a consumer services company built on dynamic retail brands. NRG brings the power of energy to customers by producing and selling energy and related products and services, nation-wide in the U.S. and Canada in a manner that delivers value to all of NRG's stakeholders. NRG sells power, natural gas, home and power services, and develops innovative, sustainable solutions, predominately under the brand names NRG, Reliant, Direct Energy, Green Mountain Energy, Stream, and XOOM Energy. The Company has a customer base that includes approximately 6 million Home customers as well as commercial, industrial, and wholesale customers, supported by approximately 18,000 MW of generation as of December 31, 2021.

Business Environment

The industry dynamics and external influences affecting the Company, its businesses, and the retail energy and power generation industry in 2021 and for the future medium term include:

Market Dynamics — The price of natural gas plays an important role in setting the price of electricity in many of the regions where NRG operates. Natural gas prices are driven by variables including demand from the industrial, residential, and electric sectors, productivity across natural gas supply basins, costs of natural gas production, changes in pipeline infrastructure, and the financial and hedging profile of natural gas customers and producers. In 2021, the average natural gas price at Henry Hub was 85% higher than in 2020.

NRG may experience impacts to gross margins due to significant, rapid changes in current natural gas prices and the lag in our ability to make a corresponding adjustment to the retail rates we charge customers on term and month to month contracts. The Company hedges its load commitments in order to mitigate the impact of changes in commodity prices, and as a result, these gross margin impacts would be realized in future periods until we are able to make the corresponding adjustments to the retail customer rates.

Natural gas prices are a primary driver of coal demand. Coal commodity prices increased significantly in 2021, which is partly due to supply chain disruptions, as further discussed below in *Global Supply Chain Disruptions*, as well as stressed coal equities, which has led coal suppliers to file for bankruptcy protection, launch debt exchanges, rationalize assets, and cut production.

Electricity Prices — The price of electricity is a key determinant of the profitability of the Company. Many variables such as the price of different fuels, weather, load growth and unit availability all coalesce to impact the final price for electricity and the Company's profitability. An increase in supply cost volatility in the competitive retail markets may result in smaller companies choosing to exit the market, which may result in further consolidation in the competitive retail space. The following table summarizes average on-peak power prices for each of the major markets in which NRG operates for the years ended December 31, 2021 and 2020. The average on-peak power prices increased significantly in Texas due to the impact from Winter Storm Uri. The average on-peak power prices increased in East and West/Services/Other due to higher natural gas prices.

Region	Average On-Peak Power Price (\$/MWh)		
	Year Ended December 31,		2021 vs 2020
	2021	2020	Change %
Texas^(a)			
ERCOT - Houston ^(a)	\$ 192.17	\$ 27.65	595 %
ERCOT - North ^(a)	189.05	25.85	631 %
East			
NY J/NYC ^(b)	48.71	24.55	98 %
NEPOOL ^(b)	51.81	26.52	95 %
COMED (PJM) ^(b)	41.33	22.48	84 %
PJM West Hub ^(b)	45.67	24.49	86 %
West			
CAISO - SP15 ^(b)	53.53	38.15	40 %
MISO - Louisiana Hub ^(b)	43.05	24.43	76 %

(a) Average on-peak power prices based on real time settlement prices as published by the respective ISOs

(b) Average on-peak power prices based on day-ahead settlement prices as published by the respective ISOs

The following table summarizes average realized power prices for NRG, including the impact of settled hedges, for the years ended December 31, 2021 and 2020:

Segment	Average Realized Power Price (\$/MWh)		
	Year Ended December 31,		2021 vs 2020
	2021	2020	Change %
East ^(a)	\$ 36.33	\$ 34.92	4 %
West/Services/Other	43.63	34.80	25 %

(a) Average Realized Power Price reflects energy sales from the generation fleet, including sales to the retail component of the East Segment. Intercompany financial transactions hedging generation with the retail operations make up (\$8.03)/MWh in the year ended December 31, 2021 and \$12.18/MWh in the year ended December 31, 2020

The average realized power prices increased less than average on peak power prices for the year ended December 31, 2021, as compared to the same period in 2020, due to the Company's multi-year hedging program impacting average realized power prices, while on peak power prices increased due to increased natural gas prices and warmer June temperatures in California.

Increased Awareness of, and Action to Combat, Climate Change — Diverse groups of stakeholders, including investors, asset managers, financial institutions, non-government organizations, industry coalitions, individual companies, consumer groups and academic institutions, are increasingly engaged in efforts to limit global warming in the post-industrial era to well below 2 degrees Celsius. As a result, policymakers and regulators at regional, national, sub-national and local levels of government, both in the United States and other parts of the world, are increasingly focused on actions to combat climate change.

NRG actively monitors climate change related developments that could impact its business and regularly engages with a diverse set of stakeholders on these issues. Such engagement helps the Company identify and pursue potential opportunities both to decarbonize its business and better serve its customers. NRG is committed to providing transparent disclosures of its climate risks and opportunities to stakeholders. The Company became an early supporter of the Task Force on Climate-related Financial Disclosures ("TCFD") recommendations after they were issued in 2017, published a TCFD mapping disclosure in December 2020 and issued a stand-alone TCFD report in December 2021.

Lower Carbon Infrastructure Development — Policy mechanisms at the state and federal level, including production and investment tax credits, cash grants, loan guarantees, accelerated depreciation tax benefits, RPS, and carbon trading plans, have supported and continue to support the development of renewable generation, demand-side and smart grid, and other lower carbon infrastructure technologies. In addition, the costs associated with the development of lower carbon infrastructure, such as wind and solar generating facilities, continue to decline. These factors continue to drive increases in the development of lower carbon infrastructure in the markets where the Company participates, which may impact the ability of the Company's generating facilities to participate in those markets. According to ERCOT, 39% of 2021 energy consumption in the ERCOT market was generated from carbon emission-free resources, with wind power contributing 24%. In addition, subsidies and incentives have contributed to the increase in renewable power sources, and customer awareness and preferences are shifting toward sustainable solutions. Increased demand for sustainable energy products from both residential and commercial customers creates opportunities for diversified product offerings in competitive retail markets.

Digitization and Customization — The electric industry is experiencing major technology changes in the way power is distributed and used by end-use customers. The electric grid is shifting from a centralized analog system, where power is generated from limited sources and flows in one direction, to a decentralized multidirectional system, where power can be generated from a number of distributed resources and stored or dispatched on an as-needed basis. In addition, customers are seeking new ways to engage with their power providers. Technologies like smart thermostats, appliances and electric vehicles are giving individuals more choice and control over their electricity usage.

Weather — Weather conditions in the regions of the U.S. in which NRG conducts business influence the Company's financial results. Weather conditions can affect the supply and demand for electricity and fuels and may also impact the availability of the Company's generating assets. Changes in energy supply and demand may impact the price of these energy commodities in both the spot and forward markets, which may affect the Company's results in any given period. Typically, demand for and the price of electricity is higher in the summer and the winter seasons, when temperatures are more extreme. The demand for and price of natural gas is also generally higher in the winter. However, all regions of the U.S. typically do not experience extreme weather conditions at the same time, thus NRG's operations are typically not exposed to the effects of extreme weather in all parts of its business at once. A significant portion of the Company's business is located within Texas, and extreme weather conditions occurring in Texas may have a material impact on the Company's financial position.

For discussion of the recent weather event in Texas, see *Significant Events - Extreme Weather Event in Texas During February 2021 and expected Uplift Securitization Proceeds* below.

Global Supply Chain Disruptions — There are currently global supply chain disruptions impacting natural gas, coal and other fuels and materials necessary for the production and sale of electricity to our retail customers. These supply chain disruptions are due in part to increased demand driven by a number of factors outside the Company's control including the COVID-19 pandemic, labor shortages and extreme weather events in the U.S. These factors are impacting the dispatch of generation facilities, as well as the costs to serve our retail customers. The Company expects supply chain disruptions will continue throughout the remainder of 2022. We are working closely with our suppliers and customers to minimize any potential adverse impacts of these events. We will continue to actively monitor all direct and indirect potential impacts of the supply chain disruptions, and will seek to mitigate and minimize their impact on our business.

Other Factors — A number of other factors significantly influence the level and volatility of prices for energy commodities and related derivative products for NRG's business. These factors include:

- seasonal, daily and hourly changes in demand;
- extreme peak demands;
- available supply resources;
- transportation and transmission availability and reliability within and between regions;
- location of NRG's generating facilities relative to the location of its load-serving opportunities;
- procedures used to maintain the integrity of the physical electricity system during extreme conditions; and
- changes in the nature and extent of federal and state regulations.

These factors can affect energy commodity and derivative prices in different ways and to different degrees. These effects may vary throughout the country as a result of regional differences in:

- weather conditions;
- market liquidity;
- capability and reliability of the physical electricity and gas systems;
- local transportation systems; and
- the nature and extent of electricity deregulation.

Environmental Matters, Regulatory Matters and Legal Proceedings — Details of environmental matters are presented in Item 15 — Note 25, *Environmental Matters*, to the Consolidated Financial Statements and Item 1 — Business, *Environmental Matters*. Details of regulatory matters are presented in Item 15 — Note 24, *Regulatory Matters*, to the Consolidated Financial Statements and Item 1 — Business, *Regulatory Matters*. Details of legal proceedings are presented in Item 15 — Note 23, *Commitments and Contingencies*, to the Consolidated Financial Statements. Some of this information relates to costs that may be material to the Company's financial results.

Significant Events

The following significant events occurred during 2021 and through the filing date, as further described within this Management's Discussion and Analysis and the consolidated financial statements:

Financing Activities

On August 23, 2021, the Company issued \$1.1 billion of aggregate principal amount at par of 3.875% senior notes due 2032 (the "2032 Senior Notes"). The 2032 Senior Notes are senior unsecured obligations of NRG and are guaranteed by certain of its subsidiaries. The 2032 Senior Notes were issued under NRG's Sustainability-Linked Bond Framework, which sets out certain sustainability targets, including reducing greenhouse gas emissions. Failure to meet such sustainability targets will result in a 25 basis point increase to the interest rate payable on the 2032 Senior Notes from and including August 15, 2026.

During the year ended December 31, 2021, the Company redeemed \$1.9 billion in aggregate principal of its Senior Notes for \$1.9 billion using the proceeds of the 2032 Senior Notes and cash on hand.

Extreme Weather Event in Texas During February 2021 and expected Uplift Securitization proceeds

During February 2021, Texas experienced unprecedented cold temperatures for a prolonged duration as a result of Winter Storm Uri, resulting in a power emergency, blackouts, and an estimated all-time peak demand of 77 GW (without load shed). Ahead of the event, NRG launched residential customer communications calling for conservation across all of its brands, and initiated residential and commercial and industrial demand response programs to curtail customer load. The Company maximized available generating capacity and brought in additional resources to supplement in-state staff with technical and operating experts from the rest of its U.S. fleet.

The Texas Legislature passed House Bill 4492, which among other things, authorized ERCOT to obtain \$2.1 billion of financing to distribute to LSEs that were charged and paid to ERCOT exceptionally highly priced ORDPA and ancillary service costs during Winter Storm Uri. Based on LSE-level detail published by the PUCT on December 7, 2021, NRG will receive \$689 million from ERCOT.

During the year ended December 31, 2021, Winter Storm Uri's pre-tax financial impact to the Company was a loss of \$380 million, which reflects the recovery of \$689 million of cost of operations as a result of the proceeds we will receive from the Uplift Securitization discussed above, with receipt expected to occur during the second quarter of 2022. The Company continues to pursue additional mitigants including, but not limited to, customer bad debt mitigation, counterparty default recovery, and additional ERCOT default recovery.

Direct Energy Acquisition

On January 5, 2021, the Company acquired Direct Energy, which had been a North American subsidiary of Centrica. Direct Energy is a leading retail provider of electricity, natural gas, and home and business energy related products and services in North America, with operations in all 50 U.S. states and 8 Canadian provinces. The acquisition increased NRG's retail portfolio by over 3 million customers and complements its integrated model. It also broadened the Company's presence in the Northeast and into states and locales where it did not previously operate, supporting NRG's objective to diversify its business. See Item 15 — Note 4, *Acquisitions, Discontinued Operations and Dispositions*, to the Consolidated Financial Statements for further discussion.

Limestone Extended Outage

In early July 2021, Limestone Unit 1 came offline as a result of damage to the duct work associated with the flue gas desulfurization system. Based on management's current assessment of necessary remediation efforts, Limestone Unit 1 is expected to remain on an outage until the second quarter of 2022.

PJM Base Residual Auction results and Planned Retirement of 1,600 MWs of PJM Coal Capacity

During the second quarter of 2021, the results of the PJM Base Residual Auction for the 2022/2023 delivery year were released, leading the Company to announce the near-term retirement of a significant portion of its PJM coal generating assets in June 2022. On July 30, 2021, PJM identified reliability impacts resulting from the proposed deactivation of one of those assets, Indian River Unit 4. On August 27, 2021 the Company notified PJM that it would continue operations at Indian River Unit 4 until the reliability upgrades identified by PJM were completed, provided that the unit receives a satisfactory and compensatory 'reliability must run' arrangement.

The Company recorded impairment losses of \$271 million and \$35 million on the PJM generating assets and Midwest Generation goodwill, respectively, in connection with the decline in PJM capacity prices and the near-term retirement dates of certain assets. See Item 15 — Note 11, *Asset Impairments* to the Consolidated Financial Statements for further discussion. The Company is continuing to evaluate the viability of the remaining PJM generating assets.

Sale of 4.8 GW of Fossil Generation Assets

On December 1, 2021, the Company sold approximately 4,850 MWs of fossil generating assets from its East and West regions of operations to Generation Bridge, an affiliate of ArcLight Capital Partners. As part of the transaction, NRG entered into a tolling agreement for the 866 MW Arthur Kill plant in New York City through April 2025. See Item 15 — Note 4, *Acquisitions, Discontinued Operations and Dispositions*, to the Consolidated Financial Statements for further discussion.

Sale of Agua Caliente

On February 3, 2021, the Company completed the sale of its 35% ownership in Agua Caliente to Clearway Energy, Inc. for \$202 million. NRG recognized a gain on the sale of \$17 million, including cash disposed of \$7 million.

Share Repurchases

In December 2021, the Company's board of directors authorized the Company to repurchase \$1.0 billion of its common stock. Through December 31, 2021, the Company completed \$53 million of share repurchases at an average price of \$40.22 per share, including \$9 million of equivalent shares purchased in lieu of tax withholdings on equity compensation issuances. Through February 24, 2022, an additional \$82 million of share repurchases were executed at an average price of \$40.26 per share, including \$6 million of equivalent shares purchased in lieu of tax withholdings on equity compensation issuances. See Item 15 - Note 16, *Capital Structure*, to the Consolidated Financial Statements for additional discussion.

Renewable Power Purchase Agreements

The Company's strategy is to procure mid to long-term generation through power purchase agreements. As of December 31, 2021, NRG has entered into PPAs totaling approximately 2.6 GW with third-party project developers and other counterparties. The average tenor of these agreements is twelve years. The Company expects to continue evaluating and executing similar agreements that support the needs of the business. The total GW entered into through PPAs may be impacted by contract terminations when they occur.

Dividend Increase

In the first quarter of 2021, NRG increased the annual dividend to \$1.30 from \$1.20 per share. In 2022, NRG further increased the annual dividend to \$1.40 per share, representing an 8% increase from 2021. The Company expects to target an annual dividend growth rate of 7-9% per share in subsequent years.

COVID-19

While the pandemic presented risks, as further described in Part II, Item 1A — Risk Factors of this Form 10-K, to the Company's business, there was not a material adverse impact on the Company's results of operations for the years ended December 31, 2021 and 2020.

Consolidated Results of Operations for the years ended December 31, 2021 and 2020

The following table provides selected financial information for the Company:

(In millions, except otherwise noted)	Year Ended December 31,		Change
	2021	2020	
Operating Revenues			
Retail revenue	\$ 23,561	\$ 7,460	\$ 16,101
Energy revenue ^(a)	1,215	539	676
Capacity revenue ^(a)	775	680	95
Mark-to-market for economic hedging activities	(164)	95	(259)
Contract amortization	(30)	—	(30)
Other revenues ^{(a)(b)}	1,632	319	1,313
Total operating revenues	26,989	9,093	17,896
Operating Costs and Expenses			
Cost of fuel	1,844	851	(993)
Purchased energy and other cost of sales ^(c)	19,766	4,069	(15,697)
Mark-to-market for economic hedging activities	(2,880)	214	3,094
Contract and emissions credit amortization ^(c)	43	5	(38)
Operations and maintenance	1,370	1,129	(241)
Other cost of operations	339	272	(67)
Cost of operations (excluding depreciation and amortization shown below)	20,482	6,540	(13,942)
Depreciation and amortization	785	435	(350)
Impairment losses	544	75	(469)
Selling, general and administrative costs	1,293	810	(483)
Provision for credit losses	698	108	(590)
Acquisition-related transaction and integration costs	93	23	(70)
Total operating costs and expenses	23,895	7,991	(15,904)
Gain on sale of assets	247	3	244
Operating Income	3,341	1,105	2,236
Other Income/(Expense)			
Equity in earnings of unconsolidated affiliates	17	17	—
Impairment losses on investments	—	(18)	18
Other income, net	63	67	(4)
Loss on debt extinguishment, net	(77)	(9)	(68)
Interest expense	(485)	(401)	(84)
Total other expenses	(482)	(344)	(138)
Income Before Income Taxes	2,859	761	2,098
Income tax expense	672	251	421
Net Income	\$ 2,187	\$ 510	\$ 1,677
Business Metrics			
Average natural gas price — Henry Hub (\$/MMBtu)	\$ 3.84	\$ 2.08	85 %

(a) Includes realized gains and losses from financially settled transactions

(b) Includes trading gains and losses and ancillary revenues

(c) Includes amortization of SO₂ and NO_x credits and excludes amortization of RGGI credits

Gross Margin

The Company calculates gross margin in order to evaluate operating performance as operating revenues less cost of fuel, purchased energy and other costs of sales, mark-to-market for economic hedging activities, contract and emission credit amortization and depreciation and amortization.

Economic Gross Margin

In addition to gross margin, the Company evaluates its operating performance using the measure of economic gross margin, which is not a GAAP measure and may not be comparable to other companies' presentations or deemed more useful than the GAAP information provided elsewhere in this report. Economic gross margin should be viewed as a supplement to and not a substitute for the Company's presentation of gross margin, which is the most directly comparable GAAP measure. Economic gross margin is not intended to represent gross margin. The Company believes that economic gross margin is useful to investors as it is a key operational measure reviewed by the Company's chief operating decision maker. Economic gross margin is defined as the sum of retail revenue, energy revenue, capacity revenue and other revenue, less cost of fuels, purchased energy and other cost of sales. Economic gross margin does not include mark-to-market gains or losses on economic hedging activities, contract amortization, emission credit amortization, depreciation and amortization, operations and maintenance, or other costs of operations.

The tables below present the composition and reconciliation of gross margin and economic gross margin for the years ended December 31, 2021 and 2020:

(\$ in millions, except otherwise noted)	Year Ended December 31, 2021				
	Texas	East	West/ Services/ Other	Corporate/ Eliminations	Total
Retail revenue	\$ 8,410	\$ 11,862	\$ 3,290	\$ (1)	\$ 23,561
Energy revenue	329	508	371	7	1,215
Capacity revenue	—	718	57	—	775
Mark-to-market for economic hedging activities	(3)	(88)	(86)	13	(164)
Contract amortization	—	(26)	(4)	—	(30)
Other revenue	1,557	59	25	(9)	1,632
Operating revenue ^(a)	10,293	13,033	3,653	10	26,989
Cost of fuel	(1,424)	(196)	(224)	—	(1,844)
Purchased energy and other costs of sales ^{(b)(c)(d)}	(6,108)	(10,775)	(2,882)	(1)	(19,766)
Mark-to-market for economic hedging activities	988	1,803	102	(13)	2,880
Contract and emission credit amortization	2	(28)	(17)	—	(43)
Depreciation and amortization	(331)	(338)	(88)	(28)	(785)
Gross margin	\$ 3,420	\$ 3,499	\$ 544	\$ (32)	\$ 7,431
Less: Mark-to-market for economic hedging activities, net	985	1,715	16	—	2,716
Less: Contract and emission credit amortization, net	2	(54)	(21)	—	(73)
Less: Depreciation and amortization	(331)	(338)	(88)	(28)	(785)
Economic gross margin	\$ 2,764	\$ 2,176	\$ 637	\$ (4)	\$ 5,573

(a) Includes trading gains and losses and ancillary revenues

(b) Includes capacity and emissions credits

(c) Includes \$2,648 million, \$183 million and \$1,033 million of TDSP expense in Texas, East, and West/Services/Other respectively

(d) Excludes depreciation and amortization shown separately

Business Metrics	Texas	East	West/ Services/ Other	Corporate/ Eliminations	Total
Home electricity sales volume (GWh)	42,397	14,108	2,252	—	58,757
Business electricity sales volume (GWh)	34,367	53,204	10,625	—	98,196
Home natural gas retail sales volumes (MDth)	—	74,920	97,272	—	172,192
Business natural gas retail sales volumes (MDth)	—	1,595,533	109,021	—	1,704,554
Average retail Home customer count (in thousands) ^(a)	3,055	1,844	962	—	5,861
Ending retail Home customer count (in thousands) ^(a)	3,024	1,766	932	—	5,722
GWh sold	36,920	11,452	8,503	—	56,875
GWh generated ^{(b)(c)}	36,920	7,494	7,949	—	52,363

(a) Home customer count includes recurring residential customers, services customers and municipal aggregations

(b) Includes owned and leased generation, excludes tolled generation and equity investments

(c) Includes 1,054 GWh and 2,445 GWh in East and West/Services/Other respectively that was sold to Generation Bridge in December 2021

Year Ended December 31, 2020

(\$ in millions, except otherwise noted)	Texas	East	West/ Services/ Other ^(a)	Corporate/ Eliminations	Total
Retail revenue	\$ 6,061	\$ 1,305	\$ 96	\$ (2)	\$ 7,460
Energy revenue	24	183	333	(1)	539
Capacity revenue	—	620	61	(1)	680
Mark-to-market for economic hedging activities	2	88	(3)	8	95
Other revenue	222	62	43	(8)	319
Operating revenue	6,309	2,258	530	(4)	9,093
Cost of fuel	(546)	(151)	(154)	—	(851)
Purchased energy and other costs of sales ^{(a)(b)(c)}	(3,110)	(876)	(89)	6	(4,069)
Mark-to-market for economic hedging activities	(211)	5	—	(8)	(214)
Contract and emission credit amortization	(5)	—	—	—	(5)
Depreciation and amortization	(227)	(138)	(36)	(34)	(435)
Gross margin	\$ 2,210	\$ 1,098	\$ 251	\$ (40)	\$ 3,519
Less: Mark-to-market for economic hedging activities, net	(209)	93	(3)	—	(119)
Less: Contract and emission credit amortization	(5)	—	—	—	(5)
Less: Depreciation and amortization	(227)	(138)	(36)	(34)	(435)
Economic gross margin	\$ 2,651	\$ 1,143	\$ 290	\$ (6)	\$ 4,078

(a) Includes capacity and emissions credits

(b) Includes \$1,967 million and \$10 million of electric TDSP charges for Texas and East, respectively

(c) Excludes depreciation and amortization shown separately

Business Metrics	Texas	East	West/ Services/ Other	Corporate/ Eliminations	Total
Home electricity sales volume (GWh)	38,473	10,221	—	—	48,694
Business electricity sales volume (GWh)	17,928	1,596	—	—	19,524
Natural gas retail sales volumes (MDth)	—	23,509	—	—	23,509
Average retail Home customer count (in thousands) ^(a)	2,449	1,175	—	—	3,624
Ending retail Home customer count (in thousands) ^(a)	2,451	1,136	—	—	3,587
GWh sold	31,385	8,136	9,569	—	49,090
GWh generated ^{(b)(c)}	31,385	4,102	9,171	—	44,658

(a) Home customer count includes recurring residential customers and municipal aggregations

(b) Includes owned and leased generation, excludes tolled generation and equity investments

(c) Includes 1,192 GWh and 3,002 GWh in East and West/Services/Other respectively that was sold to Generation Bridge in December 2021

The table below represents the weather metrics for 2021 and 2020:

Weather Metrics	Year ended December 31,			Quarter ended December 31,			Quarter ended September 30,			Quarter ended June 30,			Quarter ended March 31,		
	Texas	East	West/Services/Other ^(a)	Texas	East	West/Services/Other ^(a)	Texas	East	West/Services/Other ^(a)	Texas	East	West/Services/Other ^(a)	Texas	East	West/Services/Other ^(a)
2021															
CDDs ^(b)	2,960	1,275	1,877	386	91	185	1,589	784	1,134	899	362	521	86	38	37
HDDs ^(b)	1,562	4,306	2,060	360	1,377	662	—	38	5	82	541	192	1,120	2,350	1,201
2020															
CDDs	3,102	1,362	1,971	280	79	181	1,640	874	1,152	1,012	353	562	170	56	76
HDDs	1,501	4,268	1,939	634	1,517	763	6	72	4	70	634	178	791	2,045	994
10-year average															
CDDs	3,090	1,297	1,924	281	85	157	1,690	818	1,159	1,003	356	557	116	38	51
HDDs	1,691	4,558	2,044	693	1,584	774	2	56	10	59	521	193	937	2,397	1,067

(a) The West/Services/Other weather metrics are comprised of the average of the CDD and HDD regional results for the West - California and West - South Central regions

(b) National Oceanic and Atmospheric Administration-Climate Prediction Center - A Cooling Degree Day, or CDD, represents the number of degrees that the mean temperature for a particular day is above 65 degrees Fahrenheit in each region. A Heating Degree Day, or HDD, represents the number of degrees that the mean temperature for a particular day is below 65 degrees Fahrenheit in each region. The CDDs/HDDs for a period of time are calculated by adding the CDDs/HDDs for each day during the period

Winter Storm Uri

During the year ended December 31, 2021, Winter Storm Uri's pre-tax financial impact to the Company was a loss of \$380 million, which reflects the recovery of \$689 million of cost of operations as a result of the expected proceeds from the Uplift Securitization. The following impacts are further discussed in the related sections below:

	(In millions)
Gross margin - Texas	\$ 88
Gross margin - East	146
Gross margin - West/Services/Other	13
Total gross margin	247
Operations and maintenance expense	(2)
Selling, general and administrative costs	(29)
Provision for credit losses	(596)
Total impact to loss before income taxes	<u>\$ (380)</u>

The Company continues to pursue additional mitigants including, but not limited to, customer bad debt mitigation, counterparty default recovery, and additional ERCOT default recovery.

Gross margin and economic gross margin

Gross margin increased \$3.9 billion and economic gross margin increased \$1.5 billion, both of which include intercompany sales, during the year ended December 31, 2021, compared to the same period in 2020. The detail by segment is as follows:

Texas

	(In millions)
Higher gross margin due to Winter Storm Uri, primarily driven by hedging optimization, partially offset by the negative impact of an increase in unhedgeable ancillary and operating reserve demand curve, net of securitization proceeds of \$689 million	\$ 88
The following explanations exclude the impact of Winter Storm Uri:	
Higher gross margin due to increased volumes from the acquisition of Direct Energy in January 2021	280
Higher gross margin due to market optimization activities	9
Lower gross margin due to a 22% increase in overall average costs to serve the retail load, driven primarily by increases in power, ancillary, fuel costs and the effect of the current year Limestone Unit 1 extended forced outage, totaling \$349 million, partially offset by higher net revenue primarily driven by increased net revenue rates as a result of changes in customer term, product and mix of \$2.50 per MWh, or \$156 million	(193)
Lower net revenue due to a decrease in load of 834,000 MWhs from weather	(72)
Lower net revenue due to attrition and customer mix	(5)
Other	6
Increase in economic gross margin	\$ 113
Increase in mark-to-market for economic hedging primarily due to net unrealized gains/losses on open positions related to economic hedges	1,194
Decrease in contract and emission credit amortization	7
Increase in depreciation and amortization	(104)
Increase in gross margin	\$ 1,210

East

	(In millions)
Higher gross margin due to Winter Storm Uri, primarily driven by natural gas optimization during volatile pricing that occurred during the weather event	\$ 146
The following explanations exclude the impact of Winter Storm Uri:	
Higher gross margin due to increased volumes from the acquisition of Direct Energy in January 2021, including \$503 million from natural gas activity and \$436 million from power activity	939
Higher business demand response gross margin primarily from the early settlement of capacity obligations in 2021 compared to the same period in 2020 of \$63 million and higher volumes sold in 2021 of \$10 million	73
Higher gross margin due to a lower of cost or market adjustment on oil inventory in 2020	29
Lower gross margin from higher supply costs of \$8.25 per MWh, or \$78 million and lower volumes due to attrition, weather and customer mix of \$45 million, partially offset by higher revenue of \$3 per MWh, or \$29 million	(94)
Lower gross margin due to a 20% decrease in average realized pricing primarily at Midwest Generation	(39)
Lower gross margin due to the sale of fossil generating assets to Generation Bridge in December 2021	(16)
Lower gross margin from market optimization activities	(5)
Increase in economic gross margin	\$ 1,033
Increase in mark-to-market for economic hedging primarily due to net unrealized gains/losses on open positions related to economic hedges	1,622
Increase in contract amortization	(54)
Increase in depreciation and amortization	(200)
Increase in gross margin	\$ 2,401

West/Services/Other

	(In millions)
Higher gross margin due to Winter Storm Uri, driven by optimization during volatility in gas pricing	\$ 13
The following explanations exclude the impact of Winter Storm Uri:	
Higher gross margin due to the acquisition of Direct Energy in January 2021	425
Lower gross margin primarily at Cottonwood driven by an 83% increase in fuel cost, partially offset by a 41% increase in realized power prices.	(31)
Lower gross margin primarily due to prior year MISO uplift payments resulting from out-of-market dispatch during Hurricane Laura	(29)
Lower gross margin from generation outage insurance proceeds received in 2020 for forced outages in 2019, partially offset by Sunrise business interruption proceeds received in 2021 for forced outages in 2019	(22)
Lower gross margin from market optimization activities	(9)
Lower gross margin due to the sale of fossil generating assets to Generation Bridge in December 2021	(7)
Other	7
Increase in economic gross margin	\$ 347
Increase in mark-to-market for economic hedges primarily due to net unrealized gains/losses on open positions related to economic hedges	19
Increase in contract amortization	(21)
Increase in depreciation and amortization	(52)
Increase in gross margin	\$ 293

Mark-to-market for Economic Hedging Activities

Mark-to-market for economic hedging activities includes asset-backed hedges that have not been designated as cash flow hedges. Total net mark-to-market results increased by \$2.8 billion during the year ended December 31, 2021, compared to the same period in 2020.

The breakdown of gains and losses included in operating revenues and operating costs and expenses by segment was as follows:

(In millions)	Year Ended December 31, 2021				
	Texas	East	West/ Services/ Other	Eliminations	Total
Mark-to-market results in operating revenues					
Reversal of previously recognized unrealized (gains) on settled positions related to economic hedges	\$ —	\$ (34)	\$ (4)	\$ (2)	\$ (40)
Reversal of acquired (gain) positions related to economic hedges	—	(6)	—	—	\$ (6)
Net unrealized (losses) on open positions related to economic hedges	(3)	(48)	(82)	15	(118)
Total mark-to-market (losses) in operating revenues	\$ (3)	\$ (88)	\$ (86)	\$ 13	\$ (164)
Mark-to-market results in operating costs and expenses					
Reversal of previously recognized unrealized (gains) on settled positions related to economic hedges	\$ (3)	\$ —	\$ —	\$ 2	\$ (1)
Reversal of acquired loss/(gain) positions related to economic hedges	42	235	(15)	—	262
Net unrealized gains on open positions related to economic hedges	949	1,568	117	(15)	2,619
Total mark-to-market gains in operating costs and expenses	\$ 988	\$ 1,803	\$ 102	\$ (13)	\$ 2,880

(In millions)	Year Ended December 31, 2020				
	Texas	East	West/ Services/ Other	Eliminations	Total
Mark-to-market results in operating revenues					
Reversal of previously recognized unrealized losses/(gains) on settled positions related to economic hedges	\$ 1	\$ 33	\$ (7)	\$ 4	\$ 31
Net unrealized gains on open positions related to economic hedges	1	55	4	4	64
Total mark-to-market gains/(losses) in operating revenues	\$ 2	\$ 88	\$ (3)	\$ 8	\$ 95
Mark-to-market results in operating costs and expenses					
Reversal of previously recognized unrealized (gains)/losses on settled positions related to economic hedges	\$ (87)	\$ 5	\$ —	\$ (4)	\$ (86)
Reversal of acquired loss positions related to economic hedges	2	2	—	—	4
Net unrealized (losses) on open positions related to economic hedges	(126)	(2)	—	(4)	(132)
Total mark-to-market (losses)/gains in operating costs and expenses	\$ (211)	\$ 5	\$ —	\$ (8)	\$ (214)

Mark-to-market results consist of unrealized gains and losses on contracts that are yet to be settled. The settlement of these transactions is reflected in the same revenue or cost caption as the items being hedged.

The reversals of acquired gain or loss positions were valued based upon the forward prices on the acquisition date.

For the year ended December 31, 2021 the \$164 million loss in operating revenues from economic hedge positions was driven primarily by a decrease in the value of open positions as a result of increases in East and West/Services/Other power prices, as well as the reversal of previously recognized unrealized gains on contracts that settled during the period. The \$2.9 billion gain in operating costs and expenses from economic hedge positions was driven primarily by an increase in the value of open positions as a result of increases in natural gas and power prices across all segments as well as the reversal of acquired contracts that settled during the year.

For the year ended December 31, 2020 the \$95 million gain in operating revenues from economic hedge positions was driven primarily by an increase in the value of open positions as a result of decreases in New York capacity prices, as well as the reversal of previously recognized unrealized losses on contracts that settled during the period. The \$214 million loss in operating costs and expenses from economic hedge positions was driven primarily by a decrease in the value of open positions as a result of decreases in ERCOT power prices and heat rate contraction, as well as the reversal of previously recognized unrealized gains on contracts that settled during the period.

In accordance with ASC 815, the following table represents the results of the Company's financial and physical trading of energy commodities for the years ended December 31, 2021 and 2020. The realized and unrealized financial and physical trading results are included in operating revenue. The Company's trading activities are subject to limits within the Company's Risk Management Policy.

(In millions)	Year ended December 31,	
	2021	2020
Trading gains/(losses)		
Realized	\$ 124	\$ 41
Unrealized	(32)	(5)
Total trading gains	\$ 92	\$ 36

Operations and Maintenance Expenses

Operations and maintenance expenses are comprised of the following:

(In millions)	Texas	East	West/ Services/ Other	Corporate	Eliminations	Total
	Year Ended December 31, 2021	\$ 703	\$ 452	\$ 218	\$ 2	\$ (5)
Year Ended December 31, 2020	651	371	104	9	(6)	1,129

Operations and maintenance expenses increased by \$241 million for the year ended December 31, 2021 compared to the same period in 2020, due to the following:

	(In millions)
Increase due to the acquisition of Direct Energy in January 2021	\$ 257
Increase in major maintenance primarily due to the duration and scope of planned and forced outages in Texas during 2021	27
Increase in variable operation and maintenance expense at the PJM coal facilities associated with increased generation in 2021	23
Increase driven by higher maintenance resulting from the impacts of Winter Storm Uri	2
Decrease driven by lower retail operations costs	(29)
Decrease in lease expense primarily driven by the buyout of the Midwest Generation lease in 2020	(16)
Decrease due to the sale of fossil generating assets to Generation Bridge in December 2021	(11)
Decrease due to prior year suspended plant project and prior year reserves for obsolete inventory	(9)
Other	(3)
Increase in operations and maintenance expense	<u>\$ 241</u>

Other Cost of Operations

Other Cost of operations are comprised of the following:

(In millions)	Texas	East	West/Services/ Other	Total
Year Ended December 31, 2021	\$ 194	\$ 129	\$ 16	\$ 339
Year Ended December 31, 2020	163	91	18	272

Other cost of operations increased by \$67 million for the year ended December 31, 2021 compared to the same period in 2020, due to the following:

	(In millions)
Increase due to the acquisition of Direct Energy in January 2021	\$ 83
Decrease primarily due to ARO expense in 2020 at Jewett Mine and Joliet as a result of regulatory requirements	(15)
Other	(1)
Increase in other cost of operations	<u>\$ 67</u>

Depreciation and Amortization

Depreciation and amortization expenses are comprised of the following:

(In millions)	Texas	East	West/Services/ Other	Corporate	Total
Year Ended December 31, 2021	\$ 331	\$ 338	\$ 88	\$ 28	\$ 785
Year Ended December 31, 2020	227	138	36	34	435

Depreciation and amortization expense increased by \$350 million for the year ended December 31, 2021 compared to the same period in 2020, primarily due to amortization of acquired intangibles in connection with the acquisition of Direct Energy in January 2021.

Impairment Losses

During the year ended December 31, 2021, the Company recorded impairment losses of \$544 million, of which \$306 million was recorded in the second quarter related to the decline in capacity prices and the planned retirement of a significant portion of the PJM coal fleet, \$213 million in the fourth quarter as a result of changes in the long-term outlook of the Joliet facility prompted by market conditions and an assessment of various alternatives for the long-term operational landscape of the facility including the impact of the CEJA in Illinois, and \$25 million related to various other power plants. During the year ended December 31, 2020, the Company recorded impairment losses of \$75 million primarily related to the Cottonwood facility and the Home Solar business. Refer to Item 15 — Note 11, *Asset Impairments*, to the Consolidated Financial Statements for further discussion.

Selling, General and Administrative Costs

Selling, general and administrative costs are comprised of the following:

(In millions)	Texas	East	West/Services/ Other	Corporate	Total
Year Ended December 31, 2021	\$ 574	\$ 472	\$ 198	\$ 49	\$ 1,293
Year Ended December 31, 2020	467	260	56	27	810

Selling, general and administrative costs increased by \$483 million for the year ended December 31, 2021 compared to the same period in 2020, due to the following:

	(In millions)
Increase due to the acquisition of Direct Energy in January 2021	\$ 460
Increase due to Winter Storm Uri, including charitable giving, legal and other costs of \$20 million and ERCOT default charges of \$9 million	29
Increase due to higher consulting, service and insurance costs	26
Decrease due to lower employee costs	(23)
Decrease due to the favorable resolution of a legal matter	(15)
Other	6
Increase in selling, general and administrative costs	<u>\$ 483</u>

Provision for Credit Losses

Provision for credit losses are comprised of the following:

(In millions)	Texas	East	West/Services/ Other	Total
Year Ended December 31, 2021	\$ 678	\$ 8	\$ 12	\$ 698
Year Ended December 31, 2020	94	14	—	108

Provision for credit losses increased by \$590 million for the year ended December 31, 2021, compared to the same period in 2020, due to the following:

	(In millions)
Increase due to Winter Storm Uri, including: Increase of \$403 million related to bilateral financial hedging risk Increase of \$126 million related to counterparty credit risk Increase of \$67 million related to ERCOT default shortfall payments	\$ 596
Decrease due to improved collections in the legacy brands, partially offset by the acquisition and integration of Direct Energy in January 2021	(6)
Increase in provision for credit losses	<u>\$ 590</u>

Acquisition-Related Transaction and Integration Costs

Acquisition-related transaction and integration costs increased by \$70 million when compared to the same period in 2020. Acquisition-related transaction costs increased by \$8 million, primarily related to the Direct Energy acquisition. Integration costs increased by \$62 million, primarily related to employee costs, software costs and consulting services for the Direct Energy acquisition.

Gain on Sale of Assets

The gain on sale of assets of \$247 million was recorded for the year ended December 31, 2021 includes a \$210 million gain on the sale of 4,850 MW of fossil generating assets in December 2021, a \$20 million gain on the sale of a deactivated site in November 2021, and a \$17 million due to the sale of Agua Caliente in February 2021. The gain on the sale of assets of \$3 million for the year ended December 31, 2020 was related to the sale of land and investments in January 2020, partially offset by the disposition of the Home Solar business.

Impairment Losses on Investments

During the year ended December 31, 2020, the Company recorded other-than-temporary impairment losses on the Company's investment in Petra Nova Parish Holdings of \$18 million, as further described in Item 15 — Note 11, *Asset Impairments*, to the Consolidated Financial Statements.

Loss on Debt Extinguishment

A loss on debt extinguishment of \$77 million was recorded for the year ended December 31, 2021, driven by the redemption of senior notes as further discussed in Item 15 — Note 13, *Long-term Debt and Finance Leases*, to the Consolidated Financial Statements. A loss on debt extinguishment of \$9 million was recorded for the year ended December 31, 2020, driven by the debt extinguished in connection with the sale of Home Solar and the redemptions of the Indian River and Dunkirk bonds.

Interest Expense

Interest expense increased by \$84 million for the year ended December 31, 2021 compared to the same period in 2020, primarily due to financings entered into in connection with the Direct Energy acquisition.

Income Tax Expense

For the year ended December 31, 2021, NRG recorded income tax expense of \$672 million on pre-tax income of \$2.9 billion. For the same period in 2020, NRG recorded an income tax expense of \$251 million on pre-tax income of \$761 million. The effective tax rate was 23.5% and 33.0% for the years ended December 31, 2021 and 2020, respectively.

For the year ended December 31, 2021, NRG's overall effective tax rate was higher than the federal statutory tax rate of 21% primarily due to state tax expense partially offset by tax benefits from the revaluation of state deferred tax assets, valuation allowance, and settlements of uncertain tax positions.

(In millions, except effective income tax rate)	Year Ended December 31,	
	2021	2020
Income from continuing operations before income taxes	\$ 2,859	\$ 761
Tax at federal statutory tax rate	600	160
Foreign rate differential	(3)	—
State taxes	111	18
Deferred impact of state tax rate changes	(10)	2
Changes in valuation allowance	(29)	24
Permanent differences	8	8
Return to provision adjustments	5	36
Recognition of uncertain tax benefits	(10)	3
Income tax expense	\$ 672	\$ 251
Effective income tax rate	23.5 %	33.0 %

The effective income tax rate may vary from period to period depending on, among other factors, the geographic and business mix of earnings and losses and changes in valuation allowances in accordance with ASC 740, *Income Taxes*, or ASC 740. These factors and others, including the Company's history of pre-tax earnings and losses, are taken into account in assessing the ability to realize deferred tax assets.

Liquidity and Capital Resources

Liquidity Position

As of December 31, 2021 and 2020, NRG's liquidity, excluding collateral funds deposited by counterparties, was approximately \$2.7 billion and \$7.0 billion, respectively, comprised of the following:

(In millions)	As of December 31,	
	2021	2020
Cash and cash equivalents:	\$ 250	\$ 3,905
Restricted cash - operating	4	3
Restricted cash - reserves ^(a)	11	3
Total	265	3,911
Total availability under Revolving Credit Facility and collective collateral facilities ^(b)	2,421	3,129
Total liquidity, excluding collateral funds deposited by counterparties	\$ 2,686	\$ 7,040

(a) Includes reserves primarily for debt service, performance obligations and capital expenditures

(b) Total capacity of Revolving Credit Facility and collective collateral facilities was \$5.9 billion and \$4.0 billion as of December 31, 2021 and December 31, 2020, respectively

As of December 31, 2021, total liquidity, excluding collateral funds deposited by counterparties, decreased by \$4.4 billion. The decrease was primarily driven by the closing of the Direct Energy acquisition and the impact of Winter Storm Uri. Changes in cash and cash equivalent balances are further discussed under the heading *Cash Flow Discussion*. Cash and cash equivalents at December 31, 2021 were predominantly held in money market funds invested in treasury securities, treasury repurchase agreements or government agency debt.

Management believes that the Company's liquidity position and cash flows from operations will be adequate to finance operating and maintenance capital expenditures, to fund dividends to NRG's common stockholders, and to fund other liquidity commitments. Management continues to regularly monitor the Company's ability to finance the needs of its operating, financing and investing activity within the dictates of prudent balance sheet management.

Credit Ratings

On March 17, 2021, following Winter Storm Uri, Standard & Poor's placed NRG's issuer credit rating of BB+ on CreditWatch with negative implications. On May 12, 2021, Standard & Poor's affirmed NRG's issuer credit rating of BB+ with a stable outlook. On March 19, 2021, Moody's changed NRG's rating outlook from positive to stable. At the same time, Moody's affirmed NRG's corporate family rating of Ba1.

The following table summarizes the Company's current credit ratings:

	S&P	Moody's
NRG Energy, Inc.	BB+ Stable	Ba1 Stable
3.75% Senior Secured Notes, due 2024	BBB-	Baa3
2.00% Senior Secured Notes, due 2025	BBB-	Baa3
2.45% Senior Secured Notes, due 2027	BBB-	Baa3
6.625% Senior Notes, due 2027	BB+	Ba2
5.75% Senior Notes, due 2028	BB+	Ba2
3.375% Senior Notes, due 2029	BB+	Ba2
4.45% Senior Secured Notes, due 2029	BBB-	Baa3
5.25% Senior Notes, due 2029	BB+	Ba2
3.625% Senior Notes, due 2031	BB+	Ba2
3.875% Senior Notes, due 2032	BB+	Ba2
Revolving Credit Facility, due 2024	BBB-	Baa3

Liquidity

The principal sources of liquidity for NRG's operating and capital expenditures are expected to be derived from cash on hand, cash flows from operations and financing arrangements. As described in Item 15 — Note 13, *Long-term Debt and Finance Leases*, to the Consolidated Financial Statements, the Company's financing arrangements consist mainly of the Senior Notes, Convertible Senior Notes, Senior Secured First Lien Notes, Revolving Credit Facility, and tax-exempt bonds.

The Company's requirements for liquidity and capital resources, other than for operating its facilities, can generally be categorized by the following: (i) market operations activities; (ii) debt service obligations, as described more fully in Item 15 — Note 13, *Long-term Debt and Finance Leases*, to the Consolidated Financial Statements; (iii) capital expenditures, including maintenance, repowering, development, and environmental; and (iv) allocations in connection with acquisition opportunities, debt repayments, share repurchases and dividend payments to stockholders, as described in Item 15 — Note 16, *Capital Structure*, to the Consolidated Financial Statements.

Direct Energy Acquisition

On January 5, 2021, the Company acquired Direct Energy, which had been a North American subsidiary of Centrica. Direct Energy is a leading retail provider of electricity, natural gas, and home and business energy related products and services in North America, with operations in all 50 U.S. states and 8 Canadian provinces.

The Company paid an aggregate purchase price of \$3.625 billion in cash, subject to a purchase price adjustment of \$77 million. The Company funded the purchase price using a combination of \$715 million of cash on hand, \$166 million from a draw on its Revolving Credit Facility (of which \$107 million was used to fund acquisition costs and financing fees that are not included in the aggregate purchase price above) as well as approximately \$2.9 billion in secured and unsecured corporate debt issued in December 2020. The final purchase price adjustment resulted in additional payment of \$22 million, which was paid to Centrica in December 2021.

Collateral Facility Increases

The following table presents increases to the Company's liquidity and collateral facilities in connection with the Direct Energy acquisition:

	(In millions)
Available on Acquisition Closing Date	
Revolving Credit Facility commitment increase	\$ 802
Revolving Credit Facility new tranche	273
Facility agreement in connection with the sale of pre-capitalized trust securities	874
Available as of December 31, 2020	
Credit default swap facility	150
Revolving accounts receivable financing facility	750
Repurchase facility	75
Bilateral letter of credit facilities	475
Total Increases to Liquidity and Collateral Facilities	<u>\$ 3,399</u>

Planned Debt Reduction

In light of the impact of Winter Storm Uri, the Company's deleveraging program will extend to 2023. The Company remains committed to maintaining a strong balance sheet and continues to work to achieve investment grade credit metrics.

Issuance of 2032 Senior Notes

On August 23, 2021, the Company issued \$1.1 billion of aggregate principal amount at par of 3.875% senior notes due 2032 (the "2032 Senior Notes"). The 2032 Senior Notes are senior unsecured obligations of NRG and are guaranteed by certain of its subsidiaries. The 2032 Senior Notes were issued under NRG's Sustainability-Linked Bond Framework, which sets out certain sustainability targets, including reducing greenhouse gas emissions. Failure to meet such sustainability targets will result in a 25 basis point increase to the interest rate payable on the 2032 Senior Notes from and including August 15, 2026.

Senior Note Redemptions

During the year ended December 31, 2021, the Company redeemed \$1.9 billion in aggregate principal of its Senior Notes for \$1.9 billion using the proceeds of the 2032 Senior Notes and cash on hand. In connection with the redemptions, a \$77 million loss on debt extinguishment was recorded.

Receivables Facility

On July 26, 2021, NRG Receivables LLC, a wholly-owned indirect subsidiary of the Company, renewed its existing accounts receivable securitized borrowings facility (the "Receivables Facility") to, among others, (i) increase the facility size to \$800 million, (ii) extend the maturity date until July 26, 2022, (iii) make certain adjustments to the pool of receivables through the Receivables Facility and certain related covenants, and (iv) provide for revised language relating to interest determination based on SOFR in case of a LIBOR cessation or the occurrence of certain other trigger events. As of December 31, 2021, there were no outstanding borrowings and there were \$400 million in letters of credit issued under the Receivables Facility.

Repurchase Facility

On July 26, 2021, the Company renewed its existing uncommitted repurchase facility ("Repurchase Facility") to, among other things, (i) extend the maturity date to July 26, 2022 and (ii) provide for revised language relating to interest determination based on SOFR in case of a LIBOR cessation or the occurrence of certain other trigger events. On February 9, 2022, the Company entered into amendments to its existing Repurchase Facility to, among other things, (i) increase the size of the facility from \$75 million to \$150 million and (ii) replace LIBOR with term SOFR as the benchmark for the pricing rate. The Repurchase Facility has no commitment fee and borrowings will be drawn at SOFR + 1.30%. As of December 31, 2021, there were no outstanding borrowings under the Repurchase Facility.

Sale of 4.8 GW of Fossil Generation Assets

On December 1, 2021, the Company closed the previously announced sale of approximately 4,850 MWs of fossil generating assets from its East and West regions to Generation Bridge, an affiliate of ArcLight Capital Partners. At Closing, NRG received \$623 million of net proceeds, after working capital and other adjustments, including a deduction for cash flows generated of approximately \$11 million per month from the beginning of the year until the closing of the transaction, in lieu of

cash flows generated during the year. As part of the transaction, NRG entered into a tolling agreement for the 866 MW Arthur Kill plant in New York City through April 2025.

Sale of Agua Caliente

On February 3, 2021, the Company closed on the sale of its 35% ownership in the Agua Caliente solar project to Clearway Energy, Inc. for \$202 million. NRG recognized a gain on the sale of \$17 million, including cash disposed of \$7 million.

CARES Act

On March 27, 2020, the U.S. government enacted the CARES Act, which provides, among other things: (i) the option to defer payments of certain 2019 employer payroll taxes incurred after the date of enactment; and (ii) allows NOLs from tax years 2018, 2019, and 2020 to be carried back five years. The total benefit to the Company due to the CARES Act was \$35 million. Of this amount, \$13 million was paid to social security in 2021 and \$13 million will be payable in 2022.

Pension Plan Contribution

The American Rescue Plan Act ("ARPA") was enacted on March 11, 2021 to provide economic relief related to the COVID-19 pandemic. ARPA provided pension funding relief for single employer plans, among other provisions. As a result, NRG reduced its 2021 planned cash contribution by approximately \$23 million.

Pension and Other postretirement benefits minimum funding requirements

As of December 31, 2021, the Company does not have estimated minimum pension contributions required under the Pension Protection Act of 2006 for the next 5 years. As of December 31, 2021, the Company's estimated Other postretirement benefits minimum funding requirements for the next 5 years were \$33 million, of which \$7 million are required to be made within the next 12 months. These amounts represent estimates based on assumptions that are subject to change. For further discussion, see Item 15 — Note 15, *Benefit Plans and Other Postretirement Benefits*, to the Consolidated Financial Statements.

Debt Service Obligations

Principal payments on debt and finance leases as of December 31, 2021 are due in the following periods:

(In millions)

Description	2022	2023	2024	2025	2026	Thereafter	Total
Recourse Debt:							
Senior notes, due 2027	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 375	\$ 375
Senior notes, due 2028	—	—	—	—	—	821	821
Senior notes, due 2029	—	—	—	—	—	733	733
Senior notes, due 2029	—	—	—	—	—	500	500
Senior notes, due 2031	—	—	—	—	—	1,030	1,030
Senior Notes, due 2032	—	—	—	—	—	1,100	1,100
Convertible Senior Notes, due 2048	—	—	—	—	—	575	575
Senior Secured First Lien Notes, due 2024	—	—	600	—	—	—	600
Senior Secured First Lien Notes, due 2025	—	—	—	500	—	—	500
Senior Secured First Lien Notes, due 2027	—	—	—	—	—	900	900
Senior Secured First Lien Notes, due 2029	—	—	—	—	—	500	500
Tax-exempt bonds	—	—	—	—	—	466	466
Subtotal Recourse Debt	—	—	600	500	—	7,000	8,100
Finance Leases:							
Finance leases	4	3	3	2	—	1	13
Subtotal Finance Leases	4	3	3	2	—	1	13
Total Debt and Finance Leases	\$ 4	\$ 3	\$ 603	\$ 502	\$ —	\$ 7,001	\$ 8,113
Interest Payments	\$ 385	\$ 383	\$ 363	\$ 352	\$ 334	\$ 1,224	\$ 3,041

For further discussion, see Item 15 — Note 13, *Long-term Debt and Finance Leases*.

Market Operations

The Company's market operations activities require a significant amount of liquidity and capital resources. These liquidity requirements are primarily driven by: (i) margin and collateral posted with counterparties; (ii) margin and collateral required to participate in physical markets and commodity exchanges; (iii) timing of disbursements and receipts (e.g. buying fuel before receiving energy revenues); and (iv) initial collateral for large structured transactions. As of December 31, 2021, market operations had total cash collateral outstanding of \$291 million and \$3.5 billion outstanding in letters of credit to third parties primarily to support its market activities. As of December 31, 2021, total funds deposited by counterparties were \$845 million in cash and \$429 million of letters of credit.

The Company has entered into long-term contractual arrangements to procure certain fuel and transportation services for the Company's generation assets. As of December 31, 2021, the Company had minimum payment obligations under such outstanding agreements of \$378 million, with \$122 million payable within the next 12 months. Additionally, the Company has long-term contractual commitments related to electricity and natural gas products, including power purchases, gas transportation and storage of various quantities and durations, and renewable purchased power agreements under PPAs with third-party project developers, which are accounted for as NPNS. As of December 31, 2021, the Company had minimum purchased energy commitments of \$5.0 billion, with \$1.6 billion payable within the next 12 months. For further discussion, see Item 15 — Note 23, *Commitments and Contingencies*.

Future liquidity requirements may change based on the Company's hedging activities and structures, fuel purchases, and future market conditions, including forward prices for energy and fuel and market volatility. In addition, liquidity requirements are dependent on the Company's credit ratings and general perception of its creditworthiness.

First Lien Structure

NRG has granted first liens to certain counterparties on a substantial portion of the Company's assets, subject to various exclusions including NRG's assets that have project-level financing and the assets of certain non-guarantor subsidiaries, to reduce the amount of cash collateral and letters of credit that it would otherwise be required to post from time to time to support its obligations under out-of-the-money hedge agreements for forward sales of power or MWh equivalents. The first lien program does not limit the volume that can be hedged or the value of underlying out-of-the-money positions. The first lien program also does not require NRG to post collateral above any threshold amount of exposure. The first lien structure is not subject to unwind or termination upon a ratings downgrade of a counterparty and has no stated maturity date.

The Company's first lien counterparties may have a claim on its assets to the extent market prices exceed the hedged prices. As of December 31, 2021, all hedges under the first liens were out-of-the-money on a counterparty aggregate basis.

The following table summarizes the amount of MW hedged against the Company's coal and nuclear assets and as a percentage relative to the Company's coal and nuclear capacity under the first lien structure as of December 31, 2021:

Equivalent Net Sales Secured by First Lien Structure ^(a)	2022	2023
In MW	653	738
As a percentage of total net coal and nuclear capacity ^(b)	15%	17%

(a) Equivalent Net Sales include natural gas swaps converted using a weighted average heat rate by region

(b) Net coal and nuclear capacity represents 80% of the Company's total coal and nuclear assets eligible under the first lien, which excludes coal assets acquired in the Midwest Generation acquisition

Capital Expenditures

The following table summarizes the Company's capital expenditures for maintenance, environmental, and growth investments for the year ended December 31, 2021:

(In millions)	Maintenance	Environmental	Growth Investments^(a)	Total
Texas	\$ (127)	\$ (1)	\$ (25)	\$ (153)
East	(23)	(1)	(26)	(50)
West/Services/Other	(21)	—	—	(21)
Corporate	(4)	—	(41)	(45)
Total cash capital expenditures for 2021	(175)	(2)	(92)	(269)
Investments	—	—	(47)	(47)
Total capital expenditures and investments	\$ (175)	\$ (2)	\$ (139)	\$ (316)

(a) Includes other investments, acquisitions, digital NRG and integration projects

Growth investments in East for the year ended December 31, 2021 include the Astoria generating facility, for which the Company has proposed to replace existing units with a single, new state-of-the-art Simple Cycle Combustion Turbine having a total generating capacity of 437 MW. On October 27, 2021, the NYSDEC Staff denied the Company's application for an air permit. On November 26, 2021, Astoria Gas Turbine Power LLC filed a Request for Adjudicatory Hearing on the NYSDEC's denial. To date, the Company has spent approximately \$42 million on the Astoria project. Additionally, included in Investments are expenditures for Encina site improvements classified as ARO payments. Demolition of Encina is underway and is expected to be completed in the first half of 2022. The Company expects to begin marketing the site in 2022.

Environmental Capital Expenditures Estimate

NRG estimates that environmental capital expenditures from 2022 through 2026 required to comply with environmental laws will be approximately \$56 million. The largest component is the cost of complying with ELG at our coal units in Texas.

The table below summarizes the status of NRG's coal fleet with respect to air quality controls. NRG uses an integrated approach to fuels, controls and emissions markets to meet environmental requirements.

Units	SO ₂			NO _x		Mercury		Particulate	
	State	Control Equipment	Install Date	Control Equipment	Install Date	Control Equipment	Install Date	Control Equipment	Install Date
Indian River 4	DE	CDS	2011	LNBOFA/SCR	1999/2011	ACI/CDS/FF	2008/2011	ESP/FF	1980/2011
Limestone 1-2	TX	FGD	1985-86	LNBOFA	2002/2003	ACI	2015	ESP	1985-1986
Powerton 5	IL	DSI	2016	OFA/SNCR	2003/2012	ACI	2009	ESP/upgrade	1973/2016
Powerton 6	IL	DSI	2014	OFA/SNCR	2002/2012	ACI	2009	ESP/upgrade	1976/2014
W.A. Parish 5, 6, 7	TX	FF co-benefit	1988	SCR	2004	ACI	2015	FF	1988
W.A. Parish 8	TX	FGD	1982	SCR	2004	ACI	2015	FF	1988
Waukegan 7	IL	DSI	2014	LNBOFA	2002	ACI	2008	ESP/upgrade	1958/2002, 2014
Waukegan 8	IL	DSI	2015	LNBOFA	1999	ACI	2008	ESP/upgrade	1962/1999, 2015
Will County 4	IL	DSI	2017	LNBOFA	1999,2000	ACI	2009	ESP/upgrade	1963,72/2000

ACI - Activated Carbon Injection
 CDS - Circulating Dry Scrubber
 DSI - Dry Sorbent Injection with Trona
 ESP - Electrostatic Precipitator
 FGD - Flue Gas Desulfurization (wet)

FF- Fabric Filter
 LNBOFA - Low NO_x Burner with Overfire Air
 OFA - Overfire Air
 SCR - Selective Catalytic Reduction
 SNCR - Selective Non-Catalytic Reduction

The following table summarizes the estimated environmental capital expenditures by year:

(In millions)	Total
2022	\$ 8
2023	1
2024	22
2025	22
2026	3
Total	\$ 56

Share Repurchases

In December 2021, the Company's board of directors authorized the Company to repurchase \$1.0 billion of its common stock. Through December 31, 2021, the Company completed \$53 million of share repurchases at an average price of \$40.22 per share, including \$9 million of equivalent shares purchased in lieu of tax withholdings on equity compensation issuances. Through February 24, 2022, an additional \$82 million of share repurchases were executed at an average price of \$40.26 per share, including \$6 million of equivalent shares purchased in lieu of tax withholdings on equity compensation issuances. See Item 15 - Note 16, *Capital Structure*, to the Consolidated Financial Statements for additional discussion.

Dividend Increase

In the first quarter of 2021, NRG increased the annual dividend to \$1.30 from \$1.20 per share. The Company returned \$320 million of capital to shareholders in the year ended 2021 through a \$1.30 dividend per common share. In 2022, NRG further increased the annual dividend to \$1.40 per share, representing an 8% increase from 2021. The Company expects to target an annual dividend growth rate of 7-9% per share in subsequent years.

On January 21, 2022, NRG declared a quarterly dividend on the Company's common stock of \$0.35 per share, or \$1.40 per share on an annualized basis, payable on February 15, 2022, to stockholders of record as of February 1, 2022. The Company's common stock dividends are subject to available capital, market conditions, and compliance with associated laws and regulations.

Additional Material Cash Requirements Not Discussed Above

Operating leases — The Company leases generating facilities, land, office and equipment, railcars, fleet vehicles and storefront space at retail stores. As of December 31, 2021, the Company had lease payment obligations of \$372 million, of which \$96 million is payable within the next 12 months. For further discussion, see Item 15 — Note 10, Leases.

Other liabilities — Other liabilities includes water right agreements, service and maintenance agreements, stadium naming rights, stadium sponsorships, LTSA commitments and other contractual obligations. As of December 31, 2021, the Company had total of \$210 million under such commitments, of which \$41 million are payable within the next 12 months.

Contingent obligations for guarantees — NRG and its subsidiaries enter into various contracts that include indemnifications and guarantee provisions as a routine part of the Company's business activities. For further discussion, see Item 15 — Note 27, Guarantees.

Obligations Arising Out of a Variable Interest in an Unconsolidated Entity

Variable interest in Equity investments — As of December 31, 2021, NRG has several investments with an ownership interest percentage of 50% or less in energy and energy-related entities that are accounted for under the equity method of accounting. Ivanpah is considered a variable interest entity for which NRG is not the primary beneficiary.

NRG's pro-rata share of non-recourse debt held by unconsolidated affiliates was approximately \$535 million as of December 31, 2021. This indebtedness may restrict the ability of these subsidiaries to issue dividends or distributions to NRG. See also Item 15 — Note 17, *Investments Accounted for by the Equity Method and Variable Interest Entities*, to the Consolidated Financial Statements for additional discussion.

Cash Flow Discussion

2021 compared to 2020

The following table reflects the changes in cash flows for the comparative years:

(In millions)	Year ended December 31,		
	2021	2020	Change
Net cash provided by operating activities	\$ 493	\$ 1,837	\$ (1,344)
Net cash used by investing activities	(3,039)	(494)	(2,545)
Net cash (used)/provided by financing activities	(272)	2,204	(2,476)

Net Cash (Used)/Provided By Operating Activities

Changes to net cash (used)/provided by operating activities were driven by:

	(In millions)
Decrease in working capital related to accounts receivable primarily driven by milder weather in 2020, the impact of Winter Storm Uri and additional early settlement of capacity obligations in 2021	\$ (1,232)
Decrease in operating income adjusted for other non-cash items	(1,235)
Changes in cash collateral in support of risk management activities due to change in commodity prices	670
Increase in working capital related to accounts payable primarily driven by increases in gas purchases and bilateral physical settlements driven by price and volume in ERCOT	532
Decrease in working capital related to inventory due to replenishing natural gas inventory at significantly higher prices	(88)
Other changes in working capital	9
	<u>\$ (1,344)</u>

Net Cash (Used)/Provided By Investing Activities

Changes to net cash (used)/provided by investing activities were driven by:

	(In millions)
Increase in cash paid for acquisitions of assets primarily for Direct Energy	\$ (3,275)
Increase in proceeds from sale of assets primarily due to the fossil generating assets and Agua Caliente	749
Decrease in capital expenditures	(39)
Increase in proceeds from sales of investments in nuclear decommissioning trust fund securities, net of purchases	12
Increase in sales of emissions allowances, net of purchases	10
Other	(2)
	<u>\$ (2,545)</u>

Net Cash (Used)/Provided By Financing Activities

Changes in net cash (used)/provided by financing activities were driven by:

	(In millions)
Decrease in proceeds from issuance of long-term debt	\$ (2,134)
Increase in payments of long-term debt	(1,526)
Increase in net receipts from settlement of acquired derivatives	945
Decrease in payments for share repurchase activity	181
Increase in proceeds from Revolving Credit Facility and Receivables Securitization Facilities	83
Increase in payments of dividends to common stockholders	(24)
Other	(1)
	<u>\$ (2,476)</u>

NOLs, Deferred Tax Assets and Uncertain Tax Position Implications

For the year ended December 31, 2021, the Company had domestic pre-tax book income of \$2.8 billion and foreign pre-tax book income of \$100 million. For the year ended December 31, 2021, the Company utilized U.S. federal NOLs of \$1.6 billion due to current year taxable income. As of December 31, 2021, the Company has cumulative U.S. federal NOL carryforwards of \$8.4 billion, of which \$11 million were generated prior to Tax Cuts and Jobs Act and will begin expiring in 2031 and cumulative state NOL carryforwards of \$5.2 billion for financial statement purposes. NRG also has cumulative foreign NOL carryforwards of \$383 million, which do not have an expiration date. In addition to the above NOLs, NRG has a \$20 million indefinite carryforward for interest deductions, as well as \$384 million of tax credits to be utilized in future years. As a result of the Company's tax position, including the utilization of federal and state NOLs, and based on current forecasts, the Company anticipates income tax payments, due to federal, state and foreign jurisdictions, of up to \$58 million in 2022.

The Company has \$13 million of tax effected uncertain federal and state tax benefits for which the Company has recorded a non-current tax liability of \$14 million (including accrued interest) until such final resolution with the related taxing authority.

The Company is no longer subject to U.S. federal income tax examinations for years prior to 2018. With few exceptions, state and Canadian income tax examinations are no longer open for years before 2013.

Guarantor Financial Information

As of December 31, 2021, the Company's outstanding registered senior notes consisted of \$375 million of the 2027 Senior Notes and \$821 million of the 2028 Senior Notes, as shown in Note 13, *Long-term Debt and Finance Leases*. These Senior Notes are guaranteed by certain of NRG's current and future 100% owned domestic subsidiaries, or guarantor subsidiaries (the "Guarantors"). See Exhibit 22.1 for a listing of the Guarantors. These guarantees are both joint and several.

NRG conducts much of its business through and derives much of its income from its subsidiaries. Therefore, the Company's ability to make required payments with respect to its indebtedness and other obligations depends on the financial results and condition of its subsidiaries and NRG's ability to receive funds from its subsidiaries. There are no restrictions on the ability of any of the Guarantors to transfer funds to NRG. Other subsidiaries of the Company do not guarantee the registered debt securities of either NRG Energy, Inc. or the Guarantors (such subsidiaries are referred to as the "Non-Guarantors"). The Non-Guarantors include all of NRG's foreign subsidiaries and certain domestic subsidiaries.

The tables below present summarized financial information of NRG Energy, Inc. and the Guarantors in accordance with Rule 3-10 under the SEC's Regulation S-X. The financial information may not necessarily be indicative of results of operations or financial position of NRG Energy, Inc. and the Guarantors in accordance with U.S. GAAP.

The following table presents the summarized statement of operations:

(In millions)	For the Year Ended December 31, 2021^(a)
Operating revenues	\$ 23,679
Operating income	3,753
Total other expense	(467)
Income from continuing operations before income taxes	3,286
Net Income	2,633

(a) Intercompany transactions with Non-Guarantors include operating revenue of \$42 million, cost of operations of \$(235) million and selling, general and administrative of \$108 million

The following table presents the summarized balance sheet information:

(In millions)	December 31, 2021
Current assets ^(a)	\$ 9,399
Property, plant and equipment, net	1,324
Non-current assets	11,569
Current liabilities ^(a)	7,590
Non-current liabilities	11,195

(a) Includes intercompany receivables of \$86 million and intercompany payables of \$50 million due from Non-Guarantors

Fair Value of Derivative Instruments

NRG may enter into power purchase and sales contracts, fuel purchase contracts and other energy-related financial instruments to mitigate variability in earnings due to fluctuations in spot market prices and to hedge fuel requirements at power plants or retail load obligations. In addition, in order to mitigate foreign exchange rate risk primarily associated with the purchase of USD denominated natural gas for the Company's Canadian business, NRG enters into foreign exchange contract agreements.

NRG's trading activities are subject to limits in accordance with the Company's Risk Management Policy. These contracts are recognized on the balance sheet at fair value and changes in the fair value of these derivative financial instruments are recognized in earnings.

The tables below disclose the activities that include both exchange and non-exchange traded contracts accounted for at fair value in accordance with ASC 820, *Fair Value Measurements and Disclosures*, or ASC 820. Specifically, these tables disaggregate realized and unrealized changes in fair value; disaggregate estimated fair values at December 31, 2021, based on their level within the fair value hierarchy defined in ASC 820; and indicate the maturities of contracts at December 31, 2021. For a full discussion of the Company's valuation methodology of its contracts, see *Derivative Fair Value Measurements* in Item 15 — Note 5, *Fair Value of Financial Instruments*, to the Consolidated Financial Statements.

Derivative Activity (Losses)/Gains	(In millions)
Fair value of contracts as of December 31, 2020	\$ (63)
Contracts realized or otherwise settled during the period	190
Contracts acquired from Direct Energy	(283)
Changes in fair value	2,497
Fair value of contracts as of December 31, 2021	<u>\$ 2,341</u>

(In millions)	Fair Value of Contracts as of December 31, 2021				
	Maturity				
	1 Year or Less	Greater Than 1 Year to 3 Years	Greater Than 3 Years to 5 Years	Greater Than 5 Years	Total Fair Value
Fair value hierarchy Gains					
Level 1	\$ 134	\$ 192	\$ 23	\$ 6	\$ 355
Level 2	941	645	82	25	1,693
Level 3	151	82	16	44	293
Total	<u>\$ 1,226</u>	<u>\$ 919</u>	<u>\$ 121</u>	<u>\$ 75</u>	<u>\$ 2,341</u>

The Company has elected to disclose derivative assets and liabilities on a trade-by-trade basis and does not offset amounts at the counterparty master agreement level. Also, collateral received or posted on the Company's derivative assets or liabilities are recorded on a separate line item on the balance sheet. Consequently, the magnitude of the changes in individual current and non-current derivative assets or liabilities is higher than the underlying credit and market risk of the Company's portfolio. As discussed in Item 7A — *Quantitative and Qualitative Disclosures About Market Risk, Commodity Price Risk*, NRG measures the sensitivity of the Company's portfolio to potential changes in market prices using VaR, a statistical model which attempts to predict risk of loss based on market price and volatility. NRG's risk management policy places a limit on one-day holding period VaR, which limits the Company's net open position. As the Company's trade-by-trade derivative accounting results in a gross-up of the Company's derivative assets and liabilities, the net derivative assets and liability position is a better indicator of NRG's hedging activity. As of December 31, 2021, NRG's net derivative asset was \$2.3 billion, an increase to total fair value of \$2.4 billion as compared to December 31, 2020. This increase was primarily driven by roll-off trades that settled during the period, as well as gains in fair value.

Based on a sensitivity analysis using simplified assumptions, the impact of a \$0.50 per MMBtu increase in natural gas prices across the term of the derivative contracts would result in an increase of approximately \$1.3 billion in the net value of derivatives as of December 31, 2021.

The impact of a \$0.50 per MMBtu decrease in natural gas prices across the term of the derivative contracts would result in a decrease of approximately \$1.4 billion in the net value of derivatives as of December 31, 2021.

Critical Accounting Estimates

The Company's discussion and analysis of the financial condition and results of operations are based upon the Consolidated Financial Statements, which have been prepared in accordance with GAAP. The preparation of these financial statements and related disclosures in compliance with GAAP requires the application of appropriate technical accounting rules and guidance as well as the use of estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosures of contingent assets and liabilities. The application of appropriate technical accounting rules and guidance involves judgments regarding future events, including the likelihood of success of particular projects, legal and regulatory challenges, and the fair value of certain assets and liabilities. These judgments, in and of themselves, could materially affect the financial statements and disclosures based on varying assumptions, which may be appropriate to use. In addition, the financial and operating environment may also have a significant effect, not only on the operation of the business, but on the results reported through the application of accounting measures used in preparing the financial statements and related disclosures, even if the accounting guidance has not changed.

NRG evaluates these estimates, on an ongoing basis, utilizing historic experience, consultation with experts and other methods the Company considers reasonable. In any event, actual results may differ substantially from the Company's estimates. Any effects on the Company's business, financial position or results of operations resulting from revisions to these estimates are recorded in the period in which the information that gives rise to the revision becomes known.

The Company identifies its most critical accounting estimates as those that are the most pervasive and important to the portrayal of the Company's financial position and results of operations, and require the most difficult, subjective, and/or complex judgments by management about matters that are inherently uncertain.

Such accounting estimates include:

Accounting Estimate	Judgments/Uncertainties Affecting Application
Derivative Instruments	Assumptions used in valuation techniques
	Assumptions used in forecasting generation and retail load
	Market maturity and economic conditions
	Contract interpretation
Income Taxes and Valuation Allowance for Deferred Tax Assets	Market conditions in the energy industry, especially the effects of price volatility on contractual commitments
	Ability to be sustained upon audit examination of taxing authorities
	Interpret existing tax statute and regulations upon application to transactions
Evaluation of Assets for Impairment and Other-Than-Temporary Decline in Value	Ability to utilize tax benefits through carry backs to prior periods and carry forwards to future periods
	Recoverability of investment through future operations
	Regulatory and political environments and requirements
	Estimated useful lives of assets
Goodwill and Other Intangible Assets	Environmental obligations and operational limitations
	Estimates of future cash flows
	Estimates of fair value
	Judgment about impairment triggering events
	Estimated useful lives for finite-lived intangible assets
	Judgment about impairment triggering events
Business Combinations	Estimates of reporting unit's fair value
	Fair value estimate of intangible assets acquired in business combinations
	Fair value of assets acquired and liabilities assumed in business combinations
Contingencies	Estimated future cash flow
	Estimated useful lives of assets
	Estimated financial impact of event(s)
	Judgment about likelihood of event(s) occurring
	Regulatory and political environments and requirements

Derivative Instruments

The Company follows the guidance of ASC 815, *Derivatives and Hedging*, or ASC 815, to account for derivative instruments. ASC 815 requires the Company to mark-to-market all derivative instruments on the balance sheet and recognize fair value change in earnings, unless they qualify for the NPNS exception. ASC 815 applies to NRG's energy related commodity contracts, interest rate swaps and foreign exchange contracts.

For purposes of measuring the fair value of derivative instruments, the Company uses quoted exchange prices and broker quotes. When external prices are not available, NRG uses internal models to determine the fair value. These internal models include assumptions of the future prices of energy commodities based on the specific market in which the energy commodity is being purchased or sold, using externally available forward market pricing curves for all periods possible under the pricing model. These estimations are considered to be critical accounting estimates.

During the fourth quarter of 2020, the Company entered into \$1.6 billion of interest rate hedges associated with anticipated certain financing needs. As of December 31, 2020, the interest rate hedges were settled in connection with the issuance of fixed rate debt, resulting in a gain of \$11 million that was recorded as a reduction to interest expense. In order to qualify the derivative instruments for hedged transactions prior to termination, NRG estimated the forecasted borrowings for interest rate swaps occurring within a specified time period.

In order to mitigate foreign exchange risk primarily associated with the purchase of USD denominated natural gas for the Company's Canadian business, the Company enters into foreign exchange contract agreements.

Certain derivative instruments that meet the criteria for derivative accounting treatment also qualify for a scope exception to derivative accounting, as they are considered to be NPNS. The availability of this exception is based upon the assumption that the Company has the ability and it is probable to deliver or take delivery of the underlying item. These assumptions are based on expected load requirements, internal forecasts of sales and generation and historical physical delivery on contracts. Derivatives that are considered to be NPNS are exempt from derivative accounting treatment and are accounted for under accrual accounting. If it is determined that a transaction designated as NPNS no longer meets the scope exception due to changes in estimates, the related contract would be recorded on the balance sheet at fair value combined with the immediate recognition through earnings.

Income Taxes and Valuation Allowance for Deferred Tax Assets

As of December 31, 2021, NRG's deferred tax assets were primarily the result of U.S. federal and state NOLs, the difference between book and tax basis in property, plant, and equipment, and tax credit carryforwards. The realization of deferred tax assets is dependent upon the Company's ability to generate sufficient future taxable income during the periods in which those temporary differences become deductible, prior to the expiration of the tax attributes. The evaluation of deferred tax assets requires judgment in assessing the likely future tax consequences of events that have been recognized in the Company's financial statements or tax returns and forecasting future profitability by tax jurisdiction.

The Company evaluates its deferred tax assets quarterly on a jurisdictional basis to determine whether adjustments to the valuation allowance are appropriate considering changes in facts or circumstances. As of each reporting date, management considers new evidence, both positive and negative, when determining the future realization of the Company's deferred tax assets. Given the Company's current level of pre-tax earnings and forecasted future pre-tax earnings, the Company expects to generate income before taxes in the U.S. in future periods at a level that would fully utilize its U.S. federal NOL carryforwards and the majority of its state NOL carryforwards prior to their expiration.

The Company continues to maintain a valuation allowance of approximately \$248 million as of December 31, 2021 against deferred tax assets consisting of state net operating losses and foreign NOL carryforwards in jurisdictions where the Company does not currently believe that the realization of deferred tax assets is more likely than not. As of December 31, 2020 the Company's valuation allowance balance was \$266 million.

Considerable judgment is required to determine the tax treatment of a particular item that involves interpretations of complex tax laws. The Company is subject to examination by taxing authorities for income tax returns filed in the U.S. federal jurisdiction and various state and foreign jurisdictions, including operations located in Australia and Canada. The Company continues to be under audit for multiple years by taxing authorities in various jurisdictions.

The Company is no longer subject to U.S. federal income tax examinations for years prior to 2018. With few exceptions, state and Canadian income tax examinations are no longer open for years before 2013.

NRG does not intend, nor currently foresee a need, to repatriate funds held at our international operations into the U.S. These funds are deemed to be indefinitely reinvested in our foreign operations and the Company has not changed its assertion with respect to distributions of funds that would require the accrual of U.S. income tax.

Evaluation of Assets for Impairment and Other-Than-Temporary Decline in Value

In accordance with ASC 360, *Property, Plant, and Equipment*, or ASC 360, the Company evaluates property, plant and equipment and certain intangible assets for impairment whenever indicators of impairment exist. Examples of such indicators or events include:

- Significant decrease in the market price of a long-lived asset;
- Significant adverse change in the manner an asset is being used or its physical condition;
- Adverse business climate;
- Accumulation of costs significantly in excess of the amounts originally expected for the construction or acquisition of an asset;
- Current period loss combined with a history of losses or the projection of future losses; and
- Change in the Company's intent about an asset from an intent to hold to a greater than 50% likelihood that an asset will be sold, or disposed of before the end of its previously estimated useful life.

Recoverability of assets to be held and used is measured by a comparison of the carrying amount of the assets to the future net cash flows expected to be generated by the asset, through considering project specific assumptions for long-term power and natural gas prices, escalated future project operating costs and expected plant operations. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the fair value of the assets by factoring in the different courses of action available to the Company. Generally, fair value will be determined using valuation techniques, such as the present value of expected future cash flows. NRG uses its best estimates in making these evaluations and considers various factors, including forward price curves for energy, fuel and operating costs. However, actual future market prices and project costs could vary from the assumptions used in the Company's estimates and the impact of such variations could be material.

For assets to be held and used, if the Company determines that the undiscounted cash flows from the asset are less than the carrying amount of the asset, NRG must estimate fair value to determine the amount of any impairment loss. Assets held-for-sale are reported at the lower of the carrying amount or fair value less the cost to sell. The estimation of fair value, whether in conjunction with an asset to be held and used or with an asset held-for-sale, and the evaluation of asset impairment are, by their nature, subjective. The Company considers quoted market prices in active markets to the extent they are available. In the absence of such information, NRG may consider prices of similar assets, consult with brokers, or employ other valuation techniques. The Company will also discount the estimated future cash flows associated with the asset using a single interest rate representative of the risk involved with such an investment or asset. The use of these methods involves the same inherent uncertainty of future cash flows as previously discussed with respect to undiscounted cash flows. Actual future market prices and project costs could vary from those used in NRG's estimates and the impact of such variations could be material.

During the second quarter of 2021, the results of the PJM Base Residual Auction for the 2022/2023 delivery year were released leading the Company to announce the near-term retirement of a significant portion of its PJM coal generating assets in June 2022. The Company considered the decline in PJM capacity prices and the near-term retirement dates of certain assets to be a trigger for impairment and performed impairment tests on the PJM generating assets and the goodwill associated with Midwest Generation. The Company measured the impairment losses on the PJM generation assets and Midwest Generation goodwill as the difference between the carrying amount and the fair value of the PJM generating assets and Midwest Generation reporting unit, respectively. Fair values were determined primarily using an income approach in which the Company applied a discounted cash flow methodology to the long-term budgets for the plants and reporting unit. Significant inputs impacting the income approach include the Company's long-term view of capacity and fuel prices, projected generation, the physical and economic characteristics of each plant, and the discount rate applied to the after-tax cash flow projections. Impairment losses of \$271 million and \$35 million were recorded in the East segment on the PJM generating assets and Midwest Generation goodwill, respectively.

Annually, during the fourth quarter, the Company revises its views of power and fuel prices including the Company's fundamental view for long-term prices, forecasted generation and operating and capital expenditures, in connection with the preparation of its annual budget. Changes to the Company's views of long-term power and fuel prices impact the Company's projections of profitability, based on management's estimate of supply and demand within the sub-markets for its operations and the physical and economic characteristics of each of its businesses.

In the fourth quarter of 2021, the Company recognized an impairment loss of \$213 million in the East segment as a result of changes in the long-term outlook of the Joliet facility prompted by market conditions and an assessment of various alternatives for the long-term operational landscape of the facility including the impact of the CEJA in Illinois, which concluded with the annual budget process. The Company recorded additional impairment losses of \$16 million and \$9 million related to various power plants in the East and West/Services/Other segments, respectively.

In the third quarter of 2020, the Company concluded its Home Solar business was held for sale as a result of advanced negotiations to sell the business and recorded an impairment loss of \$29 million in the West/Services/Other segment to adjust the carrying amount of the assets and liabilities to fair market value based on indicative sale prices. On November 13, 2020, the Company completed the sale of the Home Solar business for \$66 million.

In the fourth quarter of 2020, the Company recognized an impairment loss of \$32 million in the West/Services/Other segment related to the Cottonwood facility. The impairment was attributable to the Company's long-term services agreement and related lease payments, as the carrying amounts of the assets from the contract were higher than the estimated operating cash flow through the remaining lease period. Additionally, in the fourth quarter of 2020, the Company recorded \$14 million of impairment losses related to intangible assets in the Texas segment.

Equity Method Investments

The Company is also required to evaluate for impairment its equity method investments in accordance with ASC 323, *Investments - Equity Method and Joint Ventures*, or ASC 323. The standard for determining whether an impairment must be recorded under ASC 323 is whether an observed decline in the value of an equity method investment is considered other-than-temporary. The evaluation and measurement of impairments under ASC 323 involves the same uncertainties as described for long-lived assets that the Company owns directly and accounts for in accordance with ASC 360. Similarly, the estimates that the Company makes with respect to its equity method investments are subjective, and the impact of variations in these estimates could be material. Additionally, if the projects in which the Company holds these investments recognize an impairment under the provisions of ASC 360, the Company would record its proportionate share of that impairment loss and would evaluate its investment for an other-than-temporary decline in value under ASC 323. During the first quarter of 2020, NRG recorded an impairment loss of \$18 million in the Texas segment, attributable to its equity method investment in Petra Nova Parish Holdings, which included the anticipated drawdown of the \$12 million letter of credit posted in September 2019 to cover certain project debt reserve requirements.

Goodwill and Other Intangible Assets

At December 31, 2021, the Company reported goodwill of \$1.8 billion, consisting of \$1.3 billion from the acquisition of Direct Energy in 2021, \$130 million associated with the acquisition of Midwest Generation and \$414 million for retail operations acquisitions, including Stream Energy, which was acquired in 2019.

The Company applies ASC 805, *Business Combinations*, or ASC 805, and ASC 350, *Intangibles-Goodwill and Other*, or ASC 350 to account for its goodwill and intangible assets. Under these standards, the Company amortizes all finite-lived intangible assets over their respective estimated weighted-average useful lives, while goodwill has an indefinite life and is not amortized. Goodwill is tested for impairment at least annually, or more frequently whenever an event or change in circumstances occurs that would more likely than not reduce the fair value of a reporting unit below its carrying amount. The Company tests goodwill for impairment at the reporting unit level, which is identified by assessing whether the components of the Company's operating segments constitute businesses for which discrete financial information is available and whether segment management regularly reviews the operating results of those components. The Company performs the annual goodwill impairment assessment as of December 31 or when events or changes in circumstances indicate that the fair value of the reporting unit may be below the carrying amount. The Company first assesses qualitative factors to determine whether it is more likely than not that an impairment has occurred. In the absence of sufficient qualitative factors, the Company performs a quantitative assessment by determining the fair value of the reporting unit and comparing to its book value. If it is determined that the fair value of a reporting unit is below its carrying amount, the Company's goodwill will be impaired at that time.

During the second quarter of 2021, the results of the PJM Base Residual Auction for the 2022/2023 delivery year were released leading the Company to announce the near-term retirement of a significant portion of its PJM coal generating assets in June 2022. The Company considered the decline in PJM capacity prices and the near-term retirement dates of certain assets to be a trigger for impairment and performed impairment tests on the PJM generating assets and the goodwill associated with Midwest Generation. An impairment of \$35 million was recorded in Midwest Generation goodwill. For further discussion, see *Evaluation of Assets for Impairment and Other-Than-Temporary Decline in Value* caption above.

During the fourth quarter of 2021, the Company performed its qualitative assessment of macroeconomic, industry and market events and circumstances, and the overall financial performance of the Texas (Texas segment) and East Retail (East segment) reporting units. The Company determined it was more-likely-than not that the fair value of the goodwill attributed to these reporting units were more than their carrying amount and accordingly, no impairment existed for the year ended December 31, 2021.

During the fourth quarter of 2021, the Company also performed a quantitative assessment for the Midwest Generation (East segment) and West/Services/Other reporting units. The Company determined the fair value of the reporting units using an income approach. Based on the income approach, the Company estimated the fair value of each reporting units' cash flows exceeded its carrying value and, as such, NRG concluded that the goodwill associated with each reporting unit was not impaired as of December 31, 2021.

The Company believes the methodology and assumptions used in its quantitative assessments were consistent with the views of market participants. Significant inputs to the determinations of fair value of the Midwest Generation reporting unit were as follows:

- The Company applied a discounted cash flow methodology to the long-term budgets for the Midwest Generation plants, resulting in fair value over the carrying value of the reporting unit of 117%. The significant assumptions used to derive the long-term budgets used in the income approach are affected by the following key inputs:
 - The Company's views of power, capacity and fuel prices consider market prices for the next five years and the Company's fundamental view for the longer term, driven by the Company's long-term view of the price of natural gas. The Company's fundamental view for the longer term reflects the implied prices and heat rate that would support new build of a combined cycle gas plant. The price of natural gas plays an important role in setting the price of electricity in many of the regions where NRG operates power plants. Hedging is included to the extent of contracts already in place;
 - The Company's estimate of generation, fuel costs, capital expenditure requirements and the existing and anticipated impact of environmental regulations;
 - The Company's fundamental view for the longer term, cash flows for the plants in the region were included in the fair value calculation through the end of each plants' estimated useful life; and
 - Projected generation and resulting energy gross margin in the long-term budgets is based on an hourly dispatch that simulates dispatch of each unit into the power market. The dispatch simulation is based on power prices, fuel prices, and the physical and economic characteristics of each plant.

Fair value determinations require considerable judgment and are sensitive to changes in underlying assumptions and factors. As a result, there can be no assurance that the estimates and assumptions made for purposes of the annual goodwill impairment test will prove to be accurate predictions of the future.

Business Combinations

We account for business acquisitions using the acquisition method of accounting prescribed under ASC 805. Under this method, we are required to record on our Consolidated Balance Sheets the estimated fair values of the acquired company's assets and liabilities assumed at the acquisition date. The excess of the consideration transferred over the fair value of the net identifiable assets acquired and liabilities assumed is recorded as goodwill. Determining fair values of assets acquired and liabilities assumed requires significant estimates and judgments. We determine fair value based on the estimated price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The acquired assets and assumed liabilities that involved the most subjectivity in determining fair value consisted of the trade names, customer relationships and derivative contracts.

The fair value of trade names and customer relationships was measured using income-based valuation methodologies, which include certain assumptions such as forecasted future cash flows, customer attrition rates, royalty rates and discount rates. The trade names are amortized to depreciation and amortization, on a straight line basis. The customer relationships are amortized to depreciation and amortization, ratably based on discounted future cash flows.

In measuring the fair value of derivative contracts, a significant portion of the fair value of the derivative portfolio was based on price quotes from brokers in active markets who regularly facilitate those transactions and the Company believes such price quotes are executable. The Company does not use third party sources that derive price based on proprietary models or market surveys. The remainder of the assets and liabilities represents contracts for which external sources or observable market quotes are not available. These contracts were valued based on various valuation techniques including but not limited to internal models based on a fundamental analysis of the market and extrapolation of observable market data with similar characteristics. The fair value of each contract was discounted using a risk free interest rate. In addition, the Company applied a credit reserve to reflect credit risk. NRG describes in detail its acquisitions in Item 15 — Note 4, *Acquisitions, Discontinued Operations and Dispositions*, to the Consolidated Financial Statements

Contingencies

NRG records reserves for estimated losses from contingencies when information available indicates that a loss is probable and the amount of the loss, or range of loss, can be reasonably estimated. Gain contingencies are not recorded until management determines it is certain that the future event will become or does become a reality. Such determinations are subject to interpretations of current facts and circumstances, forecasts of future events, and estimates of the financial impacts of such events. NRG describes in detail its contingencies in Item 15 — Note 23, *Commitments and Contingencies*, to the Consolidated Financial Statements.

Recent Accounting Developments

See Item 15 — Note 2, *Summary of Significant Accounting Policies*, to the Consolidated Financial Statements for a discussion of recent accounting developments.

Item 7A — Quantitative and Qualitative Disclosures About Market Risk

NRG is exposed to several market risks in the Company's normal business activities. Market risk is the potential loss that may result from market changes associated with the Company's retail operations, merchant power generation, or with an existing or forecasted financial or commodity transactions. The types of market risks the Company is exposed to are commodity price risk, interest rate risk, liquidity risk, credit risk and currency exchange risk. In order to manage these risks, the Company uses various fixed-price forward purchase and sales contracts, futures and option contracts traded on NYMEX and other exchanges, and swaps and options traded in the over-the-counter financial markets to:

- Manage and hedge fixed-price purchase and sales commitments;
- Reduce exposure to the volatility of cash market prices, and
- Hedge fuel requirements for the Company's generating facilities.

Commodity Price Risk

Commodity price risks result from exposures to changes in spot prices, forward prices, volatilities, and correlations between various commodities, such as natural gas, electricity, coal, oil, and emissions credits. NRG manages the commodity price risk of the Company's load servicing obligations and merchant generation operations by entering into various derivative or non-derivative instruments to hedge the variability in future cash flows from forecasted sales and purchases of electricity and fuel. NRG measures the risk of the Company's portfolio using several analytical methods, including sensitivity tests, scenario tests, stress tests, position reports and VaR. NRG uses a Monte Carlo simulation based VaR model to estimate the potential loss in the fair value of its energy assets and liabilities, which includes generation assets, gas transportation and storage assets, load obligations and bilateral physical and financial transactions, based on historical and forward values for factors such as customer demand, weather, commodity availability and commodity prices. The Company's VaR model is based on a one-day holding period at a 95% confidence interval for the forward 36 months, not including the spot month. The VaR model is not a complete picture of all risks that may affect the Company's results. Certain events such as counterparty defaults, regulatory changes, and extreme weather and prices that deviate significantly from historically observed values are not reflected in the model.

The following table summarizes average, maximum and minimum VaR for NRG's commodity portfolio, calculated using the VaR model for the years ended December 31, 2021 and 2020:

(In millions)	2021	2020
VaR as of December 31, ^(a)	\$ 30	\$ 30
For the year ended December 31,		
Average ^(b)	\$ 35	\$ 30
Maximum ^(b)	53	47
Minimum ^(b)	23	22

(a) Calculation includes entire NRG portfolio as of December 31, 2021

(b) Calculation is based on NRG generation assets and load obligations excluding the acquisition of Direct Energy assets and load obligations in the first quarter of 2021

In order to provide additional information, the Company also uses VaR to estimate the potential loss of derivative financial instruments that are subject to mark-to-market accounting. These derivative instruments include transactions that were entered into for both asset management and trading purposes. The VaR for the derivative financial instruments calculated using the diversified VaR model for the entire term of these instruments entered into for both asset management and trading was \$242 million as of December 31, 2021, primarily driven by asset-backed transactions. The increase in the VaR for derivative financial instruments was primarily due to the acquisition of Direct Energy.

Retail Customer Credit Risk

NRG is exposed to retail credit risk related to its Business and Home customers. Retail credit risk results in losses when a customer fails to pay for services rendered. The losses may result from both nonpayment of customer accounts receivable and the loss of in-the-money forward value. NRG manages retail credit risk through the use of established credit policies that include monitoring of the portfolio and the use of credit mitigation measures, such as deposits or prepayment arrangements.

As of December 31, 2021, the Company's retail customer credit exposure to Home and Business customers was diversified across many customers and various industries, as well as government entities. The Company's provision for credit losses resulting from credit risk was \$698 million, \$108 million and \$95 million for the years ending December 31, 2021, 2020 and 2019, respectively. As a result of Winter Storm Uri, the Company incurred additional credit losses from Business customers primarily due to a segment of customers whose contracts included a pass through of wholesale power prices which were significantly escalated during the storm and from customers who failed to meet their obligations in ERCOT load curtailment programs.

Liquidity Risk

Liquidity risk arises from the general funding needs of the Company's activities and the management of the Company's assets and liabilities. The Company is currently exposed to additional collateral posting if natural gas prices decline, primarily due to the long natural gas equivalent position at various exchanges used to hedge NRG's retail supply load obligations.

Based on a sensitivity analysis for power and gas positions under marginable contracts as of December 31, 2021, a \$0.50 per MMBtu decrease in natural gas prices across the term of the marginable contracts would cause an increase in margin collateral posted of approximately \$828 million and a 1.00 MMBtu/MWh decrease in heat rates for heat rate positions would result in an increase in margin collateral posted of approximately \$378 million. This analysis uses simplified assumptions and is calculated based on portfolio composition and margin-related contract provisions as of December 31, 2021.

Counterparty Credit Risk

Credit risk relates to the risk of loss resulting from non-performance or non-payment by counterparties pursuant to the terms of their contractual obligations. The Company monitors and manages credit risk through credit policies that include: (i) an established credit approval process; (ii) a daily monitoring of counterparties' credit limits; (iii) the use of credit mitigation measures such as margin, collateral, prepayment arrangements, or volumetric limits; (iv) the use of payment netting agreements; and (v) the use of master netting agreements that allow for the netting of positive and negative exposures of various contracts associated with a single counterparty. Risks surrounding counterparty performance and credit could ultimately impact the amount and timing of expected cash flows. The Company seeks to mitigate counterparty risk by having a diversified portfolio of counterparties. The Company also has credit protection within various agreements to call on additional collateral support if and when necessary. Cash margin is collected and held at the Company to cover the credit risk of the counterparty until positions settle.

As of December 31, 2021, counterparty credit exposure, excluding credit exposure from RTOs, ISOs, and registered commodity exchanges and certain long-term agreements, was \$2.2 billion, of which the Company held collateral (cash and letters of credit) against those positions of \$598 million resulting in a net exposure of \$1.6 billion. NRG periodically receives collateral from counterparties in excess of their exposure. Collateral amounts shown include such excess while net exposure shown excludes excess collateral received. Approximately 87% of the Company's exposure before collateral is expected to roll off by the end of 2023. The following table highlights the net counterparty credit exposure by industry sector and by counterparty credit quality. Net counterparty credit exposure is defined as the aggregate net asset position for NRG with counterparties where netting is permitted under the enabling agreement and includes all cash flow, mark-to-market, NPNS, and non-derivative transactions. As of December 31, 2021, the aggregate credit exposure is shown net of collateral held, and includes amounts net of receivables or payables.

Category	Net Exposure ^{(a) (b)} (% of Total)
Utilities, energy merchants, marketers and other	67 %
Financial institutions	33
Total	100 %

Category	Net Exposure ^{(a) (b)} (% of Total)
Investment grade	55 %
Non-Investment grade/Non-Rated	45
Total	100 %

(a) Counterparty credit exposure excludes uranium and coal transportation contracts because of the unavailability of market prices

(b) The figures in the tables above exclude potential counterparty credit exposure related to RTOs, ISOs, registered commodity exchanges and certain long-term contracts

The Company has no exposure to wholesale counterparties in excess of 10% of the total net exposure discussed above as of December 31, 2021. Changes in hedge positions and market prices will affect credit exposure and counterparty concentration.

During Winter Storm Uri, the Company experienced nonperformance by a counterparty in one of its bilateral financial hedging transactions, resulting in exposure of \$403 million. The Company is pursuing all means available to enforce its rights under this transaction but, given the size of the exposure, cannot determine with certainty what the amount of its ultimate recovery will be. The full exposure was recorded as a provision for credit losses during the year ended December 31, 2021.

RTOs and ISOs

The Company participates in the organized markets of CAISO, ERCOT, ISO-NE, MISO, NYISO and PJM, known as RTOs or ISOs. Trading in these markets is approved by FERC, or in the case of ERCOT, approved by the PUCT and include credit policies that, under certain circumstances, require that losses arising from the default of one member on spot market transactions be shared by the remaining participants. As a result, the counterparty credit risk to these markets is limited to NRG's applicable share of the overall market and are excluded from the above exposures.

Exchange Traded Transactions

The Company enters into commodity transactions on registered exchanges, notably ICE, NYMEX and Nodal. These clearinghouses act as the counterparty and transactions are subject to extensive collateral and margining requirements. As a result, these commodity transactions have limited counterparty credit risk.

Long-Term Contracts

Counterparty credit exposure described above excludes credit risk exposure under certain long-term contracts, primarily solar PPAs. As external sources or observable market quotes are not available to estimate such exposure, the Company values these contracts based on various techniques including, but not limited to, internal models based on a fundamental analysis of the market and extrapolation of observable market data with similar characteristics. Based on these valuation techniques, as of December 31, 2021, aggregate credit risk exposure managed by NRG to these counterparties was approximately \$1.1 billion for the next five years.

Interest Rate Risk

As of December 31, 2021, the Company's debt fair value was \$8.3 billion and carrying value was \$8.0 billion. NRG estimates that a 1% decrease in market interest rates would have increased the fair value of the Company's long-term debt by \$690 million.

Credit Risk Related Contingent Features

Certain of the Company's hedging and trading agreements contain provisions that entitle the counterparty to demand that the Company post additional collateral if the counterparty determines that there has been deterioration in the Company's credit quality, generally termed "adequate assurance" under the agreements, or require the Company to post additional collateral if there were a downgrade in the Company's credit rating. In addition, as a result of the acquisition of Direct Energy from Centrica, certain of the Company's agreements as of December 31, 2021, were still supported by credit support posted by Centrica, and as a result could require the Company to post collateral upon a deterioration or downgrade of Centrica. The collateral potentially required for contracts with adequate assurance clauses that are in a net liability position as of December 31, 2021, was \$1.0 billion. The Company is also a party to certain marginable agreements under which it has a net liability position, but the counterparty has not called for the collateral due, which was approximately \$70 million as of December 31, 2021. In the event of a downgrade in the Company's credit rating and if called for by the counterparty, \$1 million of additional collateral would be required for all contracts with credit rating contingent features as of December 31, 2021.

Currency Exchange Risk

NRG is subject to transactional exchange rate risk from transactions with customers in countries outside of the United States, primarily within Canada, as well as from intercompany transactions between affiliates. Transactional exchange rate risk arises from the purchase and sale of goods and services in currencies other than our functional currency or the functional currency of an applicable subsidiary. NRG hedges a portion of its forecasted currency transactions with foreign exchange forward contracts. As of December 31, 2021, NRG is exposed to changes in foreign currency primarily associated with the purchase of U.S. dollar denominated natural gas for its Canadian business and entered into foreign exchange contracts with notional amount of \$279 million.

The Company is subject to translation exchange rate risk related to the translation of the financial statements of its foreign operations into U.S. dollars. Costs incurred and sales recorded by subsidiaries operating outside of the United States are translated into U.S. dollars using exchange rates effective during the respective period. As a result, the Company is exposed to movements in the exchange rates of various currencies against the U.S. dollar, primarily the Canadian and Australian dollars. A hypothetical 10% appreciation in major currencies relative to the U.S. dollar as of December 31, 2021 would have resulted in an increase of \$10 million to net income within the Consolidated Statement of Operations.

Item 8 — Financial Statements and Supplementary Data

The financial statements and schedules are included in Part IV, Item 15 of this Form 10-K.

Item 9 — Changes in and Disagreements With Accountants on Accounting and Financial Disclosure

None.

Item 9A — Controls and Procedures

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures and Internal Control Over Financial Reporting

Under the supervision and with the participation of NRG's management, including its principal executive officer, principal financial officer and principal accounting officer, NRG conducted an evaluation of the effectiveness of the design and operation of its disclosure controls and procedures, as such term is defined in Rules 13a-15(e) or 15d-15(e) of the Exchange Act. Based on this evaluation, the Company's principal executive officer, principal financial officer and principal accounting officer concluded that the disclosure controls and procedures were effective as of the end of the period covered by this Annual Report on Form 10-K. Management's report on the Company's internal control over financial reporting and the report of the Company's independent registered public accounting firm are incorporated under the caption "Management's Report on Internal Control over Financial Reporting" and under the caption "Report of Independent Registered Public Accounting Firm" in this Annual Report on Form 10-K for the fiscal year ended December 31, 2021.

Changes in Internal Control over Financial Reporting

During the year ended December 31, 2021, the Company completed its acquisition of Direct Energy. In the first quarter of 2022, the Company integrated a significant component of Direct Energy's accounting systems into NRG's legacy ERP system. As part of this integration, the Company has completed the evaluation of our internal controls related to Direct Energy, and designed and implemented a control structure over Direct Energy's operations. Other than the Direct Energy acquisition, there were no changes in NRG's internal control over financial reporting (as such term is defined in Rule 13a-15(f) under the Exchange Act) that occurred in the fourth quarter of 2021 that materially affected, or are reasonably likely to materially affect, NRG's internal control over financial reporting.

Inherent Limitations over Internal Controls

NRG's internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with GAAP. The Company's internal control over financial reporting includes those policies and procedures that:

1. Pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the Company's assets;
2. Provide reasonable assurance that transactions are recorded as necessary to permit preparation of consolidated financial statements in accordance with GAAP, and that the Company's receipts and expenditures are being made only in accordance with authorizations of its management and directors; and
3. Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on the consolidated financial statements.

Internal control over financial reporting cannot provide absolute assurance of achieving financial reporting objectives because of its inherent limitations, including the possibility of human error and circumvention by collusion or overriding of controls. Accordingly, even an effective internal control system may not prevent or detect material misstatements on a timely basis. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions or that the degree of compliance with the policies or procedures may deteriorate.

Management's Report on Internal Control over Financial Reporting

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Under the supervision and with the participation of the Company's management, including its principal executive officer, principal financial officer and principal accounting officer, the Company conducted an evaluation of the effectiveness of its internal control over financial reporting based on the framework in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on the Company's evaluation under the framework in *Internal Control — Integrated Framework (2013)*, the Company's management concluded that its internal control over financial reporting was effective as of December 31, 2021.

On January 5, 2021, NRG acquired Direct Energy, as further described in Note 4, *Acquisitions, Discontinued Operations and Dispositions*. Direct Energy comprised of approximately 35% of the Company's total assets as of December 31, 2021 and approximately 58% of the Company's total revenues for the year ended December 31, 2021. As of December 31, 2021, we are in the process of evaluating the internal controls of the acquired business and integrated it into our existing operations. The acquired business has, therefore, been excluded from management's assessment of internal control over financial reporting for the year ended December 31, 2021.

The effectiveness of the Company's internal control over financial reporting as of December 31, 2021 has been audited by KPMG LLP, the Company's independent registered public accounting firm, as stated in its report which is included in this Annual Report on Form 10-K.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders
NRG Energy, Inc.:

Opinion on Internal Control Over Financial Reporting

We have audited NRG Energy, Inc. and subsidiaries' (the Company) internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2021 and 2020, the related consolidated statements of operations, comprehensive income, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2021, and the related notes and financial statement schedule II (collectively, the consolidated financial statements), and our report dated February 24, 2022 expressed an unqualified opinion on those consolidated financial statements.

The Company acquired Direct Energy during 2021 and management excluded from its assessment of the effectiveness of the Company's internal control over financial reporting as of December 31, 2021. Direct Energy's internal control over financial reporting are associated with 35% of total assets and 58% of total revenues included in the consolidated financial statements of the Company as of and for the year ended December 31, 2021. Our audit of internal control over financial reporting of the Company also excluded an evaluation of the internal control over financial reporting of Direct Energy.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed 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. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KPMG LLP

Philadelphia, Pennsylvania
February 24, 2022

Item 9B — Other Information

Entry into a Material Definitive Agreement.

On February 22, 2022, the Company entered into a Supplemental Indenture (the “Supplemental Indenture”), by and among the Company, the guarantors named therein (the “Guarantors”) and Delaware Trust Company, as trustee and conversion agent (the “Trustee”), to supplement the Indenture, dated as of May 24, 2018 (the “Indenture”), among the Company, the Guarantors and the Trustee, governing the Convertible Senior Notes. Pursuant to the Supplemental Indenture, the Company has irrevocably (i) eliminated the right of the Company to elect Physical Settlement (as defined in the Indenture) as the Settlement Method (as defined in the Indenture) on any conversion of Convertible Senior Notes that occurs on or after the date of the Supplemental Indenture and (ii) elected that, with respect to any Combination Settlement (as defined in the Indenture), the Specified Dollar Amount (as defined in the Indenture) per \$1,000 principal amount of the Convertible Senior Notes shall be no lower than \$1,000.

The foregoing description of the Supplemental Indenture does not purport to be complete and is qualified in its entirety by reference to the full text of the Supplemental Indenture, a copy of which is filed as Exhibit 4.52 to this report and is incorporated herein by reference.

Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers.

Effective February 24, 2022, Emily C. Picarello, CPA, was named as Principal Accounting Officer of NRG Energy, Inc. Ms. Picarello, age 41, joined the Company in December 2018 and served as Assistant Controller for the Company through November 2021, when she was promoted to Vice President and Corporate Controller. Ms. Picarello will continue in this role reporting to Alberto Fornaro, NRG's Executive Vice President and Chief Financial Officer.

Prior to her employment with the Company, Ms. Picarello spent over seven years with PVH Corp., one of the largest global apparel companies in the world, first as the Director of Financial Reporting and then as the Vice President, Financial Reporting. Prior to Ms. Picarello's time with PVH Corp., she was an auditor with KPMG LLP for over eight years, holding various positions including Audit Senior Manager.

Item 9C— Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

PART III

Item 10 — Directors, Executive Officers and Corporate Governance

Directors and Executive Officers

Information required by this Item is incorporated by reference to the similarly named section of NRG's Definitive Proxy Statement for its 2022 Annual Meeting of Stockholders.

Code of Ethics

NRG has adopted a code of ethics entitled "NRG Code of Conduct" that applies to directors, officers and employees, including the chief executive officer and senior financial officers of NRG. It may be accessed through the "Governance" section of the Company's website at www.nrg.com. NRG also elects to disclose the information required by Form 8-K, Item 5.05, "Amendments to the Registrant's Code of Ethics, or Waiver of a Provision of the Code of Ethics," through the Company's website, and such information will remain available on this website for at least a 12-month period. A copy of the "NRG Code of Conduct" is available in print to any stockholder who requests it.

Other information required by this Item is incorporated by reference to the similarly named section of NRG's Definitive Proxy Statement for its 2022 Annual Meeting of Stockholders.

Item 11 — Executive Compensation

Information required by this Item is incorporated by reference to the similarly named section of NRG's Definitive Proxy Statement for its 2022 Annual Meeting of Stockholders.

Item 12 — Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Securities Authorized for Issuance under Equity Compensation Plans

Plan Category	(a) Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights	(b) Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights	(c) Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column (a))
Equity compensation plans approved by security holders	2,514,828 (1) \$	—	11,508,073
Equity compensation plans not approved by security holders	20,131 (2)	20.07	— (4)
Total	2,534,959	\$ 20.07	11,508,073 (3)

(1) Consists of shares issuable under the NRG LTIP and the ESPP. The NRG LTIP became effective upon the Company's emergence from bankruptcy. On April 27, 2017, the NRG LTIP was amended and restated to increase the number of shares available for issuance to 25,000,000. The ESPP, as amended and restated, was approved by the Company's stockholders on April 27, 2017, and became effective April 28, 2017. As of December 31, 2021, there were 2,636,199 shares reserved from the Company's treasury shares for the ESPP.

(2) Consists of shares issuable under the NRG GenOn LTIP. The plans is listed as "not approved" because it was not subject to separate line item approval by NRG's stockholders when the Merger was approved. See Item 15 — Note 21, *Stock-Based Compensation*, to Consolidated Financial Statements for a discussion of the NRG GenOn LTIP.

(3) Consists of 8,871,874 shares of common stock under NRG's LTIP and 2,636,199 shares of treasury stock reserved for issuance under the ESPP.

(4) Upon adoption of the NRG Amended and Restated LTIP effective April 27, 2017, no securities remain available for future issuance under the NRG GenOn LTIP. For further discussion, see Note 21, *Stock-Based Compensation*.

NRG LTIP currently provides for grants of restricted stock units, relative performance stock units, deferred stock units and dividend equivalent rights. NRG's directors, officers and employees, as well as other individuals performing services for, or to whom an offer of employment has been extended by the Company, are eligible to receive grants under the NRG LTIP. The purpose of the NRG LTIP is to promote the Company's long-term growth and profitability by providing these individuals with incentives to maximize stockholder value and otherwise contribute to the Company's success and to enable the Company to attract, retain and reward the best available persons for positions of responsibility. The Compensation Committee of the Board of Directors administers the NRG LTIP.

Other information required by this Item is incorporated by reference to the similarly named section of NRG's Definitive Proxy Statement for its 2022 Annual Meeting of Stockholders.

Item 13 — Certain Relationships and Related Transactions, and Director Independence

Information required by this Item is incorporated by reference to the similarly named section of NRG's Definitive Proxy Statement for its 2022 Annual Meeting of Stockholders.

Item 14 — Principal Accounting Fees and Services

Information required by this Item is incorporated by reference to the similarly named section of NRG's Definitive Proxy Statement for its 2022 Annual Meeting of Stockholders.

PART IV

Item 15 — Exhibits, Financial Statement Schedules

(a)(1) Financial Statements

The following consolidated financial statements of NRG Energy, Inc. and related notes thereto, together with the reports thereon of KPMG LLP, Philadelphia, PA, Auditor Firm ID: 185, are included herein:

Consolidated Statements of Operations — Years ended December 31, 2021, 2020, and 2019

Consolidated Statements of Comprehensive Income — Years ended December 31, 2021, 2020, and 2019

Consolidated Balance Sheets — As of December 31, 2021 and 2020

Consolidated Statements of Cash Flows — Years ended December 31, 2021, 2020, and 2019

Consolidated Statements of Stockholders' Equity — Years ended December 31, 2021, 2020, and 2019

Notes to Consolidated Financial Statements

(a)(2) Financial Statement Schedule

The following Consolidated Financial Statement Schedule of NRG Energy, Inc. is filed as part of Item 15 of this report and should be read in conjunction with the Consolidated Financial Statements.

Schedule II — Valuation and Qualifying Accounts

All other schedules for which provision is made in the applicable accounting regulation of the Securities and Exchange Commission are not required under the related instructions or are inapplicable, and therefore, have been omitted.

(a)(3) Exhibits: See Exhibit Index submitted as a separate section of this report.

(b) Exhibits

See Exhibit Index submitted as a separate section of this report.

(c) Not applicable

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders
NRG Energy, Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of NRG Energy, Inc. and subsidiaries (the Company) as of December 31, 2021 and 2020, the related consolidated statements of operations, comprehensive income, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2021, and the related notes and financial statement schedule II (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2021, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 24, 2022 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Evaluation of the sufficiency of audit evidence over operating revenues

As discussed in Note 3 to the consolidated financial statements, the Company had \$26.989 billion of operating revenues. Operating revenue is derived from various revenue streams in different geographic markets and the Company's processes and related information technology (IT) systems used to record revenue differ for each of these revenue streams.

We identified the evaluation of the sufficiency of audit evidence over operating revenues as a critical audit matter which required a high degree of auditor judgment due to the number of revenue streams and IT systems involved in the revenue recognition process. This included determining the revenue streams over which procedures were to be performed and evaluating the nature and extent of evidence obtained over the individual revenue streams as well as operating revenue in the aggregate. It also included the involvement of IT professionals with specialized skills and knowledge to assist in the performance of certain procedures.

The following are the primary procedures we performed to address this critical audit matter. We, with the assistance of IT professionals, applied auditor judgment to determine the revenue streams over which procedures were performed as well as the nature and extent of such procedures. For certain revenue streams, we evaluated the design and tested the operating effectiveness of certain internal controls over the Company's revenue recognition processes. For certain revenue streams, we involved IT professionals, who assisted in testing certain IT applications used by the Company in its revenue recognition processes. In addition, we assessed recorded revenue for a selection of transactions by comparing the amounts recognized to underlying documentation, including contracts with customers. In addition, we evaluated the sufficiency of audit evidence obtained over operating revenues by assessing the results of procedures performed, including the appropriateness of such evidence.

Fair value of customer relationship intangible assets

As discussed in Note 4 to the consolidated financial statements, the Company acquired Direct Energy on January 5, 2021 for consideration of \$3.724 billion. The Company recorded the identifiable assets acquired and liabilities assumed at fair value at the acquisition date, including \$1.277 billion of customer relationship intangible assets which represent the generation of future income reflective of Direct Energy's customer base. Customer relationship intangible assets were valued using the excess earnings method of the income approach.

We identified the evaluation of the fair value of customer relationship intangible assets acquired in the Direct Energy transaction as a critical audit matter. A higher degree of auditor judgment was required to evaluate the customer attrition used in the excess earnings method. Changes in the customer attrition could have a significant impact on the forecasted future cash flows used in the excess earnings method and the resulting fair value of the customer relationship intangible assets.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls related to the Company's acquisition-date valuation process, including controls over the development of the customer attrition. We performed sensitivity analyses over the Company's customer attrition used to determine the estimated fair value of the customer relationship intangible assets to assess the effect of changes in that assumption on the Company's determination of fair value. We evaluated the customer attrition by comparing it to the Company's actual customer attrition.

/s/ KPMG LLP

We have served as the Company's auditor since 2004.

Philadelphia, Pennsylvania
February 24, 2022

NRG ENERGY, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS

(In millions, except per share amounts)	For the Year Ended December 31,		
	2021	2020	2019
Operating Revenues			
Total operating revenues	\$ 26,989	\$ 9,093	\$ 9,821
Operating Costs and Expenses			
Cost of operations (excluding depreciation and amortization shown below)	20,482	6,540	7,303
Depreciation and amortization	785	435	373
Impairment losses	544	75	5
Selling, general and administrative costs	1,293	810	760
Provision for credit losses	698	108	95
Acquisition-related transaction and integration costs	93	23	2
Total operating costs and expenses	23,895	7,991	8,538
Gain on sale of assets	247	3	7
Operating Income	3,341	1,105	1,290
Other Income/(Expense)			
Equity in earnings of unconsolidated affiliates	17	17	2
Impairment losses on investments	—	(18)	(108)
Other income, net	63	67	66
Loss on debt extinguishment	(77)	(9)	(51)
Interest expense	(485)	(401)	(413)
Total other expense	(482)	(344)	(504)
Income from Continuing Operations Before Income Taxes	2,859	761	786
Income tax expense/(benefit)	672	251	(3,334)
Income from Continuing Operations	2,187	510	4,120
Income from discontinued operations, net of income tax	—	—	321
Net Income	2,187	510	4,441
Less: Net income attributable to redeemable noncontrolling interest	—	—	3
Net Income Attributable to NRG Energy, Inc.	\$ 2,187	\$ 510	\$ 4,438
Income Per Share Attributable to NRG Energy, Inc. Common Stockholders			
Weighted average number of common shares outstanding — basic	245	245	262
Income from continuing operations per weighted average common share — basic	\$ 8.93	\$ 2.08	\$ 15.71
Income from discontinued operations per weighted average common share — basic	\$ —	\$ —	\$ 1.23
Net Income per Weighted Average Common Share — Basic	\$ 8.93	\$ 2.08	\$ 16.94
Weighted average number of common shares outstanding — diluted	245	246	264
Income from continuing operations per weighted average common share — diluted	\$ 8.93	\$ 2.07	\$ 15.59
Income from discontinued operations per weighted average common share — diluted	\$ —	\$ —	\$ 1.22
Net Income per Weighted Average Common Share — Diluted	\$ 8.93	\$ 2.07	\$ 16.81

See notes to Consolidated Financial Statements

NRG ENERGY, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(In millions)	For the Year Ended December 31,		
	2021	2020	2019
Net Income	\$ 2,187	\$ 510	\$ 4,441
Other Comprehensive Income/(Loss), net of tax			
Foreign currency translation adjustments, net of income tax	(5)	8	(1)
Available-for-sale securities, net of income tax	—	—	(19)
Defined benefit plans, net of income tax	85	(22)	(78)
Other comprehensive income/(loss)	80	(14)	(98)
Comprehensive Income	2,267	496	4,343
Less: Net income attributable to redeemable noncontrolling interest	—	—	3
Comprehensive Income Attributable to NRG Energy, Inc.	\$ 2,267	\$ 496	\$ 4,340

See notes to Consolidated Financial Statements

NRG ENERGY, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

(In millions)	As of December 31,	
	2021	2020
ASSETS		
Current Assets		
Cash and cash equivalents	\$ 250	\$ 3,905
Funds deposited by counterparties	845	19
Restricted cash	15	6
Accounts receivable, net	3,245	904
Uplift securitization proceeds receivable from ERCOT	689	—
Inventory	498	327
Derivative instruments	4,613	560
Cash collateral paid in support of energy risk management activities	291	50
Prepayments and other current assets	395	257
Total current assets	10,841	6,028
Property, plant and equipment, net	1,688	2,547
Other Assets		
Equity investments in affiliates	157	346
Operating lease right-of-use assets, net	271	301
Goodwill	1,795	579
Intangible assets, net	2,511	668
Nuclear decommissioning trust fund	1,008	890
Derivative instruments	2,527	261
Deferred income taxes	2,155	3,066
Other non-current assets	229	216
Total other assets	10,653	6,327
Total Assets	\$ 23,182	\$ 14,902

See notes to Consolidated Financial Statements

NRG ENERGY, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS (Continued)

(In millions, except share data)	As of December 31,	
	2021	2020
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current Liabilities		
Current portion of long-term debt and finance leases	\$ 4	\$ 1
Current portion of operating lease liabilities	81	69
Accounts payable	2,274	649
Derivative instruments	3,387	499
Cash collateral received in support of energy risk management activities	845	19
Accrued expenses and other current liabilities	1,324	678
Total current liabilities	7,915	1,915
Other Liabilities		
Long-term debt and finance leases	7,966	8,691
Non-current operating lease liabilities	236	278
Nuclear decommissioning reserve	321	303
Nuclear decommissioning trust liability	666	565
Derivative instruments	1,412	385
Deferred income taxes	73	19
Other non-current liabilities	993	1,066
Total other liabilities	11,667	11,307
Total Liabilities	19,582	13,222
Commitments and Contingencies		
Stockholders' Equity		
Common stock; \$0.01 par value; 500,000,000 shares authorized; 423,547,174 and 423,057,848 shares issued; and 243,753,899 and 244,231,933 shares outstanding at December 31, 2021 and 2020, respectively	4	4
Additional paid-in capital	8,531	8,517
Retained earnings/(accumulated deficit)	464	(1,403)
Treasury stock, at cost; 179,793,275 and 178,825,915 shares at December 31, 2021 and 2020, respectively	(5,273)	(5,232)
Accumulated other comprehensive loss	(126)	(206)
Total Stockholders' Equity	3,600	1,680
Total Liabilities and Stockholders' Equity	\$ 23,182	\$ 14,902

See notes to Consolidated Financial Statements

NRG ENERGY, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

(In millions)	For the Year Ended December 31,		
	2021	2020	2019
Cash Flows from Operating Activities			
Net income	\$ 2,187	\$ 510	\$ 4,441
Income from discontinued operations, net of income tax	—	—	321
Income from continuing operations	2,187	510	4,120
Adjustments to reconcile net income to net cash provided by operating activities:			
Distributions from and equity in earnings of unconsolidated affiliates	20	45	14
Depreciation and amortization	785	435	373
Accretion of asset retirement obligations	30	45	51
Provision for credit losses	698	108	95
Amortization of nuclear fuel	51	54	52
Amortization of financing costs and debt discounts	39	48	26
Loss on debt extinguishment	77	9	51
Amortization of in-the-money contracts and emission allowances	106	70	72
Amortization of unearned equity compensation	21	22	20
Net gain on sale of assets and disposal of assets	(261)	(23)	(23)
Impairment losses	544	93	113
Changes in derivative instruments	(3,626)	137	34
Changes in deferred income taxes and liability for uncertain tax benefits	604	228	(3,353)
Changes in collateral deposits in support of risk management activities	797	127	105
Changes in nuclear decommissioning trust liability	40	51	37
Oil lower of cost or market adjustment	—	29	—
Uplift securitization proceeds receivable from ERCOT	(689)	—	—
Cash (used)/provided by changes in other working capital, net of acquisition and disposition effects:			
Accounts receivable - trade	(1,232)	—	5
Inventory	(61)	27	22
Prepayments and other current assets	31	4	29
Accounts payable	476	(56)	(177)
Accrued expenses and other current liabilities	(55)	(42)	(75)
Other assets and liabilities	(89)	(84)	(186)
Cash provided by continuing operations	493	1,837	1,405
Cash provided by discontinued operations	—	—	8
Net Cash Provided by Operating Activities	\$ 493	\$ 1,837	\$ 1,413
Cash Flows from Investing Activities			
Payments for acquisitions of assets, businesses and leases	\$ (3,559)	\$ (284)	\$ (355)
Capital expenditures	(269)	(230)	(228)
Net (purchases)/sales of emissions allowances	—	(10)	11
Investments in nuclear decommissioning trust fund securities	(751)	(492)	(416)
Proceeds from sales of nuclear decommissioning trust fund securities	710	439	381
Proceeds from sale of assets, net of cash disposed and sale of discontinued operations, net of fees	830	81	1,294
Changes in investments in unconsolidated affiliates	—	2	(91)
Net contributions to discontinued operations	—	—	(44)
Other	—	—	6
Cash (used)/provided by continuing operations	(3,039)	(494)	558
Cash used by discontinued operations	—	—	(2)
Net Cash (Used)/Provided by Investing Activities	\$ (3,039)	\$ (494)	\$ 556

(In millions)	For the Year Ended December 31,		
	2021	2020	2019
Cash Flows from Financing Activities			
Proceeds from issuance of long-term debt	\$ 1,100	\$ 3,234	\$ 1,833
Payments for short and long-term debt	(1,861)	(335)	(2,571)
Payments of dividends to common stockholders	(319)	(295)	(32)
Net receipts/(payments) from settlement of acquired derivatives that include financing elements	938	(7)	(4)
Payments for share repurchase activity	(48)	(229)	(1,440)
Payments for debt extinguishment costs	(65)	(5)	(26)
Payments of debt issuance costs	(18)	(75)	(35)
Net (repayments)/proceeds of Revolving Credit Facility	—	(83)	83
Proceeds from issuance of common stock	1	1	3
Purchase of and distributions to noncontrolling interests from subsidiaries	—	(2)	(2)
Cash (used)/provided by continuing operations	(272)	2,204	(2,191)
Cash provided by discontinued operations	—	—	43
Net Cash (Used)/Provided by Financing Activities	\$ (272)	\$ 2,204	\$ (2,148)
Effect of exchange rate changes on cash and cash equivalents	(2)	(2)	—
Change in Cash from discontinued operations	—	—	49
Net (Decrease)/Increase in Cash and Cash Equivalents, Funds Deposited by Counterparties and Restricted Cash	(2,820)	3,545	(228)
Cash and Cash Equivalents, Funds Deposited by Counterparties and Restricted Cash at Beginning of Period	3,930	385	613
Cash and Cash Equivalents, Funds Deposited by Counterparties and Restricted Cash at End of Period	\$ 1,110	\$ 3,930	\$ 385

For further discussion of supplemental cash flow information see Note 26, *Cash Flow Information*

See notes to Consolidated Financial Statements

NRG ENERGY, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

(In millions)	Common Stock	Additional Paid-In Capital	Retained Earnings/ (Accumulated Deficit)	Treasury Stock	Accumulated Other Comprehensive Loss	Total Stock- holders' Equity
Balances at December 31, 2018	\$ 4	\$ 8,510	\$ (6,022)	\$ (3,632)	\$ (94)	\$ (1,234)
Net income attributable to NRG Energy, Inc.			4,438			4,438
Other comprehensive loss					(98)	(98)
Shares reissuance for ESPP		1		2		3
Share repurchases				(1,409)		(1,409)
Equity-based awards activity, net ^(a)		(16)				(16)
Issuance of common stock		6				6
Common stock dividends and dividend equivalents declared ^(b)			(32)			(32)
Balance at December 31, 2019	\$ 4	\$ 8,501	\$ (1,616)	\$ (5,039)	\$ (192)	\$ 1,658
Net income			510			510
Other comprehensive loss					(14)	(14)
Repurchase of partners' equity interest in VIE		18				18
Shares reissuance for ESPP				4		4
Share repurchases				(197)		(197)
Equity-based awards activity, net ^(a)		(3)				(3)
Issuance of common stock		1				1
Common stock dividends and dividend equivalents declared ^(b)			(297)			(297)
Balance at December 31, 2020	\$ 4	\$ 8,517	\$ (1,403)	\$ (5,232)	\$ (206)	\$ 1,680
Net income			2,187			2,187
Other comprehensive income					80	80
Shares reissuance for ESPP		1		3		4
Share repurchases				(44)		(44)
Equity-based awards activity, net ^(a)		12				12
Issuance of common stock		1				1
Common stock dividends and dividend equivalents declared ^(b)			(320)			(320)
Balance at December 31, 2021	\$ 4	\$ 8,531	\$ 464	\$ (5,273)	\$ (126)	\$ 3,600

- (a) Includes \$(9) million, \$(27) million and \$(36) million of equivalent shares purchased in lieu of tax withholding on equity compensation issuances for the years ended December 31, 2021, 2020 and 2019, respectively
- (b) Dividends per common share were \$1.30, \$1.20 and \$0.12 for each of the years ended December 31, 2021, 2020 and 2019, respectively

See notes to Consolidated Financial Statements

NRG ENERGY, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1 — *Nature of Business*

General

NRG Energy, Inc., or NRG or the Company, is a consumer services company built on dynamic retail brands. NRG brings the power of energy to customers by producing and selling energy and related products and services, nation-wide in the U.S. and Canada in a manner that delivers value to all of NRG's stakeholders. NRG sells power, natural gas, home and power services, and develops innovative, sustainable solutions, predominately under the brand names NRG, Reliant, Direct Energy, Green Mountain Energy, Stream, and XOOM Energy. The Company has a customer base that includes approximately 6 million Home customers as well as commercial, industrial, and wholesale customers, supported by approximately 18,000 MW of generation.

On January 5, 2021, the Company acquired Direct Energy, which had been a North American subsidiary of Centrica. Direct Energy is a leading retail provider of electricity, natural gas, and home and business energy related products and services in North America, with operations in all 50 U.S. states and 8 Canadian provinces. The acquisition increases NRG's retail portfolio by over 3 million customers and complements its integrated model. It also broadens the Company's presence in the Northeast and into states and locales where it does not currently operate, supporting NRG's objective to diversify its business. See Note 4, *Acquisitions, Discontinued Operations and Dispositions*, to the Consolidated Financial Statements for further discussion of the acquisition of Direct Energy.

On December 1, 2021, the Company sold approximately 4,850 MWs of fossil generating assets from its East and West regions to Generation Bridge, an affiliate of ArcLight Capital Partners. NRG received \$623 million of net proceeds, after purchase price adjustments pursuant to the terms of the Purchase and Sale Agreement entered into on February 28, 2021. As part of the transaction, NRG entered into a tolling agreement for the 866 MW Arthur Kill plant in New York City through April 2025.

During the second quarter of 2021, the results of the PJM Base Residual Auction for the 2022/2023 delivery year were released, leading the Company to announce the near-term retirement of approximately 1,600 MW of its PJM coal generating assets in June 2022. On July 30, 2021, PJM identified reliability impacts resulting from the proposed deactivation of one of those assets, Indian River Unit 4. On August 27, 2021 the Company notified PJM that it would continue operations at Indian River Unit 4 until the reliability upgrades identified by PJM were completed, provided that the unit receives a satisfactory and compensatory reliability must run arrangement. See Item 15 — Note 11, *Asset Impairments*, to the Consolidated Financial Statements for further discussion. The Company is continuing to evaluate the viability of the remaining PJM generating assets.

The Company manages its operations based on the combined results of the retail and wholesale generation businesses with a geographical focus.

The Company's business is segmented as follows:

- Texas, which includes all activity related to customer, plant and market operations in Texas;
- East, which includes all activity related to customer, plant and market operations in the East;
- West/Services/Other, which includes the following assets and activities: (i) all activity related to plant and market operations in the West and Canada, (ii) the Services businesses (iii) activity related to the Cottonwood facility, (iv) the remaining renewables activity, including the Company's equity method investment in Ivanpah Master Holdings, LLC, and (v) activity related to the Company's equity method investment for the Gladstone power plant in Australia; and
- Corporate activities.

Note 2 — *Summary of Significant Accounting Policies*

Basis of Presentation and Principles of Consolidation

The Company's consolidated financial statements have been prepared in accordance with U.S. GAAP. The ASC, established by the FASB, is the source of authoritative U.S. GAAP to be applied by nongovernmental entities. In addition, the rules and interpretative releases of the SEC under authority of federal securities laws are also sources of authoritative U.S. GAAP for SEC registrants.

The consolidated financial statements include NRG's accounts and operations and those of its subsidiaries in which the Company has a controlling interest. All significant intercompany transactions and balances have been eliminated in consolidation. The usual condition for a controlling financial interest is ownership of a majority of the voting interests of an entity. However, a controlling financial interest may also exist through arrangements that do not involve controlling voting

interests. As such, NRG applies the guidance of ASC 810, *Consolidations*, or ASC 810, to determine when an entity that is insufficiently capitalized or not controlled through its voting interests, referred to as a VIE, should be consolidated.

Cash and Cash Equivalents

Cash and cash equivalents include highly liquid investments with an original maturity of three months or less at the time of purchase.

Funds Deposited by Counterparties

Funds deposited by counterparties consist of cash held by the Company as a result of collateral posting obligations from its counterparties. Though some amounts are segregated into separate accounts, not all funds are contractually restricted. Based on the Company's intention, these funds are not available for the payment of general corporate obligations; however, they are available for liquidity management. Depending on market fluctuations and the settlement of the underlying contracts, the Company will refund this collateral to the hedge counterparties pursuant to the terms and conditions of the underlying trades. Since collateral requirements fluctuate daily and the Company cannot predict if any collateral will be held for more than twelve months, the funds deposited by counterparties are classified as a current asset on the Company's balance sheet, with an offsetting liability for this cash collateral received within current liabilities.

Winter Storm Uri Uplift Securitization Proceeds

The Texas Legislature passed HB 4492 for ERCOT to mitigate exceptionally high price adders and ancillary service costs incurred by LSEs during Winter Storm Uri. HB 4492 authorized ERCOT to obtain \$2.1 billion of financing to distribute to LSEs that were charged and paid to ERCOT those highly priced ancillary service and ORDPA during Winter Storm Uri.

In December 2021, ERCOT filed with the PUCT a calculation of each LSE's share of proceeds based on the settlement methodology. The Company accounted for the proceeds we will receive by analogy to the contribution model within ASC 958-605, *Not-for-Profit Entities- Revenue Recognition* and the grant model within IAS 20, *Accounting for Government Grants and Disclosure of Government Assistance*, as a reduction to expenses in the consolidated statements of operations in the annual period for which the proceeds are intended to compensate. The Company expects to receive proceeds of \$689 million from ERCOT in the second quarter of 2022 and we concluded that the threshold for recognizing a receivable was met in December 2021 as the amounts to be received are determinable and ERCOT was directed by its governing body, the PUCT, to take all actions required to effectuate the \$2.1 billion funding approved in the DOO. The associated expense reduction is reflected in Cost of operations within our consolidated statements of operations as that is where the initial costs which are being compensated for were recorded.

Credit Losses

On January 1, 2020, the Company adopted ASU No. 2016-13, *Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*, or ASU No. 2016-13, using the modified retrospective approach. Following the adoption of the new standard, the Company's process of estimating expected credit losses remains materially consistent with its historical practice. Information prior to January 1, 2020, which was previously referred to as the allowance and provision for bad debt, has not been restated and continues to be reported under the accounting standards in effect for that period.

Retail trade receivables are reported on the balance sheet net of the allowance for credit losses. The Company accrues an allowance for current expected credit losses based on (i) estimates of uncollectible revenues by analyzing accounts receivable aging and current and reasonable forecasts of expected economic factors including, but not limited to, unemployment rates and weather-related events, (ii) historical collections and delinquencies, and (iii) counterparty credit ratings for commercial and industrial customers. The Company writes off customer contract receivable balances against the allowance for credit losses when it is determined a receivable is uncollectible.

The following table represents the activity in the allowance for credit losses for the year ended December 31, 2021:

(In millions)	Year Ended December 31,	
	2021	2020
Beginning balance	\$ 67	\$ 43
Acquired balance from Direct Energy	112	—
Provision for credit losses ^(a)	698	108
Write-offs	(224)	(101)
Recoveries collected	30	17
Ending balance^(a)	\$ 683	\$ 67

(a) Includes bilateral finance hedging risk of \$403 million accounted for under ASC 815

The increase in the provision for credit losses during the year ended December 31, 2021, compared to 2020 was primarily due to the impacts of Winter Storm Uri on bilateral finance hedging risk of \$403 million, counterparty credit risk of \$126 million and ERCOT default shortfall payments of \$67 million.

Restricted Cash

The following table provides a reconciliation of cash and cash equivalents, restricted cash and funds deposited by counterparties reported within the consolidated balance sheets that sum to the total of the same such amounts shown in the statements of cash flows.

(In millions)	Year Ended December 31,		
	2021	2020	2019
Cash and cash equivalents	\$ 250	\$ 3,905	\$ 345
Funds deposited by counterparties	845	19	32
Restricted cash	15	6	8
Cash and cash equivalents, funds deposited by counterparties and restricted cash shown in the statements of cash flows	\$ 1,110	\$ 3,930	\$ 385

Restricted cash consists primarily of funds held to satisfy the requirements of certain debt agreements and funds held within the Company's projects that are restricted in their use.

Inventory

Inventory is valued at the lower of weighted average cost or market, and consists principally of natural gas, fuel oil, coal, spare parts and finished goods. The Company removes natural gas inventory in the delivery of goods to customers and as they are used in the production of electricity or steam. The Company removes fuel oil and coal inventories as they are used in the production of electricity. Spare parts inventory is valued at weighted average cost. The Company removes these inventories when they are used for repairs, maintenance or capital projects. The Company expects to recover the natural gas, fuel oil, coal and spare parts costs in the ordinary course of business. Inventory is valued at the lower of cost or net realizable value with cost being determined on a first in first out basis for finished goods and weighted average cost method for all other inventories. The Company removes these inventories as they are sold to customers. Sales of inventory are classified as an operating activity in the consolidated statements of cash flows.

Property, Plant and Equipment

Property, plant and equipment are stated at cost or, in the case of business acquisitions, fair value; however, impairment adjustments are recorded whenever events or changes in circumstances indicate that their carrying values may not be recoverable. NRG also classifies nuclear fuel related to the Company's 44% ownership interest in STP as part of the Company's property, plant, and equipment. Significant additions or improvements extending asset lives are capitalized as incurred, while repairs and maintenance that do not improve or extend the life of the respective asset are charged to expense as incurred. Depreciation, other than nuclear fuel, is computed using the straight-line method, while nuclear fuel is amortized based on units of production over the estimated useful lives. Certain assets and their related accumulated depreciation amounts are adjusted for asset retirements and disposals with the resulting gain or loss included in cost of operations in the consolidated statements of operations.

Asset Impairments

Long-lived assets that are held and used are reviewed for impairment whenever events or changes in circumstances indicate carrying values may not be recoverable. Such reviews are performed in accordance with ASC 360. An impairment loss is indicated if the total future estimated undiscounted cash flows expected from an asset are less than its carrying value. An impairment charge is measured by the difference between an asset's carrying amount and fair value with the difference recorded in operating costs and expenses in the consolidated statements of operations. Fair values are determined by a variety of valuation methods, including third-party appraisals, sales prices of similar assets, and present value techniques.

Investments accounted for by the equity method are reviewed for impairment in accordance with ASC 323, *Investments-Equity Method and Joint Ventures*, or ASC 323, which requires that a loss in value of an investment that is an other-than-temporary decline should be recognized. The Company identifies and measures losses in the value of equity method investments based upon a comparison of fair value to carrying value. For further discussion of these matters, refer to Note 11, *Asset Impairments*.

Development Costs and Capitalized Interest

Development costs include project development costs, which are expensed in the preliminary stages of a project and capitalized when the project is deemed to be commercially viable. Commercial viability is determined by one or a series of actions including, among others, Board of Director approval pursuant to a formal project plan that subjects the Company to significant future obligations that can only be discharged by the use of a Company asset. When a project is available for operations, capitalized interest and capitalized project development costs are reclassified to property, plant and equipment and depreciated on a straight-line basis over the estimated useful life of the project's related assets. Capitalized costs are charged to expense if a project is abandoned or management otherwise determines the costs to be unrecoverable.

Interest incurred on funds borrowed to finance capital projects is capitalized until the project under construction is ready for its intended use. The amount of interest capitalized for the years ended December 31, 2021, 2020 and 2019, was \$2 million, \$2 million and \$3 million, respectively.

Debt Issuance Costs

Debt issuance costs are capitalized and amortized as interest expense on a basis which approximates the effective interest method over the term of the related debt. Debt issuance costs are presented as a direct deduction from the carrying amount of the related debt, or as an asset if the issuance costs relate to revolving debt agreements or certain other financing arrangements.

Intangible Assets

Intangible assets represent contractual rights held by the Company. The Company recognizes specifically identifiable intangible assets including emission allowances, customer and supply contracts, customer relationships, marketing partnerships, trade names and fuel contracts when specific rights and contracts are acquired. These intangible assets are amortized based on expected volumes, expected delivery, expected discounted future net cash flows, straight line or units of production basis. As of December 31, 2021 and 2020, the Company had accumulated amortization related to its intangible assets of \$1.6 billion and \$1.4 billion, respectively.

Emission allowances held-for-sale, which are included in other non-current assets on the Company's consolidated balance sheet, are not amortized; they are carried at the lower of cost or fair value and reviewed for impairment in accordance with ASC 360.

Goodwill

In accordance with ASC 350, *Intangibles-Goodwill and Other*, or ASC 350, the Company recognizes goodwill for the excess cost of an acquired entity over the net value assigned to assets acquired and liabilities assumed. NRG performs goodwill impairment tests annually, during the fourth quarter, and when events or changes in circumstances indicate that the carrying value may not be recoverable.

The Company first assesses qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount. The more-likely-than-not threshold is defined as having a likelihood of more than 50 percent. If it is not more-likely-than-not that the fair value of a reporting unit is less than its carrying amount, there is no goodwill impairment.

In the absence of sufficient qualitative factors indicating that it is more-likely-than-not that no impairment occurred, the Company performs a quantitative assessment by determining the fair value of the reporting unit and comparing the fair value to its book value. If the fair value of the reporting unit exceeds its book value, goodwill of the reporting unit is not considered impaired. If the book value exceeds fair value, the Company recognizes an impairment loss equal to the difference between book value and fair value.

For further discussion of goodwill and goodwill impairment losses recognized refer to Note 12, *Goodwill and Other Intangibles*.

Income Taxes

The Company accounts for income taxes using the liability method in accordance with ASC 740, *Income Taxes*, or ASC 740, which requires that the Company use the asset and liability method of accounting for deferred income taxes and provide deferred income taxes for all significant temporary differences.

The Company has two categories of income tax expense or benefit — current and deferred, as follows:

- Current income tax expense or benefit consists solely of current taxes payable less applicable tax credits, and
- Deferred income tax expense or benefit is the change in the net deferred income tax asset or liability, excluding amounts charged or credited to accumulated other comprehensive income

The Company reports some of its revenues and expenses differently for financial statement purposes than for income tax return purposes, resulting in temporary and permanent differences between the Company's financial statements and income tax returns. The tax effects of such temporary differences are recorded as either deferred income tax assets or deferred income tax liabilities in the Company's consolidated balance sheets. The Company measures its deferred income tax assets and deferred income tax liabilities using income tax rates that are expected to be in effect when the deferred tax is realized.

The Company accounts for uncertain tax positions in accordance with ASC 740, which applies to all tax positions related to income taxes. Under ASC 740, tax benefits are recognized when it is more-likely-than-not that a tax position will be sustained upon examination by the authorities. The benefit recognized from a position is the amount of benefit that has surpassed the more-likely-than-not threshold, as it is more than 50% likely to be realized upon settlement. The Company recognizes interest and penalties accrued related to uncertain tax benefits as a component of income tax expense.

In accordance with ASC 740 and as discussed further in Note 20, *Income Taxes*, changes to existing net deferred tax assets or valuation allowances or changes to uncertain tax benefits, are recorded to income tax (benefit)/expense.

Contract and Emission Credit Amortization

Assets and liabilities recognized through acquisitions related to the purchase and sale of energy and energy-related products in future periods for which the fair value has been determined to be significantly less or more than market are amortized to operating revenues or cost of operations over the term of each underlying contract based on actual generation and/or contracted volumes.

Emission credits represent the right to generate a specified amount of emissions, including sulfur dioxide, nitrogen oxides and carbon dioxide, over a compliance period. Emission credits held for use are amortized to cost of operations based on the weighted average cost of the allowances held.

Lease Revenue

Certain of the Company's revenues are obtained through leases of rooftop residential solar systems, which are accounted for as operating leases in accordance with ASC 842, *Leases*. Pursuant to the lease agreements, the customers' monthly payments are pre-determined fixed monthly amounts and may include an annual fixed percentage escalation to reflect the impact of utility rate increases over the lease term, which is 20 years. The Company records operating lease revenue on a straight-line basis over the life of the lease term. Certain customers made initial down payments that are being amortized over the life of the lease. The difference between the payments received and the revenue recognized is recorded as deferred revenue.

Lessor Accounting

Certain of the Company's revenues are obtained through PPAs or other contractual agreements. Many of these agreements are accounted for as operating leases under ASC 842.

Gross Receipts and Sales Taxes

In connection with its retail sales, the Company records gross receipts taxes on a gross basis in revenues and cost of operations in its consolidated statements of operations. During the years ended December 31, 2021, 2020 and 2019, the Company's revenues and cost of operations included gross receipts taxes of \$184 million, \$107 million and \$109 million, respectively. Additionally, the Company records sales taxes collected from its taxable retail customers and remitted to the various governmental entities on a net basis; thus, there is no impact on the Company's consolidated statement of operations.

Cost of Operations

Cost of operations includes cost of fuel, purchased energy and other costs of sales, mark-to-market for economic hedging activities, contract and emission credit amortization, operations and maintenance, and other cost of operations.

Cost of Fuel, Purchased Energy and Other Cost of Sales

Cost of fuel is primarily the costs associated with procurement, transportation and storage of natural gas, oil and coal to operate the generation portfolio, which is expensed as the fuel is consumed. Purchased energy primarily relates to purchases to supply the Company's customer base, which includes spot market purchases, as well as contracts of various quantities and durations, including renewable purchased power agreements under PPAs with third-party developers, which are accounted for as NPNS (see further discussion in Derivative Financial Instruments below). Other cost of sales primarily consists of TDSP expenses.

The cost of fuel is based on actual and estimated fuel usage for the applicable reporting period. The cost to deliver energy and related services to customers is based on actual and estimated supply volumes for the applicable reporting period. A portion of the cost of energy, \$189 million, \$98 million and \$103 million as of December 31, 2021, 2020 and 2019, respectively, was accrued and consisted of estimated transmission and distribution charges not yet billed by the transmission and distribution utilities.

In estimating supply volumes, the Company considers the effects of historical customer volumes, weather factors and usage by customer class. Transmission and distribution delivery fees are estimated using the same method used for electricity sales and services to retail customers. In addition, ISO fees are estimated based on historical trends, estimated supply volumes and initial ERCOT ISO settlements. Volume estimates are then multiplied by the supply rate and recorded as cost of operations in the applicable reporting period.

Derivative Instruments

The Company accounts for derivative instruments under ASC 815, which requires the Company to record all derivatives on the balance sheet at fair value and changes in fair value in earnings, unless they qualify for the NPNS exception. The Company's primary derivative instruments are power and natural gas purchase or sales contracts, fuels purchase contracts and other energy related commodities used to mitigate variability in earnings due to fluctuation in market prices. In addition, in order to mitigate foreign exchange risk associated with the purchase of USD denominated natural gas for the Company's Canadian business, NRG enters into foreign exchange contract agreements.

As of December 31, 2021 and 2020 the Company did not have derivative instruments that were designated as cash flow or fair value or hedge.

Revenues and expenses on contracts that qualify for the NPNS exception are recognized when the underlying physical transaction is delivered. While these contracts are considered derivative instruments under ASC 815, they are not recorded at fair value, but on an accrual basis of accounting. If it is determined that a transaction designated as NPNS no longer meets the scope exception, the fair value of the related contract is recorded on the balance sheet and immediately recognized through earnings.

NRG's trading activities are subject to limits in accordance with the Company's Risk Management Policy. These contracts are recognized on the balance sheet at fair value and changes in the fair value of these derivative instruments are recognized in earnings.

Mark-to-Market for Economic Hedging Activities

NRG enters into derivative instruments to manage price and delivery risk, optimize physical and contractual assets in the portfolio and manage working capital requirements. The mark-to-market for economic hedging activities are recognized to cost of operations during the reporting period.

Operations and Maintenance and Other Cost of Operations

Operations and maintenance costs include major and other routine preventative (planned outage) and corrective (forced outage) maintenance activities to ensure the safe and reliable operation of the Company's generation portfolio in compliance with all local, state and federal requirements. Operations and maintenance costs are also costs associated with retaining and maintaining the Company's customer base, such as call center support, portfolio maintenance and data analytics. Other cost of operations primarily includes gross receipts taxes, insurance, property taxes and asset retirement obligation expense.

Foreign Currency Translation and Transaction Gains and Losses

The local currencies are generally the functional currency of NRG's foreign operations. Foreign currency denominated assets and liabilities are translated at end-of-period rates of exchange. Revenues, expenses, and cash flows are translated at the weighted-average rates of exchange for the period. The resulting currency translation adjustments are not included in the Company's consolidated statements of operations for the period, but are accumulated and reported as a separate component of stockholders' equity until sale or complete or substantially complete liquidation of the net investment in the foreign entity takes place. Foreign currency transaction gains or losses are reported within other income/(expense) in the Company's consolidated statements of operations. For the years ended December 31, 2021, 2020 and 2019, amounts recognized as foreign currency transaction gains/(losses) were immaterial. The Company's cumulative translation adjustment balances as of December 31, 2021, 2020 and 2019 were \$(8) million, \$(2) million and \$(13) million, respectively.

Concentrations of Credit Risk

Financial instruments which potentially subject the Company to concentrations of credit risk consist primarily of trust funds, accounts receivable, notes receivable, derivatives, and investments in debt securities. Trust funds are held in accounts managed by experienced investment advisors. Certain accounts receivable, notes receivable, and derivative instruments are concentrated within entities engaged in the energy industry. These industry concentrations may impact the Company's overall exposure to credit risk, either positively or negatively, in that the customers may be similarly affected by changes in economic, industry or other conditions. Receivables and other contractual arrangements are subject to collateral requirements under the terms of enabling agreements. However, the Company believes that the credit risk posed by industry concentration is offset by the diversification and creditworthiness of its customer base. See Note 5, *Fair Value of Financial Instruments*, for a further discussion of derivative concentrations.

Fair Value of Financial Instruments

The carrying amount of cash and cash equivalents, funds deposited by counterparties, receivables, accounts payable, and accrued liabilities approximate fair value because of the short-term maturity of these instruments. See Note 5, *Fair Value of Financial Instruments*, for a further discussion of fair value of financial instruments.

Asset Retirement Obligations

The Company accounts for AROs in accordance with ASC 410-20, *Asset Retirement Obligations*, or ASC 410-20. Retirement obligations associated with long-lived assets included within the scope of ASC 410-20 are those for which a legal obligation exists under enacted laws, statutes, and written or oral contracts, including obligations arising under the doctrine of promissory estoppel, and for which the timing and/or method of settlement may be conditional on a future event. ASC 410-20 requires an entity to recognize the fair value of a liability for an ARO in the period in which it is incurred and a reasonable estimate of fair value can be made.

Upon initial recognition of a liability for an ARO, the Company capitalizes the asset retirement cost by increasing the carrying amount of the related long-lived asset by the same amount. Over time, the liability is accreted to its future value, while the capitalized cost is depreciated over the useful life of the related asset. See Note 14, *Asset Retirement Obligations*, for a further discussion of AROs.

Pensions and Other Postretirement Benefits

The Company offers pension benefits through a defined benefit pension plan. In addition, the Company provides postretirement health and welfare benefits for certain groups of employees. The Company accounts for pension and other postretirement benefits in accordance with ASC 715, *Compensation — Retirement Benefits*, or ASC 715. The Company recognizes the funded status of the Company's defined benefit plans in the statement of financial position and records an offset for gains and losses as well as all prior service costs that have not been included as part of the Company's net periodic benefit cost to other comprehensive income. The determination of the Company's obligation and expenses for pension benefits is dependent on the selection of certain assumptions. These assumptions determined by management include the discount rate, the expected rate of return on plan assets and the rate of future compensation increases. The Company's actuarial consultants assist in determining assumptions for such items as retirement age. The assumptions used may differ materially from actual results, which may result in a significant impact to the amount of pension obligation or expense recorded by the Company.

The Company measures the fair value of its pension assets in accordance with ASC 820, *Fair Value Measurements and Disclosures*, or ASC 820.

Stock-Based Compensation

The Company accounts for its stock-based compensation in accordance with ASC 718, *Compensation — Stock Compensation*, or ASC 718. The fair value of the Company's performance stock units is estimated on the date of grant using a Monte Carlo valuation model. NRG uses the Company's common stock price on the date of grant as the fair value of the Company's deferred stock units. The fair value of the Company's restricted stock units is derived from the closing price of NRG's common stock at the grant date. Forfeiture rates are estimated based on an analysis of the Company's historical forfeitures, employment turnover, and expected future behavior. The Company recognizes compensation expense for both graded and cliff vesting awards on a straight-line basis over the requisite service period for the entire award.

Investments Accounted for by the Equity Method

The Company has investments in various domestic energy projects, as well as one Australian project. The equity method of accounting is applied to such investments in affiliates, which include joint ventures and partnerships, because the ownership structure prevents the Company from exercising a controlling influence over the operating and financial policies of the projects. Under this method, equity in pre-tax income or losses of domestic partnerships and, generally, in the net income or losses of its Australian project, are reflected as equity in earnings of unconsolidated affiliates. Distributions from equity method investments that represent earnings on the Company's investment are included within cash flows from operating activities and distributions from equity method investments that represent a return of the Company's investment are included within cash flows from investing activities.

Tax Equity Arrangements

The Company's redeemable noncontrolling interest in subsidiaries represented third-party interests in the net assets under certain tax equity arrangements, which were consolidated by the Company, that had been entered into to finance the cost of solar energy systems under operating leases. The Company determined that the provisions in the contractual agreements of these structures represented substantive profit sharing arrangements. Further, the Company had determined that the appropriate methodology for calculating the redeemable noncontrolling interest that reflected the substantive profit sharing arrangements was a balance sheet approach that utilized the HLBV method. Under the HLBV method, the amounts reported as redeemable

noncontrolling interests represented the amounts the investors that were party to the tax equity arrangements would hypothetically receive at each balance sheet date under the liquidation provisions of the contractual agreements, assuming the net assets of the funding structures were liquidated at their recorded amounts. The investors' interests in the results of operations of the funding structures were determined as redeemable noncontrolling interests at the start and end of each reporting period, after taking into account any capital transactions between the structures and the funds' investors. The calculations utilized to apply the HLBV method included estimated calculations of taxable income or losses for each reporting period. During the first quarter of 2020, the Company repurchased its partners' equity interest, which was the Company's last remaining tax equity arrangement.

Redeemable Noncontrolling Interest

The following table reflects the changes in the Company's redeemable noncontrolling interest balance for the years ended December 31, 2020 and 2019.

	(In millions)
Balance as of December 31, 2018	\$ 19
Distributions to redeemable noncontrolling interest	(2)
Net income attributable to redeemable noncontrolling interest - continuing operations	3
Balance as of December 31, 2019	20
Repurchase of redeemable noncontrolling interest	(20)
Balance as of December 31, 2020	\$ —

Sale-Leaseback Arrangements

NRG is party to sale-leaseback arrangements that provide for the sale of certain assets to a third party and simultaneously leases back the same asset to the Company. If the seller-lessee transfers control of the underlying assets to the buyer-lessor, the arrangement is accounted for under ASC 842-40, Sale-Leaseback Transactions. These arrangements are classified as operating leases on the Company's consolidated balance sheets. See Note 10, *Leases*, for further discussion.

Marketing and Advertising Costs

The Company expenses its marketing and advertising costs as incurred and includes them within selling, general and administrative expenses. The costs of tangible assets used in advertising campaigns are recorded as fixed assets or deferred advertising costs and amortized as advertising costs over the shorter of the useful life of the asset or the advertising campaign. The Company has several long-term sponsorship arrangements. Payments related to these arrangements are deferred and expensed over the term of the arrangement. Advertising expenses for the years ended December 31, 2021, 2020 and 2019 were \$109 million, \$74 million and \$66 million, respectively.

Business Combinations

The Company accounts for its business combinations in accordance with ASC 805, *Business Combinations*, or ASC 805, which requires an acquirer to recognize and measure in its financial statements the identifiable assets acquired, the liabilities assumed, and any noncontrolling interest in the acquiree at fair value at the acquisition date. The Company also recognizes and measures the goodwill acquired or a gain from a bargain purchase in the business combination. In addition, transaction costs are expensed as incurred.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements, disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from these estimates.

In recording transactions and balances resulting from business operations, the Company uses estimates based on the best information available. Estimates are used for such items as plant depreciable lives, tax provisions, uncollectible accounts, actuarially determined benefit costs, the valuation of energy commodity contracts, environmental liabilities, legal costs incurred in connection with recorded loss contingencies, and assets acquired and liabilities assumed in business combinations, among others. In addition, estimates are used to test long-lived assets and goodwill for impairment and to determine the fair value of impaired assets. As better information becomes available or actual amounts are determinable, the recorded estimates are revised. Consequently, operating results can be affected by revisions to prior accounting estimates.

Reclassifications

Certain prior period amounts have been reclassified for comparative purposes. The reclassifications did not affect results from operations, net assets or cash flows.

Recent Accounting Developments - Guidance Adopted in 2021

ASU 2019-12 — In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes*, or ASU 2019-12, to simplify various aspects related to accounting for income taxes. The guidance in ASU 2019-12 amends the general principles in Topic 740 to eliminate certain exceptions for recognizing deferred taxes for investment, performing intraperiod allocation and calculating income taxes in interim periods. This ASU also includes guidance to reduce complexity in certain areas, including recognizing deferred taxes for tax goodwill and allocating taxes to members of a consolidated group. ASU 2019-12 is effective for fiscal years beginning after December 15, 2020, and interim periods within those fiscal years. The Company adopted the amendments effective January 1, 2021 using the prospective approach. The adoption did not have a material impact on the Company's results of operations, statements of cash flows, or statement of financial position.

ASU 2021-10 — In November 2021, the FASB issued ASU 2021-10, *Government Assistance (Topic 832): Disclosures by Business Entities about Government Assistance*, which requires additional disclosures for transactions with a government accounted for by applying a grant or contribution model by analogy, including: (i) the nature of the transactions and the related accounting policy used to account for the transactions; (ii) the line items on the balance sheet and income statement that are affected by the transactions, and the amounts applicable to each financial statement line item; and (iii) significant terms and conditions of the transactions, including commitments and contingencies. The amendments were applied prospectively to all transactions within the scope of the amendments. Early application of the new standard is permitted and the effect of the new standard only impacted the Company's financial statement disclosures.

Recent Accounting Developments - Guidance Not Yet Adopted

ASU 2020-06 — In August 2020, the FASB issued ASU No. 2020-06, *Debt - Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging - Contracts in Entity's Own Equity (Subtopic 815-40)*, or ASU 2020-06. The guidance in ASU 2020-06 reduces the number of accounting models for convertible debt instruments and convertible preferred stock. In addition, ASU 2020-06 improves and amends the related earnings per share guidance. This standard is effective for fiscal years beginning after December 15, 2021. The Company adopted this standard on January 1, 2022 using the modified retrospective approach. As a result of the provisions of the amended guidance, the Company estimates a \$100 million decrease to additional paid-in capital, a \$57 million decrease to debt discount, a \$57 million increase to retained earnings, and a \$14 million decrease to long-term deferred tax liabilities. The Company does not expect the adoptions of ASU 2020-06 to have a material impact on its statement of operations, statements of cash flows or earnings per share amounts.

ASU 2021-08 — In October 2021, the FASB issued ASU No. 2021-08, *Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers*, or ASU 2021-08. Under current GAAP, an acquirer generally recognizes assets acquired and liabilities assumed in a business combination, including contract assets and contract liabilities arising from revenue contracts with customers and other similar contracts that are accounted for in accordance with ASC 606, *Revenue from Contracts with Customers*, or ASC 606, at fair value on the acquisition date. ASU 2021-08 requires that an entity recognize and measure contract assets and contract liabilities acquired in a business combination in accordance with ASC 606. At the acquisition date, an acquirer should account for the related revenue contracts in accordance with ASC 606 as if it had originated the contracts, which should generally result in an acquirer recognizing and measuring the acquired contract assets and contract liabilities consistent with how they were recognized and measured in the acquiree's financial statements. This update also provides certain practical expedients for acquirers when recognizing and measuring acquired contract assets and contract liabilities from revenue contracts in a business combination. The amendments in this update are effective for fiscal years beginning after December 15, 2022, including interim periods within those fiscal years and should be applied prospectively to business combinations occurring on or after the effective date of the amendments. Early adoption is permitted, including adoption in an interim period. Adoption during an interim period requires retrospective application to all business combinations for which the acquisition date occurs on or after the beginning of the fiscal year that includes the interim period of early application and prospectively to all business combinations that occur on or after the date of initial application. The Company does not expect the adoption of ASU 2021-08 to have a material impact on the consolidated financial statements and disclosures.

Note 3 — Revenue Recognition

The Company's policies with respect to its various revenue streams are detailed below. The Company generally applies the invoicing practical expedient to recognize revenue for the revenue streams detailed below, except in circumstances where the invoiced amount does not represent the value transferred to the customer.

Retail Revenue

Gross revenues for energy sales and services to retail customers are recognized as the Company transfers the promised goods and services to the customer. For the majority of its electricity and natural gas contracts, the Company's performance obligation with the customer is satisfied over time and performance obligations for its electricity and natural gas products are recognized as the customer takes possession of the product. The Company also allocates the contract consideration to distinct performance obligations in a contract for which the timing of the revenue recognized is different. Additionally, customer discounts and incentives reduce the contract consideration and are recognized over the term of the contract.

Energy sales and services that have been delivered but not billed by period end are estimated. Accrued unbilled revenues are based on estimates of customer usage since the date of the last meter reading provided by the independent system operators, utilities, or electric distribution companies. Volume estimates are based on daily forecasted volumes and estimated customer usage by class. Unbilled revenues are calculated by multiplying these volume estimates by the applicable rate by customer class. Estimated amounts are adjusted when actual usage is known and billed.

As contracts for retail electricity and natural gas can be for multi-year periods, the Company has performance obligations under these contracts that have not yet been satisfied. These performance obligations have transaction prices that are both fixed and variable, and that vary based on the contract duration, customer type, inception date and other contract-specific factors. For the fixed price contracts, the amount of any unsatisfied performance obligations will vary based on customer usage, which will depend on factors such as weather and customer activity and therefore it is not practicable to estimate such amounts.

Energy Revenue

Both physical and financial transactions consist of revenues billed to a third party at either market or negotiated contract terms to optimize the financial performance of the Company's generating facilities. Electric energy revenue is recognized upon transmission to the customer over time, using the output method for measuring progress of satisfaction of performance obligations. Physical transactions, or the sale of generated electricity to meet supply and demand, are recorded on a gross basis in the Company's consolidated statements of operations. The Company applies the invoicing practical expedient in recognizing energy revenue. Under the practical expedient, revenue is recognized based on the invoiced amount which is equal to the value to the customer of NRG's performance obligation completed to date. Financial transactions used to hedge the sale of electricity are recorded net within operating revenues in the consolidated statements of operations in accordance with ASC 815.

Ancillary revenues, included in Other revenue, are recognized over time as the obligation is fulfilled, using the output method for measuring progress of satisfaction of performance obligations.

Capacity Revenue

The Company's largest sources of capacity revenues are capacity auctions in PJM, ISO-NE and NYISO. Capacity revenues also include revenues billed to a third party at either market or negotiated contract terms for making installed generation and demand response capacity available in order to satisfy system integrity and reliability requirements. Capacity revenues are recognized over time, using the output method for measuring progress of satisfaction of performance obligations. The Company applies the invoicing practical expedient in recognizing capacity revenue. Under the practical expedient, revenue is recognized based on the invoiced amount which is equal to the value to the customer of NRG's performance obligation completed to date.

Performance Obligations

As of December 31, 2021, estimated future fixed fee performance obligations are \$258 million, \$48 million and \$1 million for fiscal years 2022, 2023 and 2024, respectively. These performance obligations are for cleared auction MWs in the PJM, ISO-NE, NYISO and MISO capacity auctions and are subject to penalties for non-performance.

Disaggregated Revenue

The following tables represent the Company's disaggregation of revenue from contracts with customers for the years ended December 31, 2021, 2020 and 2019:

(In millions)	For the Year Ended December 31, 2021				
	Texas	East	West/Services/ Other	Corporate/ Eliminations	Total
Retail revenue					
Home ^(a)	\$ 5,665	\$ 1,959	\$ 2,053	\$ (1)	\$ 9,676
Business	2,745	9,903	1,237	—	13,885
Total retail revenue	8,410	11,862	3,290	(1)	23,561
Energy revenue ^(c)	329	508	371	7	1,215
Capacity revenue ^(c)	—	718	57	—	775
Mark-to-market for economic hedging activities ^(d)	(3)	(88)	(86)	13	(164)
Contract amortization	—	(26)	(4)	—	(30)
Other revenue ^{(b)(c)}	1,557	59	25	(9)	1,632
Total operating revenue	10,293	13,033	3,653	10	26,989
Less: Lease revenue	—	1	7	—	8
Less: Realized and unrealized ASC 815 revenue	130	184	(96)	16	234
Less: Contract amortization	—	(26)	(4)	—	(30)
Total revenue from contracts with customers	\$ 10,163	\$ 12,874	\$ 3,746	\$ (6)	\$ 26,777

(a) Home includes Services

(b) Other Revenue in Texas includes ancillary revenues of \$1.3 billion driven by high pricing during Winter Storm Uri

(c) The following amounts of energy, capacity and other revenue relate to derivative instruments and are accounted for under ASC 815:

(In millions)	Texas	East	West/Services/ Other	Corporate/ Eliminations	Total
Energy revenue	\$ —	\$ 131	\$ 2	\$ 3	\$ 136
Capacity revenue	—	149	—	—	149
Other revenue	133	(8)	(12)	—	113

(d) Revenue relates entirely to unrealized gains and losses on derivative instruments accounted for under ASC 815

For the Year Ended December 31, 2020

(In millions)	Texas	East	West/Services/ Other	Corporate/ Eliminations	Total
Retail revenue					
Home ^(a)	\$ 5,027	\$ 1,210	\$ 96	\$ (2)	\$ 6,331
Business	1,034	95	—	—	1,129
Total retail revenue	6,061	1,305	96	(2)	7,460
Energy revenue ^(b)	24	183	333	(1)	539
Capacity revenue ^(b)	—	620	61	(1)	680
Mark-to-market for economic hedging activities ^(c)	2	88	(3)	8	95
Other revenue ^(b)	222	62	43	(8)	319
Total operating revenue	6,309	2,258	530	(4)	9,093
Less: Lease revenue	—	1	17	—	18
Less: Realized and unrealized ASC 815 revenue	30	314	38	3	385
Total revenue from contracts with customers	\$ 6,279	\$ 1,943	\$ 475	\$ (7)	\$ 8,690

(a) Home includes Services

(b) The following amounts of energy, capacity and other revenue relate to derivative instruments and are accounted for under ASC 815:

(In millions)	Texas	East	West/Services/ Other	Corporate/ Eliminations	Total
Energy revenue	\$ —	\$ 67	\$ 43	\$ (5)	\$ 105
Capacity revenue	—	156	—	—	156
Other revenue	28	3	(2)	—	29

(c) Revenue relates entirely to unrealized gains and losses on derivative instruments accounted for under ASC 815

For the Year Ended December 31, 2019

(In millions)	Texas	East	West/Services/ Other	Corporate/ Eliminations	Total
Retail revenue					
Home ^(a)	\$ 5,027	\$ 1,173	\$ 57	\$ (3)	\$ 6,254
Business	1,205	74	—	—	1,279
Total retail revenue	6,232	1,247	57	(3)	7,533
Energy revenue ^(b)	529	322	318	—	1,169
Capacity revenue ^(b)	—	664	36	—	700
Mark-to-market for economic hedging activities ^(c)	47	(29)	16	(1)	33
Other revenue ^(b)	261	58	70	(3)	386
Total operating revenue	7,069	2,262	497	(7)	9,821
Less: Lease revenue	—	1	19	—	20
Less: Realized and unrealized ASC 815 revenue	1,562	183	67	(2)	1,810
Total revenue from contracts with customers	\$ 5,507	\$ 2,078	\$ 411	\$ (5)	\$ 7,991

(a) Home includes Services

(b) The following amounts of energy, capacity and other revenue relate to derivative instruments and are accounted for under ASC 815:

(In millions)	Texas	East	West/Services/ Other	Corporate/ Eliminations	Total
Energy revenue	\$ 1,459	\$ 98	\$ 39	\$ (1)	\$ 1,595
Capacity revenue	—	109	—	—	109
Other revenue	56	5	12	—	73

(c) Revenue relates entirely to unrealized gains and losses on derivative instruments accounted for under ASC 815

Contract Balances

The following table reflects the contract assets and liabilities included in the Company's balance sheet as of December 31, 2021 and 2020:

(In millions)	December 31, 2021	December 31, 2020
Deferred customer acquisition costs	\$ 133	\$ 113
Accounts receivable, net - Contracts with customers	3,057	866
Accounts receivable, net - Derivative instruments	182	33
Accounts receivable, net - Affiliate	6	5
Total accounts receivable, net	<u>\$ 3,245</u>	<u>\$ 904</u>
Unbilled revenues (included within Accounts receivable, net - Contracts with customers)	\$ 1,574	\$ 393
Deferred revenues ^(a)	\$ 227	\$ 60

(a) Deferred revenues from contracts with customers for the years ended December 31, 2021 and 2020 were approximately \$224 million and \$31 million, respectively

The revenue recognized from contracts with customers during the years ended December 31, 2021 and 2020 relating to the deferred revenue balance at the beginning of each period was \$23 million and \$13 million, respectively. The change in deferred revenue balances during the years ended December 31, 2021 and 2020 was primarily due to the timing difference of when consideration was received and when the performance obligation was transferred.

The Company's customer acquisition costs consist of broker fees, commission payments and other costs that represent incremental costs of obtaining the contract with customers for which the Company expects to recover. The Company amortizes these amounts over the estimated life of the customer contract. As a practical expedient, the Company expenses the incremental costs of obtaining a contract if the amortization period of the asset would have been one year or less.

When the Company receives consideration from the customer that is in excess of the amount due, such consideration is reclassified to deferred revenue, which represents a contract liability. Generally, the Company will recognize revenue from contract liabilities in the next period as the Company satisfies its performance obligations.

Note 4 — Acquisitions, Discontinued Operations and Dispositions

Acquisitions

Direct Energy Acquisition

On January 5, 2021 (the "Acquisition Closing Date"), the Company acquired all of the issued and outstanding common shares of Direct Energy, which had been a North American subsidiary of Centrica plc. Direct Energy is a leading retail provider of electricity, natural gas, and home and business energy related products and services in North America, with operations in all 50 U.S. states and 8 Canadian provinces. The acquisition increased NRG's retail portfolio by over 3 million customers and strengthens its integrated model. It also broadens the Company's presence in the Northeast and into states and locales where it did not previously operate, supporting NRG's objective to diversify its business.

The Company paid an aggregate purchase price of \$3.625 billion in cash, subject to a purchase price adjustment of \$77 million. The Company funded the purchase price using a combination of \$715 million of cash on hand, \$166 million from a draw on its Revolving Credit Facility (of which \$107 million was used to fund acquisition costs and financing fees that are not included in the aggregate purchase price above) as well as approximately \$2.9 billion in secured and unsecured corporate debt issued in December 2020. The final purchase price adjustment resulted in additional payment of \$22 million, which was paid in December 2021.

The Company also increased its collective collateral facilities by \$3.4 billion as of the Acquisition Closing Date to meet the additional liquidity requirements related to the acquisition, as detailed in the following table:

	(In millions)
Available on Acquisition Closing Date	
Revolving Credit Facility commitment increase	\$ 802
Revolving Credit Facility new tranche	273
Facility agreement in connection with the sale of pre-capitalized trust securities	874
Available as of December 31, 2020	
Credit default swap facility	150
Revolving accounts receivable financing facility	750
Repurchase facility	75
Bilateral letter of credit facilities	475
Total Increases to Liquidity and Collateral Facilities	<u>\$ 3,399</u>

For further discussion see Note 13, *Long-term Debt and Finance Leases*.

Acquisition costs of \$25 million and \$17 million for the years ended December 31, 2021 and 2020, respectively, are included in acquisition-related transaction and integration costs in the Company's consolidated statement of operations.

The acquisition has been recorded as a business combination under ASC 805 with identifiable assets acquired and liabilities assumed recorded at their estimated fair values on the acquisition date. The purchase price is allocated as follows:

	(In millions)
Current Assets	
Cash and cash equivalents	\$ 152
Funds deposited by counterparties	21
Restricted cash	9
Accounts receivable, net	1,802
Inventory	106
Derivative instruments	1,014
Cash collateral paid in support of energy risk management activities	233
Prepayments and other current assets	173
Total current assets	<u>3,510</u>
Property, plant and equipment, net	<u>151</u>
Other Assets	
Goodwill ^(a)	1,250
Intangible assets, net:	
Customer relationships ^(b)	1,277
Customer and supply contracts ^(b)	610
Trade names ^(b)	310
Renewable energy credits	124
Total intangible assets, net	<u>2,321</u>
Derivative instruments	531
Other non-current assets	31
Total other assets	<u>4,133</u>
Total Assets	<u>\$ 7,794</u>

	(In millions)
Current Liabilities	
Accounts payable	\$ 1,116
Derivative instruments	1,266
Cash collateral received in support of energy risk management activities	21
Accrued expenses and other current liabilities	670
Total current liabilities	3,073
Other Liabilities	
Derivative instruments	562
Deferred income taxes	320
Other non-current liabilities	115
Total other liabilities	997
Total Liabilities	\$ 4,070
Direct Energy Purchase Price	\$ 3,724

- (a) Goodwill arising from the acquisition is attributed to the value of the platform acquired and the synergies expected from combining the operations of Direct Energy with NRG's existing businesses. Goodwill was allocated to the Texas, East, and West/Services/Other segments of \$427 million, \$648 million, and \$175 million, respectively. Goodwill expected to be deductible for tax purposes is \$322 million
- (b) The weighted average amortization period for total amortizable intangible assets is 12 years

Measurement Period Adjustments

The following measurement period adjustments were recognized during the quarter ended December 31, 2021:

	(In millions)
Assets	
Prepayments and other current assets	\$ (10)
Goodwill	(7)
Total decrease in assets	\$ (17)
Liabilities	
Accounts payable	\$ (4)
Accrued expenses and other current liabilities	(20)
Deferred income taxes	(18)
Total decrease in liabilities	\$ (42)
Net measurement period adjustments	\$ 25

The measurement period adjustments are attributable primarily to refinement of the underlying assumptions used to estimate the fair value of assets acquired and liabilities assumed as more information was obtained about facts and circumstances that existed as of the Acquisition Closing Date.

Fair Value Measurement of Intangible Assets

The fair values of intangible assets as of the Acquisition Closing Date were measured primarily based on significant inputs that are observable and unobservable in the market and thus represent Level 2 and Level 3 measurements, respectively. Significant inputs were as follows:

Customer relationships — Customer relationships, reflective of Direct Energy's customer base, were valued using an excess earning method of the income approach. Under this approach, the Company estimated the present value of expected future cash flows resulting from existing customer relationships, considering attrition and charges for contributory assets (such as net working capital, fixed assets, workforce and trade names) utilized in the business, discounted at an independent power producer peer group's weighted average cost of capital. The customer relationships are amortized to depreciation and amortization, ratably based on discounted future cash flows. The weighted average amortization period is 12 years.

Customer and supply contracts — The fair value of in-market and out-of-market customer and supply contracts were estimated based on contractual terms compared to market prices as of the Acquisition Closing Date. The majority of the contracts were valued using prices provided by external sources, primarily price quotations available through broker or over-the-counter and online exchanges. For contracts for which external sources or observable market quotes were not available, these values were based on valuation techniques including, but not limited to, internal models based on fundamental analysis of the market and extrapolation of the observable market data with similar characteristics. In addition, the Company applied a credit reserve to reflect credit risk, which is calculated based on published default probabilities. The customer and supply contracts are amortized to revenue and cost of operations, respectively, based upon the fair market value, as of the acquisition date, for each delivery month. The weighted average amortization period is 14 years.

Trade names — Trade names were valued using a "relief from royalty" method of the income approach. Under this approach, the fair value is estimated to be the present value of royalties saved because NRG owns the intangible asset and therefore does not have to pay a royalty for its use. The trade names are amortized to depreciation and amortization, on a straight line basis, over a weighted average amortization period of 15 years.

Renewable energy credits — Renewable energy credits were valued based on the market prices as of the Acquisition Closing Date. Renewable energy credits are retired, as required, for the applicable compliance period. They are expensed to cost of operations based on customer usage.

Fair Value Measurement of Derivative Assets and Liabilities

The fair values of derivatives assets and liabilities as of the Acquisition Closing Date were as follows:

(In millions)	Fair Value			
	Total	Level 1	Level 2	Level 3
Derivatives assets	\$ 1,545	\$ 155	\$ 1,272	\$ 118
Derivatives liabilities	1,828	207	1,489	132

Refer to Note 5, *Fair Value of Financial Instruments* for discussion on derivative fair value measurements.

Supplemental Information

For the Year Ended December 31, 2021 Direct Energy contributed revenue and income before income taxes of \$15.6 billion and \$2.4 billion, respectively.

Supplemental Unaudited Pro Forma Financial Information

The following table provides unaudited pro forma combined financial information of NRG and Direct Energy, after giving effect to the Direct Energy acquisition and related financing transactions as if they had occurred on January 1, 2019. The pro forma financial information has been prepared for illustrative and informational purposes only, and is not intended to project future operating results or indicative of what our financial performance would have been had the transactions occurred on the date assumed. No effect has been given to operating synergies.

(In millions)	For the Year Ended December 31,		
	2021	2020	2019
Total operating revenues	\$ 26,987	\$ 21,326	\$ 23,673
Income from continuing operations	2,225	471	3,623

Amounts above reflect certain pro forma adjustments that were directly attributable to the Direct Energy acquisition. These adjustments include the following:

- (i) Income statement effects of fair value adjustments based on the purchase price allocation including amortization of intangible assets, depreciation of property, plant and equipment and lease expense.
- (ii) Interest expense assumes the financing transactions directly attributable to the Direct Energy acquisition occurred on January 1, 2019.
- (iii) Removal of Direct Energy historical interest expense associated with related party notes receivable/payable between Direct Energy and Centrica and its subsidiaries, as those notes are assumed to be repaid as of January 1, 2019.
- (iv) Elimination of transactions between NRG and Direct Energy.
- (v) Adjustments to reflect all acquisition costs occurring during the year ended December 31, 2019.

(vi) Tax effects of pro forma adjustments on all periods presented and shifting the recognition of one time tax benefits resulting from the acquisition from the year ended December 31, 2021 to the year ended December 31, 2019.

Midwest Generation Lease Purchase — On September 29, 2020, Midwest Generation acquired all of the ownership interests in the Powerton facility and Units 7 and 8 of the Joliet facility, which were being leased through 2034 and 2030, respectively, for approximately \$260 million. The purchase was funded with cash-on-hand. Upon closing, lease expense related to these facilities, which totaled approximately \$14 million in 2019, and the operating lease liability of \$148 million were eliminated.

Stream Energy Acquisition — On August 1, 2019, the Company completed the acquisition of Stream Energy's retail electricity and natural gas business operating in 9 states and Washington, D.C. for \$329 million, including working capital and other adjustments of approximately \$29 million. The acquisition increased NRG's retail portfolio by approximately 600,000 RCEs or 450,000 customers.

The purchase price was allocated as follows:

	(In millions)
Account receivable	\$ 98
Accounts payable	(73)
Other net current and non-current working capital	5
Marketing partnership	154
Customer relationships	85
Trade name	28
Other intangible assets	26
Goodwill ^(a)	6
Stream Purchase Price	\$ 329

(a) Goodwill arising from the acquisition is attributed to the value of the platform acquired and the synergies expected from combining the operations of Stream Energy with NRG's existing businesses. Goodwill of \$5 million and \$1 million was assigned to the Texas and East segments, respectively, and is not deductible for tax purposes

Dispositions

Sale of 4,850 MW of Fossil generating assets

On December 1, 2021, the Company closed the previously announced sale of approximately 4,850 MWs of fossil generating assets from its East and West regions to Generation Bridge, an affiliate of ArcLight Capital Partners. Proceeds of \$760 million were reduced by working capital and other adjustments of \$137 million, resulting in net proceeds of \$623 million. The Company recorded a gain of \$210 million from the sale, which includes the \$39 million indemnification liability recorded as discussed below. As part of the transaction, NRG entered into a tolling agreement for the 866 MW Arthur Kill plant in New York City through April 2025.

As part of the agreement to sell the fossil generating assets, NRG has agreed to indemnify Generation Bridge for certain future environmental compliance costs up to \$39 million. The indemnity term will expire on December 1, 2028. The Company has recorded the liability within accrued expenses and other current liabilities and other non-current liabilities.

Sale of Agua Caliente

On February 3, 2021, the Company closed on the sale of its 35% ownership in the Agua Caliente solar project to Clearway Energy, Inc. for \$202 million. NRG recognized a gain on the sale of \$17 million, including cash disposed of \$7 million.

Sale of Home Solar

In the third quarter of 2020, the Company concluded its Home Solar business was held for sale and recorded an impairment loss of \$29 million, as further discussed in Note 11, *Asset Impairments*. On November 13, 2020, the Company completed the sale of the Home Solar business for cash proceeds of \$66 million, resulting in a \$2 million loss on the sale. In connection with the sale, the Company extinguished debt of \$27 million and recognized a \$5 million loss on the extinguishment.

Company completed other asset sales for cash proceeds of \$12 million and \$15 million during the years ended December 31, 2021 and 2020, respectively.

Discontinued Operations

Sale of South Central Portfolio

On February 4, 2019, the Company completed the sale of its South Central Portfolio to Cleco for cash consideration of \$1 billion excluding working capital and other adjustments. The Company concluded that the divested business met the criteria for discontinued operations, as the disposition represented a strategic shift in the business in which NRG operates. In connection with the transaction, NRG also entered into a transition services agreement to provide certain corporate services to the divested business, which have been substantially completed in 2020.

The South Central Portfolio includes the 1,177 MW Cottonwood natural gas generating facility. Upon the closing of the sale of the South Central Portfolio, NRG entered into a lease agreement with Cleco to leaseback the Cottonwood facility through 2025. Due to its continuing involvement with the Cottonwood facility, NRG did not use held-for-sale or discontinued operations treatment in accounting for the Cottonwood facility.

Summarized results of South Central discontinued operations for the year ended December 31, 2019 were as follows:

	(In millions)
Operating revenues	\$ 31
Operating costs and expenses	(23)
Gain from operations of discontinued components	8
Gain on disposal of discontinued operations, net of tax	20
Gain from discontinued operations, including disposal, net of tax	\$ 28

Sale of Ownership in NRG Yield, Inc. and its Renewables Platform

On August 31, 2018, the Company completed the sale of its ownership interests in NRG Yield, Inc. and its Renewables Platform to GIP for total cash consideration of \$1.348 billion. The Company concluded that the divested businesses met the criteria for discontinued operations, as the dispositions represented a strategic shift in the business in which NRG operates. In connection with the transaction, NRG entered into a transition services agreement to provide certain corporate services to the divested businesses in 2018, which concluded in 2020. During the year ended December 31, 2019, the Company recorded an adjustment to reduce the purchase price by \$15 million in connection with the completion of the Patriot Wind project. During the year ended December 31, 2019, the Company reduced the liability related to the indemnification of NRG Yield for any increase in property taxes for certain solar properties by \$22 million due to updated estimates.

Carlsbad

On February 6, 2018, NRG entered into an agreement with NRG Yield and GIP to sell 100% of its membership interests in Carlsbad Energy Holdings LLC, which owns the Carlsbad project, for \$385 million of cash consideration, excluding working capital adjustments. The primary condition to close the Carlsbad transaction was the completion of the sale of NRG Yield and the Renewables Platform. At the time of the sale of NRG Yield and the Renewables Platform in August 2018, the Company concluded that the Carlsbad project met the criteria for discontinued operations and accordingly, all current and prior period results for Carlsbad were reclassified as discontinued operations. The transaction closed on February 27, 2019. Carlsbad will continue to have a ground lease and easement agreement with NRG with an initial term ending in 2039 and two ten-year extensions. As a result of the transaction, additional commitments related to the project totaled \$23 million as of December 31, 2021 and December 31, 2020.

Summarized results of NRG Yield, Inc. and Renewables Platform and Carlsbad discontinued operations for the year ended December 31, 2019 were as follows:

	(In millions)
Operating revenues	\$ 19
Operating costs and expenses	(9)
Other expenses	(5)
Gain/(loss) from discontinued operations, net of tax	5
Gain/(loss) on disposal of discontinued operations, net of tax	265
Income/(expense) from California property tax indemnification	22
Income/(expense) from other commitments, indemnification and fees	4
Income/(loss) on disposal of discontinued operations, net of tax	291
Income/(loss) from discontinued operations, net of tax	\$ 296

GenOn

On June 14, 2017, the GenOn Entities filed voluntary petitions for relief under Chapter 11 of the Bankruptcy Code in the Texas Bankruptcy Court. As a result of the bankruptcy filings, NRG concluded that it no longer controlled GenOn as it was subject to the control of the Texas Bankruptcy Court; and accordingly, NRG deconsolidated GenOn and its subsidiaries for financial reporting purposes as of such date. For the Year Ended December 31, 2019 NRG recorded \$3 million loss from discontinued operations, net of tax for GenOn results of operations.

Note 5 — Fair Value of Financial Instruments

For cash and cash equivalents, funds deposited by counterparties, restricted cash, accounts and other receivables, accounts payable, restricted cash, and cash collateral paid and received in support of energy risk management activities, the carrying amount approximates fair value because of the short-term maturity of those instruments and are classified as Level 1 within the fair value hierarchy.

The estimated carrying value and fair value of the Company's long-term debt, including current portion, is as follows:

(In millions)	As of December 31,			
	2021		2020	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
Long-term debt, including current portion ^(a)	\$ 8,040	\$ 8,327	\$ 8,781	\$ 9,446

(a) Excludes deferred financing costs, which are recorded as a reduction to long-term debt on the Company's consolidated balance sheets

The fair value of the Company's publicly-traded long-term debt is based on quoted market prices and is classified as Level 2 within the fair value hierarchy.

Fair Value Accounting under ASC 820

ASC 820 establishes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three levels as follows:

- Level 1 — quoted prices (unadjusted) in active markets for identical assets or liabilities that the Company has the ability to access as of the measurement date. NRG's financial assets and liabilities utilizing Level 1 inputs include active exchange-traded securities, energy derivatives, and trust fund investments.
- Level 2 — inputs other than quoted prices included within Level 1 that are directly observable for the asset or liability or indirectly observable through corroboration with observable market data. NRG's financial assets and liabilities utilizing Level 2 inputs include fixed income securities, exchange-based derivatives, and over the counter derivatives such as swaps, options and forward contracts.
- Level 3 — unobservable inputs for the asset or liability only used when there is little, if any, market activity for the asset or liability at the measurement date. NRG's financial assets and liabilities utilizing Level 3 inputs include infrequently-traded, non-exchange-based derivatives and commingled investment funds, and are measured using present value pricing models.

In accordance with ASC 820, the Company determines the level in the fair value hierarchy within which each fair value measurement in its entirety falls, based on the lowest level input that is significant to the fair value measurement in its entirety.

Recurring Fair Value Measurements

Debt securities, equity securities, and trust fund investments, which are comprised of various U.S. debt and equity securities, and derivative assets and liabilities, are carried at fair market value.

The following tables present assets and liabilities measured and recorded at fair value on the Company's consolidated balance sheets on a recurring basis and their level within the fair value hierarchy:

(In millions)	As of December 31, 2021			
	Fair Value			
	Total	Level 1	Level 2	Level 3
Investments in securities (classified within other current and non-current assets)	\$ 32	\$ 15	\$ 17	\$ —
Nuclear trust fund investments:				
Cash and cash equivalents	33	33	—	—
U.S. government and federal agency obligations	112	111	1	—
Federal agency mortgage-backed securities	100	—	100	—
Commercial mortgage-backed securities	44	—	44	—
Corporate debt securities	122	—	122	—
Equity securities	494	494	—	—
Foreign government fixed income securities	4	—	4	—
Other trust fund investments (classified within other non-current assets):				
U.S. government and federal agency obligations	1	1	—	—
Derivative assets:				
Foreign exchange contracts	1	—	1	—
Commodity contracts	7,139	981	5,701	457
Measured using net asset value practical expedient:				
Equity securities-nuclear trust fund investments	99			
Equity securities (classified within other non-current assets)	7			
Total assets	<u>\$ 8,188</u>	<u>\$ 1,635</u>	<u>\$ 5,990</u>	<u>\$ 457</u>
Derivative liabilities:				
Foreign exchange contracts	\$ 1	\$ —	\$ 1	\$ —
Commodity contracts	\$ 4,798	\$ 626	\$ 4,008	\$ 164
Total liabilities	<u>\$ 4,799</u>	<u>\$ 626</u>	<u>\$ 4,009</u>	<u>\$ 164</u>

(In millions)	As of December 31, 2020			
	Fair Value			
	Total	Level 1	Level 2	Level 3
Investments in securities (classified within other current or non-current assets)	\$ 25	\$ 10	\$ 15	\$ —
Nuclear trust fund investments:				
Cash and cash equivalents	23	23	—	—
U.S. government and federal agency obligations	70	69	1	—
Federal agency mortgage-backed securities	89	—	89	—
Commercial mortgage-backed securities	36	—	36	—
Corporate debt securities	144	—	144	—
Equity securities	434	434	—	—
Foreign government fixed income securities	7	1	6	—
Other trust fund investments (classified within other non-current assets):				
U.S. government and federal agency obligations	1	1	—	—
Derivative assets:				
Commodity contracts	821	59	623	139
Measured using net asset value practical expedient:				
Equity securities-nuclear trust fund investments	87			
Equity securities (classified within other non-current assets)	8			
Total assets	<u>\$ 1,745</u>	<u>\$ 597</u>	<u>\$ 914</u>	<u>\$ 139</u>
Derivative liabilities:				
Commodity contracts	\$ 884	\$ 86	\$ 643	\$ 155
Total liabilities	<u>\$ 884</u>	<u>\$ 86</u>	<u>\$ 643</u>	<u>\$ 155</u>

The following tables reconcile, for the years ended December 31, 2021 and 2020, the beginning and ending balances for financial instruments that are recognized at fair value in the consolidated financial statements at least annually using significant unobservable inputs:

(In millions)	For the Year Ended December 31, 2021	
	Fair Value Measurement Using Significant Unobservable Inputs (Level 3)	
	Derivatives ^(a)	
Beginning balance as of January 1, 2021	\$	(16)
Contracts added from Direct Energy acquisition		(15)
Total gains realized/unrealized included in earnings		145
Purchases		93
Transfers into Level 3 ^(b)		71
Transfers out of Level 3 ^(b)		15
Ending balance as of December 31, 2021	<u>\$</u>	<u>293</u>
Gains for the period included in earnings attributable to the change in unrealized gains or losses relating to assets or liabilities still held as of December 31, 2021	<u>\$</u>	<u>120</u>

(a) Consists of derivatives assets and liabilities, net

(b) Transfers into/out of Level 3 are related to the availability of external broker quotes, and are valued as of the end of the reporting period. All transfers into/out of Level 3 are from/to Level 2

(In millions)	For the Year Ended December 31, 2020	
	Fair Value Measurement Using Significant Unobservable Inputs (Level 3)	
	Derivatives ^(a)	
Beginning balance as of January 1, 2020	\$	38
Total (losses) realized/unrealized included in earnings		(44)
Purchases		(13)
Transfers into Level 3 ^(b)		1
Transfers out of Level 3 ^(b)		2
Ending balance as of December 31, 2020	\$	(16)
Gains for the period included in earnings attributable to the change in unrealized gains or losses relating to assets or liabilities still held as of December 31, 2020	\$	9

(a) Consists of derivatives assets and liabilities, net

(b) Transfers into/out of Level 3 are related to the availability of external broker quotes, and are valued as of the end of the reporting period. All transfers into/out of Level 3 are from/to Level 2

Realized and unrealized gains and losses included in earnings that are related to the energy derivatives are recorded in operating revenues and cost of operations.

Non-derivative fair value measurements

NRG's investments in debt securities are classified as Level 3 and consist of non-traded debt instruments that were valued based on third-party market value assessments.

The trust fund investments are held primarily to satisfy NRG's nuclear decommissioning obligations. These trust fund investments hold debt and equity securities directly and equity securities indirectly through commingled funds. The fair values of equity securities held directly by the trust funds are based on quoted prices in active markets and are categorized in Level 1. In addition, U.S. government and federal agency obligations are categorized as Level 1 because they trade in a highly liquid and transparent market. The fair values of corporate debt securities are based on evaluated prices that reflect observable market information, such as actual trade information of similar securities, adjusted for observable differences and are categorized in Level 2. Certain equity securities, classified as commingled funds, are analogous to mutual funds, are maintained by investment companies, and hold certain investments in accordance with a stated set of fund objectives. The fair value of the equity securities classified as commingled funds are based on net asset values per fund share (the unit of account), derived from the quoted prices in active markets of the underlying equity securities. However, because the shares in the commingled funds are not publicly quoted, not traded in an active market and are subject to certain restrictions regarding their purchase and sale, the commingled funds are measured using net asset value practical expedient. See also Note 7, *Nuclear Decommissioning Trust Fund*.

Derivative fair value measurements

A portion of the Company's contracts are exchange-traded contracts with readily available quoted market prices. A majority of NRG's contracts are non-exchange-traded contracts valued using prices provided by external sources, primarily price quotations available through brokers or over-the-counter and on-line exchanges. For the majority of NRG markets, the Company receives quotes from multiple sources. To the extent that NRG receives multiple quotes, the Company's prices reflect the average of the bid-ask mid-point prices obtained from all sources that NRG believes provide the most liquid market for the commodity. If the Company receives one quote, then the mid-point of the bid-ask spread for that quote is used. The terms for which such price information is available vary by commodity, region and product. A significant portion of the fair value of the Company's derivative portfolio is based on price quotes from brokers in active markets who regularly facilitate those transactions and the Company believes such price quotes are executable. The Company does not use third party sources that derive price based on proprietary models or market surveys. The remainder of the assets and liabilities represents contracts for which external sources or observable market quotes are not available. These contracts are valued based on various valuation techniques including but not limited to internal models based on a fundamental analysis of the market and extrapolation of observable market data with similar characteristics. Contracts valued with prices provided by models and other valuation techniques make up 6% of derivative assets and 3% of derivative liabilities. The fair value of each contract is discounted using a risk free interest rate. In addition, the Company applies a credit reserve to reflect credit risk, which for foreign exchange contracts and interest rate swaps is calculated utilizing the bilateral method based on published default probabilities. For commodities, to the extent that NRG's net exposure under a specific master agreement is an asset, the Company uses the counterparty's default swap rate. If the exposure under a specific master agreement is a liability, the Company uses NRG's default swap rate. For foreign exchange contracts, interest rate swaps and commodities, the credit reserve is added to the

discounted fair value to reflect the exit price that a market participant would be willing to receive to assume NRG's liabilities or that a market participant would be willing to pay for NRG's assets. As of December 31, 2021 the credit reserve resulted in a \$11 million decrease primarily within cost of operations. As of December 31, 2020 the credit reserve resulted in \$2 million increase primarily within cost of operations.

The fair values in each category reflect the level of forward prices and volatility factors as of December 31, 2021, and may change as a result of changes in these factors. Management uses its best estimates to determine the fair value of commodity and derivative contracts NRG holds and sells. These estimates consider various factors including closing exchange and over-the-counter price quotations, time value, volatility factors and credit exposure. It is possible, however, that future market prices could vary from those used in recording assets and liabilities from energy marketing and trading activities and such variations could be material.

NRG's significant positions classified as Level 3 include physical and financial natural gas and power executed in illiquid markets as well as financial transmission rights, or FTRs. The significant unobservable inputs used in developing fair value include illiquid natural gas and power location pricing which is derived as a basis to liquid locations. The basis spread is based on observable market data when available or derived from historic prices and forward market prices from similar observable markets when not available. For FTRs, NRG uses the most recent auction prices to derive the fair value.

The following tables quantify the significant unobservable inputs used in developing the fair value of the Company's Level 3 positions as of December 31, 2021 and 2020:

Significant Unobservable Inputs								
December 31, 2021								
(In millions)	Fair Value			Valuation Technique	Significant Unobservable Input	Input/Range		Weighted Average
	Assets	Liabilities				Low	High	
Natural Gas Contracts	\$ 16	\$ 1		Discounted Cash Flow	Forward Market Price (per MMBtu)	\$ 3	\$ 40	\$ 15
Power Contracts	392	121		Discounted Cash Flow	Forward Market Price (per MWh)	3	212	35
FTRs	49	42		Discounted Cash Flow	Auction Prices (per MWh)	(122)	43	0
	<u>\$ 457</u>	<u>\$ 164</u>						

Significant Unobservable Inputs								
December 31, 2020								
(In millions)	Fair Value			Valuation Technique	Significant Unobservable Input	Input/Range		Weighted Average
	Assets	Liabilities				Low	High	
Power Contracts	\$ 111	\$ 143		Discounted Cash Flow	Forward Market Price (per MWh)	\$ 10	\$ 105	\$ 21
FTRs	28	12		Discounted Cash Flow	Auction Prices (per MWh)	(28)	43	0
	<u>\$ 139</u>	<u>\$ 155</u>						

The following table provides sensitivity of fair value measurements to increases/(decreases) in significant unobservable inputs as of December 31, 2021 and 2020:

Significant Unobservable Input	Position	Change In Input	Impact on Fair Value Measurement
Forward Market Price Natural Gas/ Power	Buy	Increase/(Decrease)	Higher/(Lower)
Forward Market Price Natural Gas/Power	Sell	Increase/(Decrease)	Lower/(Higher)
FTR Prices	Buy	Increase/(Decrease)	Higher/(Lower)
FTR Prices	Sell	Increase/(Decrease)	Lower/(Higher)

Under the guidance of ASC 815, entities may choose to offset cash collateral posted or received against the fair value of derivative positions executed with the same counterparties under the same master netting agreements. The Company has chosen not to offset positions as defined in ASC 815. As of December 31, 2021, the Company recorded \$291 million of cash collateral posted and \$845 million of cash collateral received on its balance sheet.

Concentration of Credit Risk

In addition to the credit risk discussion as disclosed in Note 2, *Summary of Significant Accounting Policies*, the following item is a discussion of the concentration of credit risk for the Company's financial instruments. Credit risk relates to the risk of loss resulting from non-performance or non-payment by counterparties pursuant to the terms of their contractual obligations. The Company monitors and manages credit risk through credit policies that include: (i) an established credit approval process; (ii) a daily monitoring of counterparties' credit limits; (iii) the use of credit mitigation measures such as margin, collateral, prepayment arrangements, or volumetric limits; (iv) the use of payment netting agreements; and (v) the use of master netting agreements that allow for the netting of positive and negative exposures of various contracts associated with a single counterparty. Risks surrounding counterparty performance and credit could ultimately impact the amount and timing of expected cash flows. The Company seeks to mitigate counterparty risk by having a diversified portfolio of counterparties. The Company also has credit protection within various agreements to call on additional collateral support if and when necessary. Cash margin is collected and held at the Company to cover the credit risk of the counterparty until positions settle.

Counterparty Credit Risk

As of December 31, 2021, counterparty credit exposure, excluding credit exposure from RTOs, ISOs, and registered commodity exchanges and certain long-term agreements, was \$2.2 billion and NRG held collateral (cash and letters of credit) against those positions of \$598 million, resulting in a net exposure of \$1.6 billion. NRG periodically receives collateral from counterparties in excess of their exposure. Collateral amounts shown include such excess while net exposure shown excludes excess collateral received. Approximately 87% of the Company's exposure before collateral is expected to roll off by the end of 2023. Counterparty credit exposure is valued through observable market quotes and discounted at a risk free interest rate. The following tables highlight net counterparty credit exposure by industry sector and by counterparty credit quality. Net counterparty credit exposure is defined as the aggregate net asset position for NRG with counterparties where netting is permitted under the enabling agreement and includes all cash flow, mark-to-market and NPNS, and non-derivative transactions. The exposure is shown net of collateral held, and includes amounts net of receivables or payables.

Category	Net Exposure ^{(a) (b)} (% of Total)
Utilities, energy merchants, marketers and other	67 %
Financial institutions	33
Total	100 %

Category	Net Exposure ^{(a) (b)} (% of Total)
Investment grade	55 %
Non-Investment grade/Non-Rated	45
Total	100 %

(a) Counterparty credit exposure excludes uranium and coal transportation contracts because of the unavailability of market prices

(b) The figures in the tables above exclude potential counterparty credit exposure related to RTOs, ISOs, registered commodity exchanges and certain long term contracts

The Company currently has no exposure to wholesale counterparties in excess of 10% of the total net exposure discussed above as of December 31, 2021. Changes in hedge positions and market prices will affect credit exposure and counterparty concentration.

During Winter Storm Uri, the Company experienced nonperformance by a counterparty in one of its bilateral financial hedging transactions, resulting in exposure of \$403 million. The Company is pursuing all means available to enforce its rights under this transaction but, given the size of the exposure, cannot determine with certainty what the amount of its ultimate recovery will be. The full exposure was recorded as a provision for credit losses during the year ended December 31, 2021.

RTOs and ISOs

The Company participates in the organized markets of CAISO, ERCOT, ISO-NE, MISO, NYISO and PJM, known as RTOs or ISOs. Trading in these markets is approved by FERC, or in the case of ERCOT, approved by the PUCT and includes credit policies that, under certain circumstances, require that losses arising from the default of one member on spot market transactions be shared by the remaining participants. As a result, the counterparty credit risk to these markets is limited to NRG's share of overall market and are excluded from the above exposures.

Exchange Traded Transactions

The Company enters into commodity transactions on registered exchanges, notably ICE, NYMEX and Nodal. These clearinghouses act as the counterparty and transactions are subject to extensive collateral and margining requirements. As a result, these commodity transactions have limited counterparty credit risk.

Long-Term Contracts

Counterparty credit exposure described above excludes credit risk exposure under certain long term contracts, primarily solar PPAs. As external sources or observable market quotes are not available to estimate such exposure, the Company values these contracts based on various techniques including, but not limited to, internal models based on a fundamental analysis of the market and extrapolation of observable market data with similar characteristics. Based on these valuation techniques, as of December 31, 2021, aggregate credit risk exposure managed by NRG to these counterparties was approximately \$1.1 billion for the next five years.

Retail Customer Credit Risk

The Company is exposed to retail credit risk through the Company's retail electricity and gas providers, which serve Home and Business customers. Retail credit risk results in losses when a customer fails to pay for services rendered. The losses may result from both nonpayment of customer accounts receivable and the loss of in-the-money forward value. The Company manages retail credit risk through the use of established credit policies that include monitoring of the portfolio and the use of credit mitigation measures such as deposits or prepayment arrangements.

As of December 31, 2021, the Company's retail customer credit exposure to Home and Business customers was diversified across many customers and various industries, as well as government entities. The Company is also subject to risk with respect to its residential solar customers. The Company's provision for credit losses was \$698 million, \$108 million, and \$95 million for the years ending December 31, 2021, 2020, and 2019, respectively. As a result of Winter Storm Uri, the Company incurred additional credit losses from Business customers primarily due to a segment of customers whose contracts included a pass through of wholesale power prices which were significantly escalated during the storm and from customers who failed to meet their obligations in ERCOT load curtailment programs.

Note 6 — Accounting for Derivative Instruments and Hedging Activities

ASC 815 requires the Company to recognize all derivative instruments on the balance sheet as either assets or liabilities and to measure them at fair value each reporting period unless they qualify for a NPNS exception. The Company may elect to designate certain derivatives as cash flow hedges, if certain conditions are met, and defer the change in fair value of the derivatives to accumulated OCI, until the hedged transactions occur and are recognized in earnings.

For derivatives that are not designated as cash flow hedges or do not qualify for hedge accounting treatment, the changes in the fair value will be immediately recognized in earnings. Certain derivative instruments may qualify for the NPNS exception and are therefore exempt from fair value accounting treatment. ASC 815 applies to NRG's energy related commodity contracts, foreign exchange contracts, and interest rate swaps.

As the Company engages principally in the trading and marketing of its generation assets and retail operations, some of NRG's commercial activities qualify for NPNS accounting. Most of the retail load contracts either qualify for the NPNS exception or fail to meet the criteria for a derivative and the majority of the retail supply and fuels supply contracts are recorded under mark-to-market accounting. All of NRG's hedging and trading activities are subject to limits within the Company's Risk Management Policy.

Energy-Related Commodities

To manage the commodity price risk associated with the Company's competitive supply activities and the price risk associated with wholesale power sales from the Company's electric generation facilities and retail power and gas sales from NRG's retail operations, NRG enters into a variety of derivative and non-derivative hedging instruments, utilizing the following:

- Forward contracts, which commit NRG to purchase or sell energy commodities or fuels in the future;
- Futures contracts, which are exchange-traded standardized commitments to purchase or sell a commodity or financial instrument;
- Swap agreements, which require payments to or from counterparties based upon the differential between two prices for a predetermined contractual, or notional, quantity;
- Option contracts, which convey to the option holder the right but not the obligation to purchase or sell a commodity;
- Extendable swaps, which include a combination of swaps and options executed simultaneously for different periods. This combination of instruments allows NRG to sell out-year volatility through call options in exchange for natural gas swaps with fixed prices in excess of the market price for natural gas at that time. The above-market swap combined with its later-year call option are priced in aggregate at market at the trade's inception; and
- Weather derivative products used to mitigate a portion of lost revenue due to weather.

The objectives for entering into derivative contracts designated as hedges include:

- Fixing the price of a portion of anticipated power and gas purchases for the Company's retail sales;
- Fixing the price for a portion of anticipated future electricity sales that provides an acceptable return on the Company's electric generation operations; and
- Fixing the price of a portion of anticipated fuel purchases for the operation of the Company's power plants.

These contracts are recognized on the balance sheet at fair value and changes in the fair value of these derivative financial instruments are recognized in earnings.

As of December 31, 2021, NRG's derivative assets and liabilities consisted primarily of the following:

- Forward and financial contracts for the purchase/sale of electricity and related products economically hedging NRG's generation assets' forecasted output or NRG's retail load obligations through 2036;
- Forward and financial contracts for the purchase of fuel commodities relating to the forecasted usage of NRG's generation assets through 2024;
- Other energy derivatives instruments extending through 2029.

Also, as of December 31, 2021, NRG had other energy-related contracts that did not meet the definition of a derivative instrument or qualified for the NPNS exception and were therefore exempt from fair value accounting treatment as follows:

- Load-following forward electric sale contracts extending through 2036;
- Load-following forward natural gas sale contracts extending through 2032;
- Power tolling contracts through 2038;
- Coal purchase contracts through 2023;
- Power transmission contracts through 2025;
- Natural gas transportation contracts through 2034;
- Natural gas storage agreements through 2025; and
- Coal transportation contracts through 2029.

Interest Rate Swaps

During the fourth quarter of 2020, NRG entered into \$1.6 billion of interest rate hedges associated with anticipated certain financing needs. As of December 31, 2020, the interest rate hedges were settled in connection with the issuance of fixed rate debt, resulting in a gain of \$11 million that was recorded as a reduction to interest expense.

Foreign Exchange Contracts

In order to mitigate foreign exchange risk primarily associated with the purchase of USD denominated natural gas for the Company's Canadian business, NRG enters into foreign exchange contract agreements through 2025.

Volumetric Underlying Derivative Transactions

The following table summarizes the net notional volume buy/(sell) of NRG's open derivative transactions broken out by commodity, excluding those derivatives that qualified for the NPNS exception as of December 31, 2021 and 2020. Option contracts are reflected using delta volume. Delta volume equals the notional volume of an option adjusted for the probability that the option will be in-the-money at its expiration date.

(In millions)	Commodity	Units	Total Volume	
			December 31, 2021	December 31, 2020
	Emissions	Short Ton	1	1
	Renewables Energy Certificates	Certificates	13	5
	Coal	Short Ton	19	2
	Natural Gas	MMBtu	813	(286)
	Oil	Barrels	1	—
	Power	MWh	185	57
	Capacity	MW/Day	—	(1)
	Foreign Exchange	Dollars	279	—

The increase in positions is primarily the result of Direct Energy acquisition.

Fair Value of Derivative Instruments

The following table summarizes the fair value within the derivative instrument valuation on the balance sheet:

(In millions)	Fair Value			
	Derivative Assets		Derivative Liabilities	
	December 31, 2021	December 31, 2020	December 31, 2021	December 31, 2020
Derivatives Not Designated as Cash Flow or Fair Value Hedges:				
Foreign exchange contracts - current	\$ —	\$ —	\$ 1	\$ —
Foreign exchange contracts - long-term	1	—	—	—
Commodity contracts- current	4,613	560	3,386	499
Commodity contracts- long-term	2,526	261	1,412	385
Total Derivatives Not Designated as Cash Flow or Fair Value Hedges	\$ 7,140	\$ 821	\$ 4,799	\$ 884

The Company has elected to present derivative assets and liabilities on the balance sheet on a trade-by-trade basis and does not offset amounts at the counterparty master agreement level. In addition, collateral received or paid on the Company's derivative assets or liabilities are recorded on a separate line item on the balance sheet. The following table summarizes the offsetting derivatives by counterparty master agreement level and collateral received or paid:

(In millions)	Gross Amounts Not Offset in the Statement of Financial Position			
	Gross Amounts of Recognized Assets/Liabilities	Derivative Instruments	Cash Collateral (Held)/Posted	Net Amount
As of December 31, 2021				
Foreign exchange contracts:				
Derivative assets	\$ 1	\$ (1)	\$ —	\$ —
Derivative liabilities	(1)	1	—	—
Total foreign exchange contracts	\$ —	\$ —	\$ —	\$ —
Commodity contracts:				
Derivative assets	\$ 7,139	\$ (4,440)	\$ (831)	\$ 1,868
Derivative liabilities	(4,798)	4,440	17	(341)
Total commodity contracts	\$ 2,341	\$ —	\$ (814)	\$ 1,527
Total derivative instruments	\$ 2,341	\$ —	\$ (814)	\$ 1,527

Gross Amounts Not Offset in the Statement of Financial Position

(In millions)	Gross Amounts of Recognized Assets/ Liabilities	Derivative Instruments	Cash Collateral (Held)/Posted	Net Amount
As of December 31, 2020				
Commodity contracts:				
Derivative assets	\$ 821	\$ (658)	\$ (5)	\$ 158
Derivative liabilities	(884)	658	—	(226)
Total commodity contracts	\$ (63)	\$ —	\$ (5)	\$ (68)

Impact of Derivative Instruments on the Statement of Operations

Unrealized gains and losses associated with changes in the fair value of derivative instruments not accounted for as cash flow hedges are reflected in current period results of operations.

The following table summarizes the pre-tax effects of economic hedges that have not been designated as cash flow hedges or fair value hedges and trading activity on the Company's statement of operations. The effect of foreign exchange and commodity hedges is included within operating revenues and cost of operations and the effect of interest rate hedges is included in interest expense.

(In millions)	Year Ended December 31,		
	2021	2020	2019
Unrealized mark-to-market results			
Reversal of previously recognized unrealized (gains) on settled positions related to economic hedges	\$ (41)	\$ (55)	\$ (68)
Reversal of acquired loss positions related to economic hedges	256	4	6
Net unrealized gains/(losses) on open positions related to economic hedges	2,501	(68)	42
Total unrealized mark-to-market gains/(losses) for economic hedging activities ..	2,716	(119)	(20)
Reversal of previously recognized unrealized (gains) on settled positions related to trading activity	(18)	(20)	(11)
Reversal of acquired (gain) positions related to trading activity	(1)	—	—
Net unrealized (losses)/gains on open positions related to trading activity	(13)	15	31
Total unrealized mark-to-market (losses)/gains for trading activity	(32)	(5)	20
Total unrealized gains/(losses)	\$ 2,684	\$ (124)	\$ —

(In millions)	Year Ended December 31,		
	2021	2020	2019
Unrealized (losses)/gains included in operating - commodities	\$ (196)	\$ 90	\$ 53
Unrealized gains/(losses) included in cost of operations- commodities	2,880	(214)	(53)
Total impact to statement of operations- commodities	\$ 2,684	\$ (124)	\$ —
Total impact to statement of operations — interest rate contracts	\$ —	\$ —	\$ (38)

The reversals of acquired loss/(gain) positions were valued based upon the forward prices on the acquisition date. The roll-off amounts were offset by realized gains or losses at the settled prices and are reflected in revenue or cost of operations during the same period.

The gain from open economic hedge positions of \$2.5 billion for the year ended December 31, 2021 was primarily the result of an increase in value of forward positions as a result of increases in natural gas and power prices.

The loss from open economic hedge positions of \$68 million for the year ended December 31, 2020 was primarily the result of a decrease in the value of forward positions as a result of decreases in ERCOT power prices and heat rate contraction, partially offset by an increase in value of forward positions as a result of decreases in New York capacity prices.

The gain from open economic hedge positions of \$42 million for the year ended December 31, 2019 was primarily the result of an increase in the value of forward purchases of ERCOT heat rate contracts due to ERCOT heat rate expansion.

Credit Risk Related Contingent Features

Certain of the Company's hedging and trading agreements contain provisions that entitle the counterparty to demand that the Company post additional collateral if the counterparty determines that there has been deterioration in the Company's credit quality, generally termed "adequate assurance" under the agreements, or require the Company to post additional collateral if there were a downgrade in the Company's credit rating. In addition, as a result of the acquisition of Direct Energy from Centrica, certain of the Company's agreements as of December 31, 2021, were still supported by credit support posted by Centrica, and as a result could require the Company to post collateral upon a deterioration or downgrade of Centrica. The collateral potentially required for contracts with adequate assurance clauses that are in net liability positions as of December 31, 2021 was \$1.0 billion. The Company is also a party to certain marginable agreements under which it has a net liability position, but the counterparty has not called for the collateral due, which was approximately \$70 million as of December 31, 2021. In the event of a downgrade in the Company's credit rating and if called for by the counterparty, \$1 million of additional collateral would be required for all contracts with credit rating contingent features as of December 31, 2021.

See Note 5, *Fair Value of Financial Instruments*, for discussion regarding concentration of credit risk.

Note 7 — Nuclear Decommissioning Trust Fund

NRG's Nuclear Decommissioning Trust Fund assets, which are for the decommissioning of STP, are comprised of securities classified as available-for-sale and recorded at fair value based on actively quoted market prices. Although NRG is responsible for managing the decommissioning of its 44% interest in STP, the predecessor utilities that owned STP are authorized by the PUCT to collect decommissioning funds from their ratepayers to cover decommissioning costs on behalf of NRG. NRC requirements determine the decommissioning cost estimate which is the minimum required level of funding. In the event that funds from the ratepayers that accumulate in the nuclear decommissioning trust are ultimately determined to be inadequate to decommission the STP facilities, the utilities will be required to collect through rates charged to rate payers all additional amounts, with no obligation from NRG, provided that NRG has complied with PUCT rules and regulations regarding decommissioning trusts. Following completion of the decommissioning, if surplus funds remain in the decommissioning trusts, any excess will be refunded to the respective ratepayers of the utilities.

NRG accounts for the Nuclear Decommissioning Trust Fund in accordance with ASC 980, *Regulated Operations*, or ASC 980, because the Company's nuclear decommissioning activities are subject to approval by the PUCT, with regulated rates that are designed to recover all decommissioning costs and that can be charged to and collected from the ratepayers per PUCT mandate. Since the Company is in compliance with PUCT rules and regulations regarding decommissioning trusts and the cost of decommissioning is the responsibility of the Texas ratepayers, not NRG, all realized and unrealized gains or losses (including other-than-temporary impairments) related to the Nuclear Decommissioning Trust Fund are recorded to the Nuclear Decommissioning Trust liability and are not included in net income or accumulated other comprehensive income, consistent with regulatory treatment.

The following table summarizes the aggregate fair values and unrealized gains and losses for the securities held in the trust funds, as well as information about the contractual maturities of those securities.

(In millions, except otherwise noted)	As of December 31, 2021				As of December 31, 2020			
	Fair Value	Unrealized Gains	Unrealized Losses	Weighted-average maturities (in years)	Fair Value	Unrealized Gains	Unrealized Losses	Weighted-average maturities (in years)
Cash and cash equivalents	\$ 33	\$ —	\$ —	—	\$ 23	\$ —	\$ —	—
U.S. government and federal agency obligations	112	5	1	10	70	6	—	10
Federal agency mortgage-backed securities	100	2	—	25	89	4	—	24
Commercial mortgage-backed securities	44	1	—	27	36	2	—	27
Corporate debt securities	122	7	1	14	144	13	—	12
Equity securities	593	456	—	—	521	372	—	—
Foreign government fixed income securities	4	—	—	13	7	1	—	10
Total	<u>\$ 1,008</u>	<u>\$ 471</u>	<u>\$ 2</u>		<u>\$ 890</u>	<u>\$ 398</u>	<u>\$ —</u>	

The following table summarizes proceeds from sales of available-for-sale securities and the related realized gains and losses from these sales. The cost of securities sold is determined using the specific identification method.

(In millions)	Year Ended December 31,		
	2021	2020	2019
Realized gains	\$ 47	\$ 34	\$ 18
Realized (losses)	(9)	(13)	(9)
Proceeds from sale of securities	710	439	381

Note 8 — Inventory

Inventory consisted of:

(In millions)	As of December 31,	
	2021	2020
Fuel oil	\$ 8	\$ 37
Coal	83	73
Natural gas	206	22
Spare parts and finished goods	201	195
Total Inventory	\$ 498	\$ 327

The Company recorded a \$29 million lower of weighted average cost or market adjustment related to fuel oil during the year ended December 31, 2020.

Note 9 — Property, Plant and Equipment

The Company's major classes of property, plant, and equipment were as follows:

(In millions)	As of December 31,		Depreciable Lives
	2021	2020	
Facilities and equipment	\$ 1,742	\$ 3,365	1-40 years
Land and improvements	271	329	
Nuclear fuel	222	239	5 years
Hardware and office equipment and furnishings	637	453	2-10 years
Construction in progress	124	97	
Total property, plant, and equipment	2,996	4,483	
Accumulated depreciation	(1,308)	(1,936)	
Net property, plant, and equipment	\$ 1,688	\$ 2,547	

The Company recorded long-lived asset impairments during the years ended December 31, 2021 and 2020, as further described in Note 11, *Asset Impairments*. Depreciation expense of property, plant and equipment recorded during the years ended December 31, 2021, 2020 and 2019 was \$384 million, \$295 million and \$271 million, respectively.

Note 10 — Leases

The Company leases generating facilities, land, office and equipment, railcars, fleet vehicles and storefront space at retail stores. Operating leases with an initial term greater than twelve months are recognized as right-of-use assets and lease liabilities in the consolidated balance sheets. The Company made an accounting policy election, as permitted by ASC 842, for all asset classes not to recognize right-of-use assets and lease liabilities in the consolidated balance sheets for its short-term leases, which are leases that have a lease term of twelve months or less. For the initial measurement of lease liabilities, the discount rate that the Company uses is either the rate implicit in the lease, if known, or its incremental borrowing rate, which is the rate of interest that the Company would have to pay to borrow, on a collateralized basis, over a similar term an amount equal to the payments for the lease. The Company recognizes lease expense for all operating leases on a straight-line basis over the lease term. In the future, should another systematic basis become more representative of the pattern in which the lessee expects to consume the remaining economic benefit of the right-of-use asset, the Company will use that basis for lease expense.

The Company considers a contract to be or to contain a lease when both of the following conditions apply: 1) an asset is either explicitly or implicitly identified in the contract and 2) the contract conveys to the Company the right to control the use of the identified asset for a period of time. The Company has the right to control the use of the identified asset when the Company

has both the right to obtain substantially all the economic benefits from the use of the identified asset and the right to direct how and for what purpose the identified asset is used throughout the period of use.

Lease payments are typically fixed and payable on a monthly, quarterly, semi-annual or annual basis. Lease payments under certain agreements may escalate over the lease term either by a fixed percentage or a fixed dollar amount. Certain leases may provide for variable lease payments in the form of payments based on usage, a percentage of sales from the location under lease, or index-based (e.g., the U.S. Consumer Price Index) adjustments to lease payments. The Company has no leases which contain residual value guarantees provided by the Company as a lessee.

As described in Note 4, *Acquisitions, Discontinued Operations and Dispositions*, upon the close of the South Central Portfolio sale in 2019, the Company entered into an agreement to leaseback the Cottonwood facility through May 2025. The lease was accounted for in accordance with ASC 842-40, *Sale and Leaseback Transactions*, as an operating lease and accordingly, a right-of-use asset and lease liability were established on the lease commencement date and will be amortized through the end of the lease.

Lease Cost:

(In millions)	For the Year Ended December 31,		
	2021	2020	2019
Finance lease cost	\$ 4	\$ 3	\$ —
Operating lease cost	91	100	109
Short-term lease cost	3	3	3
Variable lease cost	9	6	6
Sublease income	(2)	(17)	(17)
Total lease cost	\$ 105	\$ 95	\$ 101

Other information:

(In millions)	For the Year Ended December 31,		
	2021	2020	2019
Cash paid for amounts included in the measurement of lease liabilities:			
Operating cash flows from operating leases	\$ 102	\$ 101	\$ 104
Financing cash flows from finance leases	6	1	—
Right-of-use assets obtained in exchange for new finance lease liabilities	16	5	—
Right-of-use assets obtained in exchange for new operating lease liabilities	47	4	215

Lease Term and Discount Rate for leases:

	December 31, 2021	December 31, 2020
Finance leases:		
Weighted average remaining lease term (in years)	3.6	1.1
Weighted average discount rate	2.46 %	4.79 %
Operating leases:		
Weighted average remaining lease term (in years)	4.7	5.3
Weighted average discount rate	5.44 %	5.63 %

As of December 31, 2021, annual payments based on the maturities of NRG's operating leases are expected to be as follows:

	In millions
2022	\$ 96
2023	89
2024	76
2025	52
2026	11
Thereafter	48
Total undiscounted lease payments	\$ 372
Less: present value adjustment	(55)
Total discounted lease payments	\$ 317

Note 11 — Asset Impairments

2021 Impairment Losses

During the fourth quarter of 2021, the Company completed its annual budget and analyzed the corresponding impact on estimated cash flows associated with its long-lived assets. The fair value of the assets was determined using an income approach by applying a discounted cash flow methodology to the long-term budget for the facility. The income approach utilized estimates of after-tax cash flows, which were Level 3 fair value measurements, and included key inputs such as forecasted power prices, fuel costs, operating and maintenance costs, plant investment capital expenditures and discount rates.

Joliet — The Company recognized an impairment loss of \$213 million in the East segment as a result of changes in the long-term outlook of the Joliet facility prompted by market conditions and an assessment of various alternatives for the long-term operational landscape of the facility including the impact of the CEJA in Illinois, which concluded with the annual budget process.

Other Impairments — The Company additionally recorded impairment losses of \$16 million and \$9 million related to various power plants in the East and West/Service/Other segments, respectively.

The Company also recorded the following impairment in 2021 based on a specific triggering event that occurred using the same methodology previously discussed:

PJM Asset Impairments — During the second quarter of 2021, the results of the PJM Base Residual Auction for the 2022/2023 delivery year were released leading the Company to announce the near-term retirement of a significant portion of its PJM coal generating assets in June 2022. The Company considered the decline in PJM capacity prices and the near-term retirement dates of certain assets to be a trigger for impairment and performed impairment tests on the PJM generating assets and the goodwill associated with Midwest Generation. Impairment losses of \$271 million and \$35 million were recorded in the East segment on the PJM generating assets and Midwest Generation goodwill, respectively.

2020 Impairment Losses

During the fourth quarter of 2020, the Company completed its annual budget and revised its view of long-term power and fuel prices and the corresponding impact on estimated cash flows associated with its long-lived assets. The Cottonwood facility had estimated cash flows that were lower than its carrying amount and the assets were considered impaired. The fair value of the assets was determined using an income approach by applying a discounted cash flow methodology to the long-term budget for the facility. The income approach utilized estimates of after-tax cash flows, which were Level 3 fair value measurements, and included key inputs such as forecasted power prices, fuel costs, operating and maintenance costs, plant investment capital expenditures and discount rates.

The Cottonwood facility is being leased through 2025 and the Company recognized an impairment loss of \$32 million in 2020 in the West/Services/Other segment associated with the Company's long-term services agreement and related lease payments, as the carrying amounts of the assets from the contract were higher than the estimated operating cash flow through the remaining lease period.

The Company also recorded the following impairments in 2020 based on specific triggering events that occurred:

Home Solar — In the third quarter of 2020, the Company concluded its Home Solar business was held for sale and recorded an impairment loss of \$29 million in the West/Services/Other segment to adjust the carrying amount of the assets and liabilities to fair market value based on indicative sale prices.

Petra Nova Parish Holdings — During the first quarter of 2020, due to the decline in oil prices, NRG determined that the carrying amount of the Company's equity method investment exceeded the fair value of the investment and that the decline is considered to be other-than-temporary. In determining the fair value, the Company utilized an income approach to estimate future project cash flows. The Company recorded an impairment loss of \$18 million in the Texas segment, which included the anticipated drawdown of the \$12 million letter of credit posted in September 2019 to cover certain project debt reserve requirements.

Other Impairments — For the year ended December 31, 2020, the Company recorded \$14 million of impairment losses related to intangible assets in the Texas segment.

2019 Impairment Losses

Petra Nova Parish Holdings — During the third quarter of 2019, NRG contributed \$95 million in cash to Petra Nova and posted a \$12 million letter of credit to cover certain project debt reserve requirements. The cash portion of the contribution was used by Petra Nova to prepay a significant portion of the project debt. As a result, the previously disclosed guarantee of up to \$124 million related to the project level debt provided by NRG was canceled and the remaining project debt became non-recourse to NRG. In relation to this contribution, the Company evaluated the project for impairment and determined that the carrying amount of the Company's equity method investment exceeded the fair value of the investment and that the decline is considered to be other-than-temporary. In determining the fair value, the Company utilized an income approach and considered project specific assumptions for the estimated future project cash flows. The Company measured the impairment loss as the difference between the carrying amount and the fair value of the investment and recorded an impairment loss of \$101 million.

Other Impairments — For the year ended December 31, 2019, the Company recorded \$12 million of impairment losses primarily related to investments and intangibles.

Note 12 — Goodwill and Other Intangibles

Goodwill

The table below presents the changes of goodwill for the year ended December 31, 2021 based on the Company's reportable segments. Goodwill did not change during the year ended December 31, 2020.

(in millions)	Texas	East	West/Services/ Other	Total
Balance as of January 1, 2021	\$ 324	\$ 240	\$ 15	\$ 579
Goodwill resulted from the acquisition of Direct Energy	427	648	175	1,250
Impairment losses	—	(35)	—	(35)
Foreign currency translation	—	—	1	1
Balance as of December 31, 2021	\$ 751	\$ 853	\$ 191	\$ 1,795

Intangible Assets

The Company's intangible assets as of December 31, 2021, primarily reflect intangible assets established with the acquisitions of various companies, including Direct Energy, Stream Energy, other retail acquisitions, and Texas Genco. Intangible assets are comprised of the following:

- *Emission Allowances* — These intangibles primarily consist of SO₂ emission allowances, including those established with the 2006 acquisition of Texas Genco, RGGI emission credits and California carbon allowances. These emission allowances are held-for-use and are amortized to cost of operations based on units of production.
- *Customer and supply contracts* — These intangibles include the fair value at the acquisition date of in-market and out-of-market customer and supply contracts from the acquisition of Direct Energy and are amortized to revenue and cost of operations, respectively, based upon the fair market value, as of the acquisition date, for each delivery month. It also included energy supply contracts acquired with Stream Energy that represent the fair value at the acquisition date of in-market contracts for the purchase of energy to serve retail electric customers and are amortized based on the expected delivery under the respective contracts.
- *Customer relationships* — These intangibles represent the fair value at the acquisition date of acquired businesses' customer base from the acquisition of Direct Energy and other acquisitions. The customer relationships are amortized to depreciation and amortization expense based on the expected discounted future net cash flows by year.
- *Marketing partnerships* — These intangibles represent the fair value at the acquisition date of existing agreements with marketing vendors and loyalty and affinity partners for customer acquisition. The marketing partnerships are amortized to depreciation and amortization expense based on the expected discounted future net cash flows by year.
- *Trade names* — These intangibles are amortized to depreciation and amortization expense on a straight-line basis.

- *Other* — These intangibles primarily include renewable energy credits. Renewable energy credits are retired, as required, for the applicable compliance period. They are expensed to cost of operations based on NRG's customer usage. It also includes in-market nuclear fuel contracts established from the Texas Genco acquisition in 2006 which are amortized to cost of operations over expected volumes over the life of each contract, costs to extend the operating license for STP Units 1 and 2 and intellectual property related to Goal Zero which are amortized to depreciation and amortization expense.

The following tables summarize the components of NRG's intangible assets:

(In millions)

Year Ended December 31, 2021	Emission Allowances	Customer and Supply Contracts	Customer Relationships	Marketing Partnerships	Trade Names	Other^(b)	Total
January 1, 2021	\$ 672	\$ 28	\$ 527	\$ 285	\$ 373	\$ 140	\$ 2,025
Purchases	10	—	—	—	—	338	348
Acquisition of businesses ^(a)	—	610	1,308	—	310	124	2,352
Usage/Sales/Retirements	(1)	—	—	—	—	(364)	(365)
Write-off of fully amortized balances	(51)	—	(158)	—	—	(7)	(216)
Other	4	—	2	(1)	—	(2)	3
December 31, 2021	634	638	1,679	284	683	229	4,147
Less accumulated amortization	(536)	(94)	(518)	(123)	(294)	(71)	(1,636)
Net carrying amount	<u>\$ 98</u>	<u>\$ 544</u>	<u>\$ 1,161</u>	<u>\$ 161</u>	<u>\$ 389</u>	<u>\$ 158</u>	<u>\$ 2,511</u>

(a) The weighted average life of total acquired amortizable intangibles from the Direct Energy acquisition was 12 years, see Note 4 — *Acquisitions, Discontinued Operations and Dispositions* for weighted average life of acquired amortizable intangibles for each intangible asset type

(b) RECs are not subject to amortization and had a carrying value of \$123 million

(In millions)

Year Ended December 31, 2020	Emission Allowances	Customer and Supply Contracts	Customer Relationships	Marketing Partnerships	Trade Names	Other^(b)	Total
January 1, 2020	\$ 662	\$ 28	\$ 573	\$ 285	\$ 373	\$ 130	\$ 2,051
Purchases	25	—	—	—	—	45	70
Acquisition of businesses ^(a)	—	—	22	—	—	—	22
Usage/Retirements	—	—	—	—	—	(35)	(35)
Write-off of fully amortized balances	(4)	—	(70)	—	—	—	(74)
Impairment	(14)	—	—	—	—	—	(14)
Other	3	—	2	—	—	—	5
December 31, 2020	672	28	527	285	373	140	2,025
Less accumulated amortization	(563)	(28)	(349)	(99)	(247)	(71)	(1,357)
Net carrying amount	<u>\$ 109</u>	<u>\$ —</u>	<u>\$ 178</u>	<u>\$ 186</u>	<u>\$ 126</u>	<u>\$ 69</u>	<u>\$ 668</u>

(a) The weighted average life of acquired intangibles was 5 years for customer relationships

(b) RECs are not subject to amortization and had a carrying value of \$28 million

The following table presents NRG's amortization of intangible assets for each of the past three years:

(In millions)	Years Ended December 31,		
	2021	2020	2019
Emission allowances	\$ 24	\$ 28	\$ 32
Customer and supply contracts	66	12	14
Customer relationships	327	74	44
Marketing partnerships	24	24	15
Trade names	47	27	25
Other ^(a)	7	3	4
Total amortization	<u>\$ 495</u>	<u>\$ 168</u>	<u>\$ 134</u>

(a) For the years ended December 31, 2021, 2020 and 2019, other intangibles were amortized to depreciation and amortization expense for \$3 million, \$3 million and \$4 million, respectively

The following table presents estimated amortization of NRG's intangible assets as of December 31, 2021 for each of the next five years:

(In millions)							
Year Ended December 31,	Emission Allowances	Customer and Supply Contracts	Customer Relationships	Marketing Partnerships	Trade Names	Other	Total
2022	\$ 14	\$ 143	\$ 265	\$ 23	\$ 47	\$ 3	\$ 495
2023	12	120	216	23	46	4	421
2024	12	73	148	23	38	3	297
2025	11	50	110	22	32	4	229
2026	9	52	95	22	24	4	206

Intangible assets held-for-sale — From time to time, management may authorize the transfer from the Company's emission bank of emission allowances held-for-use to intangible assets held-for-sale. Emission allowances held-for-sale are included in other non-current assets on the Company's consolidated balance sheet and are not amortized, but rather expensed as sold. As of December 31, 2021 and 2020, the value of emission allowances held-for-sale was \$15 million and \$14 million, respectively, within the Corporate segment. Once transferred to held-for-sale, these emission allowances are prohibited from moving back to held-for-use.

Note 13 — Long-term Debt and Finance Leases

Long-term debt and finance leases consisted of the following:

(In millions, except rates)	December 31, 2021	December 31, 2020	Interest rate %
Recourse debt:			
Senior Notes, due 2026	\$ —	\$ 1,000	7.250
Senior Notes, due 2027	375	1,230	6.625
Senior Notes, due 2028	821	821	5.750
Senior Notes, due 2029	733	733	5.250
Senior Notes, due 2029	500	500	3.375
Senior Notes, due 2031	1,030	1,030	3.625
Senior Notes, due 2032	1,100	—	3.875
Convertible Senior Notes, due 2048 ^(a)	575	575	2.750
Senior Secured First Lien Notes, due 2024	600	600	3.750
Senior Secured First Lien Notes, due 2025	500	500	2.000
Senior Secured First Lien Notes, due 2027	900	900	2.450
Senior Secured First Lien Notes, due 2029	500	500	4.450
Tax-exempt bonds	466	466	1.250 - 4.750
Subtotal long-term debt (including current maturities)	<u>8,100</u>	<u>8,855</u>	
Finance leases	13	4	various
Subtotal long-term debt and finance leases (including current maturities)	<u>8,113</u>	<u>8,859</u>	
Less current maturities	(4)	(1)	
Less debt issuance costs	(83)	(93)	
Discounts	(60)	(74)	
Total long-term debt and finance leases	<u>\$ 7,966</u>	<u>\$ 8,691</u>	

(a) The effective interest rate was 5.34% and 5.19% for the years ended December 31, 2021 and 2020, respectively. As of the ex-dividend date of January 31, 2022, the Convertible Senior Notes were convertible at a price of \$44.53, which is equivalent to a conversion rate of approximately 22.4563 shares of common stock per \$1,000 principal amount. The remaining period over which the discount on the liability component would have been amortized is 3.7 years. However, the adoption of ASU 2020-06 on January 1, 2022 resulted in the elimination of the debt discount.

Debt includes the following discounts:

(In millions)	As of December 31,	
	2021	2020
Senior Secured First Lien Notes, due 2024, 2025, 2027 and 2029	\$ (2)	\$ (2)
Convertible Senior Notes, due 2048	(58)	(72)
Total discounts	<u>\$ (60)</u>	<u>\$ (74)</u>

Consolidated Annual Maturities

As of December 31, 2021, annual payments based on the maturities of NRG's debt and finance leases are expected to be as follows:

	(In millions)
2022	\$ 4
2023	3
2024	603
2025	502
2026	—
Thereafter	7,001
Total	<u>\$ 8,113</u>

Senior Notes

Issuance of 2032 Senior Notes

On August 23, 2021, the Company issued \$1.1 billion of aggregate principal amount of 3.875% senior notes due 2032. The 2032 Senior Notes are senior unsecured obligations of NRG and are guaranteed by certain of its subsidiaries. Interest is paid semi-annually beginning on February 15, 2022 until the maturity date of February 15, 2032. The 2032 Senior Notes were issued under NRG's Sustainability-Linked Bond Framework, which sets out certain sustainability targets, including reducing greenhouse gas emissions. Failure to meet such sustainability targets will result in a 25 basis point increase to the interest rate payable on the 2032 Senior Notes from and including August 15, 2026. The proceeds of the 2032 Senior Notes, along with cash on hand, were used to fund the redemption of \$1.0 billion aggregate principal amount of the 7.250% Senior Notes due 2026 and \$355 million aggregate principal amounts of the 6.625% Senior Notes due 2027.

Issuance of 2029 Senior Unsecured Notes and 2031 Senior Unsecured Notes

On December 2, 2020, NRG issued \$500 million aggregate principal amount of 3.375% senior notes due 2029 (the "2029 Unsecured Notes") and \$1.0 billion aggregate principal amount of 3.625% senior notes due 2031 (the "2031 Unsecured Notes" and, together with the 2029 Unsecured Notes, the "Unsecured Notes"). Interest is payable on the Unsecured Notes on February 15 and August 15 of each year beginning on August 15, 2021 until the maturity date of February 15, 2029 for the 2029 Unsecured Notes and February 15, 2031 for the 2031 Unsecured Notes.

Issuance of 2025 and 2027 Senior Secured First Lien Notes

On December 2, 2020, NRG issued \$1.4 billion of aggregate principal amount of senior secured first lien notes, consisting of \$500 million 2.000% senior secured first lien notes due 2025 (the "2025 Secured Notes") and \$900 million 2.450% senior secured first lien notes due 2027 (the "2027 Secured Notes" and, together with the 2025 Secured Notes, the "2025 and 2027 Senior Secured First Lien Notes"), at a discount. The 2027 Secured Notes were issued under NRG's Sustainability-Linked Bond Framework, which sets out certain sustainability targets, including reducing greenhouse gas emissions. Failure to meet such sustainability targets will result in a 25 basis point increase to the interest rate payable on the 2027 Secured Notes from and including the interest period ending on June 2, 2026. The 2025 and 2027 Senior Secured First Lien Notes are guaranteed on a first-priority basis by each of NRG's current and future subsidiaries that guarantee indebtedness under its credit agreement. The 2025 and 2027 Senior Secured First Lien Notes are secured by a first priority security interest in the same collateral that is pledged for the benefit of the lenders under NRG's credit agreement, which consists of a substantial portion of the property and assets owned by NRG and the guarantors. The collateral securing the 2025 and 2027 Senior Secured First Lien Notes will be released if the Company obtains an investment grade rating from two out of the three rating agencies, subject to an obligation to reinstate the collateral if such rating agencies withdraw the Company's investment grade rating or downgrade its rating below investment grade. Interest is payable on the 2025 and 2027 Senior Secured First Lien Notes on June 2 and December 2 of each year beginning on June 2, 2021 until the maturity date of December 2, 2025 for the 2025 Secured Notes and December 2, 2027 for the 2027 Secured Notes.

Senior Note Redemptions

During the year ended December 31, 2021, the Company redeemed approximately \$1.9 billion in aggregate principal amount of its Senior Notes for \$1.9 billion using the proceeds of the 2032 Senior Notes and cash on hand, as detailed in the table below. In connection with the redemptions, a \$77 million loss on debt extinguishment was recorded, which included the write-off of previously deferred financing costs of \$12 million.

(In millions, except percentages)	Principal Repurchased	Cash Paid ^(a)	Average Early Redemption Percentage
7.250% Senior Notes, due 2026	\$ 1,000	\$ 1,056	103.625 %
6.625% Senior Notes, due 2027	855	893	103.313 %
Total	\$ 1,855	\$ 1,949	

(a) Includes accrued interest of \$29 million for redemptions for the year ended December 31, 2021

2048 Convertible Senior Notes

The Convertible Senior Notes are accounted for in accordance with ASC 470-20, *Debt with Conversion and Other Options*. Under ASC 470-20, issuers of convertible debt instruments that may be settled in cash upon conversion, including partial cash settlement, are required to separately account for the liability (debt) and equity (conversion option) components. Prior to February 22, 2022, the Convertible Senior Notes were convertible, under certain circumstances, into the Company's common stock, cash or a combination thereof (at NRG's option) at a price of \$44.89 per common share as of December 31, 2021, which is equivalent to a conversion rate of approximately 22.2761 shares of common stock per \$1,000 principal amount

of Convertible Senior Notes. On February 22, 2022, the Company irrevocably elected to eliminate the right to settle conversions only in shares of the Company's common stock, such that any conversion after such date will be settled in cash or a combination of cash and the Company's common stock. As of December 31, 2020, the Convertible Senior Notes were convertible at a price of \$46.24 per common share, which is equivalent to a conversion rate of approximately 21.6242 shares of common stock per \$1,000 principal amount of Convertible Senior Notes. The carrying amounts of the liability components as of December 31, 2021 and 2020 of \$518 million and \$503 million, respectively, were calculated by estimating the fair value of similar liabilities without a conversion feature at inception and amortizing the debt discount using the effective interest rate over the life of the note.

Senior Notes Early Redemption

As of December 31, 2021, NRG had the following outstanding issuances of senior notes with an early redemption feature, or Senior Notes:

- i. 6.625% senior notes, issued August 2, 2016 and due January 15, 2027, or the 2027 Senior Notes;
- ii. 5.750% senior notes, issued December 7, 2017 and due January 15, 2028, or the 2028 Senior Notes;
- iii. 5.250% senior notes, issued May 24, 2019 and due June 15, 2029, or the 2029 Senior Notes;
- iv. 3.375% senior notes, issued December 2, 2020 and due February 15, 2029, or the 3.375% 2029 Senior Notes;
- v. 3.625% senior notes, issued December 2, 2020 and due February 15, 2031, or the 2031 Senior Notes; and
- vi. 3.875% senior notes, issued August 23, 2021 and due February 15, 2032, or the 2032 Senior Notes.

The Company periodically enters into supplemental indentures for the purpose of adding entities under the Senior Notes as guarantors.

The indentures and the forms of notes provide, among other things, that the Senior Notes will be senior unsecured obligations of NRG. The indentures also provide for customary events of default, which include, among others: nonpayment of principal or interest; breach of other agreements in the indentures; defaults in failure to pay certain other indebtedness; the rendering of judgments to pay certain amounts of money against NRG and its subsidiaries; the failure of certain guarantees to be enforceable; and certain events of bankruptcy or insolvency. Generally, if an event of default occurs, the Trustee or the Holders of at least 25% or 30% (depending on the series of Senior Notes) in principal amount of the then outstanding series of Senior Notes may declare all of the Senior Notes of such series to be due and payable immediately. The terms of the indentures, among other things, limit NRG's ability and certain of its subsidiaries' ability to return capital to stockholders, grant liens on assets to lenders and incur additional debt. Interest is payable semi-annually on the Senior Notes until their maturity dates.

2027 Senior Notes

NRG may redeem some or all of the 2027 Senior Notes at redemption prices expressed as percentages of principal amount as set forth in the following table, plus accrued and unpaid interest on the notes redeemed to the first applicable redemption date:

<u>Redemption Period</u>	<u>Redemption Percentage</u>
July 15, 2021 to July 14, 2022	103.313 %
July 15, 2022 to July 14, 2023	102.208 %
July 15, 2023 to July 14, 2024	101.104 %
July 15, 2024 and thereafter	100.000 %

2028 Senior Notes

At any time prior to January 15, 2023, NRG may redeem all or a part of the 2028 Senior Notes, at a redemption price equal to 100% of the principal amount of the notes redeemed, plus accrued and unpaid interest to the redemption date, plus a premium. The premium is the greater of: (i) 1% of the principal amount of the notes; or (ii) the excess of the principal amount of the note over the following: the present value of 102.875% of the note, plus interest payments due on the note from the date of redemption through January 15, 2023 computed using a discount rate equal to the Treasury Rate as of such redemption date plus 50%. In addition, on or after January 15, 2023, NRG may redeem some or all of the notes at redemption prices expressed as percentages of principal amount as set forth in the following table, plus accrued and unpaid interest on the notes redeemed to the first applicable redemption date:

Redemption Period	Redemption Percentage
January 15, 2023 to January 14, 2024	102.875 %
January 15, 2024 to January 14, 2025	101.917 %
January 15, 2025 to January 14, 2026	100.958 %
January 15, 2026 and thereafter	100.000 %

5.250% 2029 Senior Notes

At any time prior to June 15, 2022, NRG may redeem up to 40% of the aggregate principal amount of the 2029 Senior Notes, at a redemption price equal to 105.250% of the principal amount of the notes redeemed, plus accrued and unpaid interest, with an amount equal to the net cash proceeds of certain equity offerings, provided that at least 50% of the aggregate principal amount remains outstanding immediately after the occurrence of such redemption. At any time prior to June 15, 2024, NRG may redeem all or a part of the 2029 Senior Notes, at a redemption price equal to 100% of the principal amount of the notes redeemed, plus accrued and unpaid interest to the redemption date, plus a premium. The premium is the greater of: (i) 1% of the principal amount of the notes; or (ii) the excess of the principal amount of the note over the following: the present value of 102.625% of the note, plus interest payments due on the note through June 15, 2024 (excluding accrued but unpaid interest to the redemption date), computed using a discount rate equal to the Treasury Rate as of such redemption date plus 0.50%. In addition, on or after June 15, 2024, NRG may redeem some or all of the notes at redemption prices expressed as percentages of principal amount as set forth in the following table, plus accrued and unpaid interest on the notes redeemed to the first applicable redemption date:

Redemption Period	Redemption Percentage
June 15, 2024 to June 14, 2025	102.625 %
June 15, 2025 to June 14, 2026	101.750 %
June 15, 2026 to June 14, 2027	100.875 %
June 15, 2027 and thereafter	100.000 %

3.375% 2029 Senior Notes

At any time prior to February 15, 2024, NRG may redeem up to 40% of the aggregate principal amount of the 2029 Senior Notes, at a redemption price equal to 103.375% of the principal amount of the notes redeemed, plus accrued and unpaid interest, with an amount equal to the net cash proceeds of certain equity offerings, provided that at least 50% of the aggregate principal amount remains outstanding immediately after the occurrence of such redemption. At any time prior to February 15, 2024, NRG may redeem all or a part of the 2029 Senior Notes, at a redemption price equal to 100% of the principal amount of the notes redeemed, plus accrued and unpaid interest to the redemption date, plus a premium. The premium is the greater of: (i) 1% of the principal amount of the notes; or (ii) the excess of the principal amount of the note over the following: the present value of 101.688% of the note, plus interest payments due on the note through February 15, 2024 (excluding accrued but unpaid interest to the redemption date), computed using a discount rate equal to the Treasury Rate as of such redemption date plus 0.50%. In addition, on or after February 15, 2024, NRG may redeem some or all of the notes at redemption prices expressed as percentages of principal amount as set forth in the following table, plus accrued and unpaid interest on the notes redeemed to the first applicable redemption date:

Redemption Period	Redemption Percentage
February 15, 2024 to February 14, 2025	101.688 %
February 15, 2025 to February 14, 2026	100.844 %
February 15, 2026 and thereafter	100.000 %

2031 Senior Notes

At any time prior to February 15, 2026, NRG may redeem up to 40% of the aggregate principal amount of the 2031 Senior Notes, at a redemption price equal to 103.625% of the principal amount of the notes redeemed, plus accrued and unpaid interest, with an amount equal to the net cash proceeds of certain equity offerings, provided that at least 50% of the aggregate principal amount remains outstanding immediately after the occurrence of such redemption. At any time prior to February 15, 2026, NRG may redeem all or a part of the 2031 Senior Notes, at a redemption price equal to 100% of the principal amount of the notes redeemed, plus accrued and unpaid interest to the redemption date, plus a premium. The premium is the greater of: (i) 1% of the principal amount of the notes; or (ii) the excess of the principal amount of the note over the following: the present value of 101.813% of the note, plus interest payments due on the note through February 15, 2026 (excluding accrued but unpaid interest to the redemption date), computed using a discount rate equal to the Treasury Rate as of such redemption date plus 0.50%. In addition, on or after February 15, 2026, NRG may redeem some or all of the notes at redemption prices expressed as percentages of principal amount as set forth in the following table, plus accrued and unpaid interest on the notes redeemed to the first applicable redemption date:

Redemption Period	Redemption Percentage
February 15, 2026 to February 14, 2027	101.813 %
February 15, 2027 to February 14, 2028	101.208 %
February 15, 2028 to February 14, 2029	100.604 %
February 15, 2029 and thereafter	100.000 %

2032 Senior Notes

At any time prior to August 15, 2024, NRG may redeem up to 40% of the aggregate principal amount of the 2032 Senior Notes, at a redemption price equal to 103.875% of the principal amount of the notes redeemed, plus accrued and unpaid interest, with an amount equal to the net cash proceeds of certain equity offerings, provided that at least 50% of the aggregate principal amount remains outstanding immediately after the occurrence of such redemption. At any time prior to February 15, 2027, NRG may redeem all or a part of the 2032 Senior Notes, at a redemption price equal to 100% of the principal amount of the notes redeemed, plus accrued and unpaid interest to the redemption date, plus a premium. The premium is the greater of: (i) 1% of the principal amount of the notes; or (ii) the excess of (A) the present value of (1) the redemption price of the note at February 15, 2027 (such redemption price being set forth in the table appearing below in the column “Redemption Percentage (If Sustainability Performance Target has not been satisfied and/or confirmed by External Verifier)” unless the Sustainability Performance Target has been satisfied in respect of the year ended December 31, 2025 and the Company has provided confirmation thereof to the Trustee together with a related confirmation by the External Verifier by the date that is at least 15 days prior to August 15, 2026 in which case the redemption price shall be as set forth in the column “Redemption Percentage (If Sustainability Performance Target has been satisfied and confirmed by External Verifier)”) plus (2) interest payments due on the note through February 15, 2027 (excluding accrued but unpaid interest to the redemption date) computed using a discount rate equal to the Treasury Rate as of such redemption date plus 0.50%, over (B) the principal amount of the note. In addition, on

or after February 15, 2027, NRG may redeem some or all of the notes at redemption prices expressed as percentages of principal amount as set forth in the following table during the twelve-month period beginning on February 15 of the years indicated below, plus accrued and unpaid interest on the notes redeemed to the first applicable redemption date:

<u>Year</u>	Redemption Percentage (If Sustainability Performance Target has been satisfied and confirmed by External Verifier)	Redemption Percentage (If Sustainability Performance Target has not been satisfied and/or confirmed by External Verifier)
2027	101.938 %	102.188 %
2028	101.292 %	101.458 %
2029	100.646 %	100.729 %
2030 and thereafter	100.000 %	100.000 %

Receivables Facility

On September 22, 2020, NRG Receivables LLC, a bankruptcy remote, special purpose, indirect wholly owned subsidiary, entered into the Receivables Facility for an amount up to \$750 million, subject to adjustments on a seasonal basis, with issuers of asset-backed commercial paper and commercial banks (the "Lenders".) The assets of NRG Receivables LLC are first available to satisfy the claims of the Lenders before making payments on the subordinated note and equity issued by NRG Receivables LLC. The assets of NRG Receivables LLC are not available to the Company and its subsidiaries or creditors unless and until distributed by NRG Receivables LLC. Under the Receivables Facility, certain indirect subsidiaries of the Company sell their accounts receivables to NRG Receivables LLC, subject to certain terms and conditions. In turn, NRG Receivables LLC grants a security interest in the purchased receivables to the Lenders as collateral for cash borrowings and issuances of letters of credit. Pursuant to the Performance Guaranty, the Company has guaranteed, for the benefit of NRG Receivables and the Lenders, the payment and performance by each indirect subsidiary of its respective obligations under the Receivables Facility. The accounts receivables remain on the Company's consolidated balance sheet and any amounts funded by the Lenders to NRG Receivables LLC will be reflected as short-term borrowings. Cash flows from the Receivables Facility are reflected as financing activities in the Company's consolidated statements of cash flows. The Company will continue to service the accounts receivables sold in exchange for a servicing fee.

On July 26, 2021, NRG Receivables LLC entered into the First Amendment to the Receivables Facility with a group of conduit lenders and banks and Royal Bank of Canada, as Administrative Agent to, among other things, (i) increase the existing revolving commitments by \$50 million to an aggregate amount of \$800 million, (ii) extend the maturity date until July 26, 2022, (iii) make certain adjustments to the pool of receivables through the Receivables Facility and certain related covenants and (iv) provide for revised language relating to interest determination based on SOFR in case of a LIBOR cessation or the occurrence of certain other trigger events. Borrowings by NRG Receivables LLC under the Receivables Facility bear interest as defined under the Receivables Financing Agreement. The weighted average interest rate related to usage under the Receivables Facility as of December 31, 2021 was 0.646%. As of December 31, 2021, there were no outstanding borrowings and there were \$400 million in letters of credit issued under the Receivables Facility.

Repurchase Facility

On September 22, 2020, the Company entered into the Repurchase Facility related to the Receivables Facility. Under the Repurchase Facility, the Company can borrow up to \$75 million, collateralized by a subordinated note issued by NRG Receivables LLC to NRG Retail LLC in favor of the originating entities representing a portion of the balance of receivables sold to NRG Receivables LLC under the Receivables Facility.

On July 26, 2021, the Company renewed its existing Repurchase Facility to, among other things, (i) extend the maturity date to July 26, 2022 and (ii) provide for revised language relating to interest determination based on SOFR in case of a LIBOR cessation or the occurrence of certain other trigger events. On February 9, 2022, the Company entered into amendments to its existing Repurchase Facility to, among other things, (i) increase the size of the facility from \$75 million to \$150 million and (ii) replace LIBOR with term SOFR as the benchmark for the pricing rate. The Repurchase Facility has no commitment fee and borrowings will be drawn at SOFR + 1.30%. As of December 31, 2021, there were no outstanding borrowings under the Repurchase Facility.

Senior Credit Facility

Revolving Credit Facility Modification

During the third quarter of 2020, the Company amended its existing credit agreement to, among other things, (i) increase the existing revolving commitments in an aggregate amount of \$802 million, and (ii) provide for a new tranche of revolving commitments in an aggregate amount of \$273 million with a maturity date of July 5, 2023. The maturity date of the new revolving tranche of commitments may, upon request by the Company, and at the option of each applicable lender under the

new tranche be extended to May 28, 2024, which is the maturity date of the existing and increased commitments. Other than with respect to the maturity date, the terms of all revolving commitments and loans made pursuant thereto are identical. The increase in the existing commitments, and the commitments with respect to the new tranche were effective on August 20, 2020 and became available on January 5, 2021 upon the closing of the Direct Energy Acquisition. As of December 31, 2021, total revolving commitments available, subject to usage, under the amended credit agreement was \$3.7 billion.

Credit Default Swap Facility

On January 4, 2019, the Company entered into an \$80 million credit agreement to issue letters of credit, which is currently supporting the Cottonwood facility lease. Annual fees of 1.33% on the facility were paid quarterly in advance. On August 13, 2020, the agreement was amended permitting the Company to increase the size of the facility and fees on the facility were adjusted to reflect the costs of the credit default swaps that serve as collateral for the facility. In order to increase the Company's collective collateral facilities in connection with the Direct Energy acquisition, NRG expanded the facility allowing for the issuance of an additional \$150 million of letters of credit as of December 31, 2020. As of December 31, 2021, \$222 million was issued under this facility.

Bilateral Letter of Credit Facilities

In December 2020 the Company entered into a series of Bilateral Letter of Credit Facilities to allow for the issuance of up to \$475 million of letters of credit. These facilities are uncommitted. As of December 31, 2021, \$469 million was issued under these facilities.

Put Option Agreement for Senior Debt Issuance

During the fourth quarter of 2020, the Company entered into a 3-year put option agreement with a Delaware trust formed by the Company upon completion of the sale of \$900 million pre-capitalized trust securities redeemable November 15, 2023 (the "P-Caps"). The Trust invested the proceeds from the sale of the P-Caps in a portfolio of principal and interest strips of U.S. Treasury securities (the "Eligible Treasury Assets"). Under the put option agreement, NRG has the right, from time to time, to issue to the Trust and to require the Trust to purchase from NRG, on one or more occasions (the "Issuance Right"), up to \$900 million aggregate principal amount of NRG's 1.841% Senior Secured First Lien Notes due 2023 (the "P-Caps Secured Notes") in exchange for all or a portion of the Eligible Treasury Assets corresponding to the portion of the Issuance Right. NRG will pay a semi-annual premium to the Trust at a rate of 1.65%.

In connection with the issuance of the P-Caps, on December 11, 2020, NRG entered into an amended and restated facility agreement for the issuance of letters of credit (the "LC Agreement") with Deutsche Bank Trust Company Americas as collateral agent (the "Collateral Agent") and administrative agent pursuant to which certain financial institutions (the "LC Issuers") have agreed to provide letters of credit in an aggregate amount not to exceed \$874 million to support the operations of NRG and its subsidiaries and minority investments, including to replace certain letters of credit and other credit support issued for the account of entities acquired pursuant to the Direct Energy Acquisition. In addition, on December 11, 2020, the Trust entered into an amended and restated pledge and control agreement (the "Pledge Agreement"), among NRG, the Trust and the Collateral Agent for the LC Issuers, under which the Trust agreed to grant a pledge over the Eligible Treasury Assets in favor of the Collateral Agent for the benefit of the LC Issuers. Pursuant to the LC Agreement and the Pledge Agreement, the Collateral Agent is entitled to withdraw Eligible Treasury Assets from the Trust's pledged account, following notice to NRG, in the event NRG has failed to reimburse amounts drawn under any letter of credit issued pursuant to the LC Agreement, and the LC Issuers have the right to instruct the Collateral Agent to enforce the pledge over the Eligible Treasury Assets upon the occurrence of any event of default under the LC Agreement. The LC Agreement and the Pledge Agreement were available on January 5, 2021. As of December 31, 2021, \$873 million of letters of credit were issued under the LC Agreement.

Tax Exempt Bonds

(In millions, except rates)	As of December 31,		Interest Rate %
	2021	2020	
NRG Indian River Power 2020, tax exempt bonds, due 2040	\$ 57	\$ 57	1.250
NRG Indian River Power 2020, tax exempt bonds, due 2045	190	190	1.250
NRG Dunkirk 2020, tax exempt bonds, due 2042	59	59	1.300
City of Texas City, tax exempt bonds, due 2045	33	33	4.125
Fort Bend County, tax exempt bonds, due 2038	54	54	4.750
Fort Bend County, tax exempt bonds, due 2042	73	73	4.750
Total	\$ 466	\$ 466	

Dunkirk Bonds

On March 11, 2020, NRG issued \$59 million in aggregate principal amount of NRG Dunkirk 2020 1.30% tax-exempt refinancing bonds due 2042 (the "Dunkirk Bonds"). The Dunkirk Bonds are guaranteed on a first-priority basis by each of NRG's current and future subsidiaries that guarantee indebtedness under its credit agreement. The Dunkirk Bonds are secured by a first priority security interest in the same collateral that is pledged for the benefit of the lenders under NRG's credit agreement, which consists of a substantial portion of the property and assets owned by NRG and the guarantors. The collateral securing the Dunkirk Bonds will, at the request of NRG, be released if NRG satisfies certain conditions, including receipt of an investment grade rating on its senior, unsecured debt securities from two out of the three rating agencies, subject to reversion if those rating agencies withdraw their investment grade rating of the Dunkirk Bonds or any of NRG's senior, unsecured debt securities or downgrade such rating below investment grade. The Dunkirk Bonds are subject to mandatory tender and purchase on April 3, 2023 and have a final maturity date of April 1, 2042.

NRG used the net proceeds from the offering to redeem during 2020 the existing principal amount of outstanding Dunkirk Power LLC 5.875% tax exempt bonds due 2042.

Indian River Bonds

On December 17, 2020, NRG issued \$57 million in aggregate principal amount of NRG Indian River 2020 1.25% tax-exempt refinancing bonds due 2040 (the "IR 2040 Bonds") and \$190 million aggregate principal amount of NRG Indian River Power 2020 1.25% tax-exempt refinancing bonds due 2045 (the "IR 2045 Bonds") (together the "IR Bonds"). The IR Bonds are guaranteed on a first-priority basis by each of NRG's current and future subsidiaries that guarantee indebtedness under its credit agreement. The IR Bonds are secured by a first priority security interest in the same collateral that is pledged for the benefit of the lenders under NRG's credit agreement, which consists of a substantial portion of the property and assets owned by NRG and the guarantors. The collateral securing the IR Bonds will, at the request of NRG, be released if NRG satisfies certain conditions, including receipt of an investment grade rating on its senior, unsecured debt securities from two out of the three rating agencies, subject to reversion if those rating agencies withdraw their investment grade rating of the IR Bonds or any of NRG's senior, unsecured debt securities or downgrade such rating below investment grade. The IR Bonds are subject to mandatory tender and purchase on October 1, 2025 and have final maturity dates of October 1, 2040 for the IR 2040 Bonds and October 1, 2045 for the IR 2045 Bonds.

NRG used the net proceeds from the offering to redeem during 2020 the existing principal amounts of outstanding Indian River Power 6.000% tax exempt bonds due 2040 and Indian River Power LLC 5.375% tax exempt bonds due 2045.

Note 14 — Asset Retirement Obligations

The Company's AROs are primarily related to the environmental obligations for nuclear decommissioning, mine reclamation, ash disposal, site closures, fuel storage facilities and future dismantlement of equipment on leased property. In addition, the Company has also identified conditional AROs for asbestos removal and disposal, which are specific to certain power generation operations.

See Note 7, *Nuclear Decommissioning Trust Fund*, for a further discussion of the Company's nuclear decommissioning obligations. Accretion for the nuclear decommissioning ARO and amortization of the related ARO asset are recorded to the Nuclear Decommissioning Trust Liability to the ratepayers and are not included in net income, consistent with treatment per ASC 980, *Regulated Operations*.

The following table represents the balance of ARO obligations as of December 31, 2021 and 2020, along with the additions, reductions and accretion related to the Company's ARO obligations for the year ended December 31, 2021:

(In millions)	Nuclear Decommission	Other ^(a)	Total
Balance as of December 31, 2020	\$ 303	\$ 457	\$ 760
Revisions in estimates for current obligations	—	(36)	(36)
Additions	—	5	5
Spending for current obligations	—	(51)	(51)
Accretion	18	24	42
Balance as of December 31, 2021	\$ 321	\$ 399	\$ 720

- (a) Total accretion expense related to asset retirement obligations included in the consolidated statement of cash flows includes accretion and revisions in estimates for asset retirement liabilities on non-operating plants

Note 15 — Benefit Plans and Other Postretirement Benefits

NRG sponsors and operates defined benefit pension and other postretirement plans.

NRG pension benefits are available to eligible non-union and union employees through various defined benefit pension plans. These benefits are based on pay, service history and age at retirement. Most pension benefits are provided through tax-qualified plans. NRG also provides postretirement health and welfare benefits for certain groups of employees. Cost sharing provisions vary by the terms of any applicable collective bargaining agreements.

NRG maintains three separate qualified pension plans, the NRG Pension Plan for Bargained Employees, the NRG Pension Plan and the Pension Plan for Employees of Direct Energy Marketing Limited ("DEML"). Participation in the NRG Pension Plan for Bargained Employees depends upon whether an employee is covered by a bargaining agreement. The NRG Pension plan was frozen for non-union employees on December 31, 2018. The Pension Plan for Employees of DEML is closed to new participants.

Due to updated assumptions as a result of ARPA, NRG does not expect to contribute to the Company's pension plans in 2022.

NRG Defined Benefit Plans

The annual net periodic benefit cost/(credit) related to NRG's pension and other postretirement benefit plans include the following components:

(In millions)	Year Ended December 31,		
	Pension Benefits		
	2021	2020	2019
Service cost benefits earned	\$ 9	\$ 10	\$ 10
Interest cost on benefit obligation	27	38	46
Expected return on plan assets	(66)	(61)	(59)
Amortization of unrecognized net loss	1	5	3
Settlement/curtailment expense	2	—	—
Net periodic benefit (credit)/cost	\$ (27)	\$ (8)	\$ —

(In millions)	Year Ended December 31,		
	Other Postretirement Benefits		
	2021	2020	2019
Service cost benefits earned	\$ —	\$ —	\$ 1
Interest cost on benefit obligation	2	3	3
Amortization of unrecognized prior service cost	(10)	(14)	(13)
Amortization of unrecognized net loss	1	1	—
Curtailment loss	1	—	—
Net periodic benefit credit	\$ (6)	\$ (10)	\$ (9)

A comparison of the pension benefit obligation, other postretirement benefit obligations and related plan assets for NRG's plans on a combined basis is as follows:

(In millions)	As of December 31,			
	Pension Benefits		Other Postretirement Benefits	
	2021	2020	2021	2020
Benefit obligation at January 1	\$ 1,489	\$ 1,397	\$ 90	\$ 93
Acquired benefit obligation from Direct Energy	74	—	19	—
Service cost	9	10	—	—
Interest cost	27	38	2	3
Actuarial (gain)/loss	(55)	126	—	—
Employee and retiree contributions	—	—	3	3
Curtailment loss	—	—	1	—
Benefit payments	(93)	(82)	(10)	(9)
Foreign exchange translation	1	—	—	—
Benefit obligation at December 31	1,452	1,489	105	90
Fair value of plan assets at January 1	1,272	1,150	—	—
Acquired fair value of plan assets from Direct Energy	64	—	—	—
Actual return on plan assets	85	193	—	—
Employee and retiree contributions	—	—	3	3
Employer contributions	7	11	7	6
Benefit payments	(93)	(82)	(10)	(9)
Foreign exchange translation	1	—	—	—
Fair value of plan assets at December 31	1,336	1,272	—	—
Funded status at December 31 — excess of obligation over assets	\$ (116)	\$ (217)	\$ (105)	\$ (90)

During the year ended December 31, 2021, the actuarial gain of \$55 million on pension benefits was primarily driven by increasing discount rates and changes in demographic assumptions.

During the year ended December 31, 2020, the actuarial loss of \$126 million on pension benefits was driven by decreasing discount rates and changes in demographic assumptions, partially offset by gains from life expectancy projection updates.

Amounts recognized in NRG's balance sheets were as follows:

(In millions)	As of December 31,			
	Pension Benefits		Other Postretirement Benefits	
	2021	2020	2021	2020
Other current liabilities	\$ —	\$ —	\$ 7	\$ 5
Other non-current liabilities	116	217	98	85

Amounts recognized in NRG's accumulated OCI that have not yet been recognized as components of net periodic benefit cost were as follows:

(In millions)	As of December 31,			
	Pension Benefits		Other Postretirement Benefits	
	2021	2020	2021	2020
Net loss	\$ 52	\$ 127	\$ 5	\$ 6
Prior service cost/(credit)	2	2	(19)	(29)
Total accumulated OCI	\$ 54	\$ 129	\$ (14)	\$ (23)

Other changes in plan assets and benefit obligations recognized in OCI were as follows:

(In millions)	Year Ended December 31,			
	Pension Benefits		Other Postretirement Benefits	
	2021	2020	2021	2020
Net actuarial gain	\$ (72)	\$ (6)	\$ —	\$ —
Amortization of net actuarial loss	(1)	(5)	(1)	(1)
Amortization of prior service cost	—	—	10	14
Effect of settlement	(2)	—	—	—
Total recognized in OCI	\$ (75)	\$ (11)	\$ 9	\$ 13
Net periodic benefit credit	(27)	(8)	(6)	(10)
Net recognized in net periodic pension credit and OCI	\$ (102)	\$ (19)	\$ 3	\$ 3

The following table presents the balances of significant components of NRG's pension plan:

(In millions)	As of December 31,	
	Pension Benefits	
	2021	2020
Projected benefit obligation	\$ 1,452	\$ 1,489
Accumulated benefit obligation	1,423	1,455
Fair value of plan assets	1,336	1,272

NRG's market-related value of its plan assets is the fair value of the assets. The fair values of the Company's pension plan assets by asset category and their level within the fair value hierarchy are as follows:

(In millions)	Fair Value Measurements as of December 31, 2021		
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Total
	Common/collective trust investment — U.S. equity	\$ —	\$ 221
Common/collective trust investment — non-U.S. equity	—	69	69
Common/collective trust investment — non-core assets	—	110	110
Common/collective trust investment — fixed income	—	340	340
Short-term investment fund	13	—	13
Subtotal fair value	\$ 13	\$ 740	\$ 753
Measured at net asset value practical expedient:			
Common/collective trust investment — non-U.S. equity			78
Common/collective trust investment — fixed income			405
Common/collective trust investment — non-core assets			65
Partnerships/joint ventures			35
Total fair value			\$ 1,336

Fair Value Measurements as of December 31, 2020

(In millions)	Fair Value Measurements as of December 31, 2020		Total
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	
Common/collective trust investment — U.S. equity	\$ —	\$ 284	\$ 284
Common/collective trust investment — non-U.S. equity	—	113	113
Common/collective trust investment — non-core assets	—	151	151
Common/collective trust investment — fixed income	—	258	258
Short-term investment fund	13	—	13
Subtotal fair value	\$ 13	\$ 806	\$ 819
Measured at net asset value practical expedient:			
Common/collective trust investment — non-U.S. equity			45
Common/collective trust investment — fixed income			289
Common/collective trust investment — non-core assets			84
Partnerships/joint ventures			35
Total fair value			<u>\$ 1,272</u>

In accordance with ASC 820, the Company determines the level in the fair value hierarchy within which each fair value measurement in its entirety falls, based on the lowest level input that is significant to the fair value measurement in its entirety. The fair value of the common/collective trust investments is valued at fair value which is equal to the sum of the market value of all of the fund's underlying investments. Certain common/collective trust investments have readily determinable fair value as they publish daily net asset value, or NAV, per share and are categorized as Level 2. Certain other common/collective trust investments and partnerships/joint ventures use NAV per share, or its equivalent, as a practical expedient for valuation, and thus have been removed from the fair value hierarchy table.

The following table presents the significant assumptions used to calculate NRG's benefit obligations:

Weighted-Average Assumptions	As of December 31,			
	Pension Benefits		Other Postretirement Benefits	
	2021	2020	2021	2020
Discount rate	2.89 %	2.56 %	2.89 %	2.54 %
Interest crediting rate	3.07 %	3.12 %	1.94 %	1.62 %
Rate of compensation increase	3.06 %	3.00 %	— %	— %
Health care trend rate	—	—	6.8% grading to 4.4% in 2028	7.2% grading to 4.5% in 2028

The following table presents the significant assumptions used to calculate NRG's benefit expense:

Weighted-Average Assumptions	As of December 31,					
	Pension Benefits			Other Postretirement Benefits		
	2021	2020	2019	2021	2020	2019
Discount rate	2.55 %	3.26 %	4.38%/4.20%	2.81%	3.26 %	4.37 %
Interest crediting rate	3.13 %	3.66 %	—	1.62 %	2.28 %	—
Expected return on plan assets	5.62 %	5.93 %	6.35 %	—	—	—
Rate of compensation increase	3.06 %	3.00 %	3.00 %	—	—	—
Health care trend rate	—	—	—	7.0% grading to 4.4% in 2028	7.5% grading to 4.5% in 2028	7.8% grading to 4.5% in 2025

NRG uses December 31 of each respective year as the measurement date for the Company's pension and other postretirement benefit plans. The Company sets the discount rate assumptions on an annual basis for each of NRG's defined benefit retirement plans as of December 31. The discount rate assumptions represent the current rate at which the associated liabilities could be effectively settled at December 31. The Company utilizes the Aon AA Above Median, or AA-AM, yield curve and the AON Canada yield curve to select the appropriate discount rate assumption for its retirement plans. The AA-AM yield curve is a hypothetical AA yield curve represented by a series of annualized individual spot discount rates from 6 months to 99 years. Under the AA-AM yield curve, each bond issue used to build this yield curve must be non-callable, and have an average rating of AA when averaging available Moody's Investor Services, Standard & Poor's and Fitch ratings. The AON Canada yield curve is based on high quality corporate bonds. Under the AON Canada yield curve, expected plan cash flows were discounted using the the yield curve, and then a single rate is determined which produces an equivalent present value.

NRG employs a total return investment approach, whereby a mix of equities and fixed income investments are used to maximize the long-term return of plan assets for a prudent level of risk. Risk tolerance is established through careful consideration of plan liabilities, plan funded status, and corporate financial condition. The Investment Committee reviews the asset mix periodically and as the plan assets increase in future years, the Investment Committee may examine other asset classes such as real estate or private equity. NRG employs a building block approach to determining the long-term rate of return assumption for plan assets, with proper consideration given to diversification and rebalancing. Historical markets are studied and long-term historical relationships between equities and fixed income are preserved, consistent with the widely accepted capital market principle that assets with higher volatility generate a greater return over the long run. Current factors such as inflation and interest rates are evaluated before long-term capital market assumptions are determined. Peer data and historical returns are reviewed to check for reasonableness and appropriateness.

The target allocations of NRG's pension plan assets were as follows for the year ended December 31, 2021:

U.S. equity	17 %
Non-U.S. equity	13 %
Non-core assets	15 %
Fixed Income	55 %

Plan assets are currently invested in a diversified blend of equity and fixed-income investments. Furthermore, equity investments are diversified across U.S., non-U.S., global, and emerging market equities, as well as among growth, value, small and large capitalization stocks.

Investment risk and performance are monitored on an ongoing basis through quarterly portfolio reviews of each asset fund class to a related performance benchmark, if applicable, and annual pension liability measurements. Performance benchmarks are composed of the following indices:

Asset Class	Index
U.S. equities	Dow Jones U.S. Total Stock Market Index
Non-U.S. equities	MSCI All Country World Index
Non-core assets ^(a)	Various (per underlying asset class)
Fixed income securities	Barclays Short, Intermediate and Long Credits/Barclays Strips 20+ Index and FTSE Canada Universe Bond Index

(a) Non-Core Assets are defined as diversifying asset classes approved by the Investment Committee that are intended to enhance returns and/or reduce volatility of the U.S. and non-U.S. equities. Asset classes considered Non-Core include, but may not be limited to: Emerging Market Equity, Emerging Market Debt, Non-US Developed Market Small Cap, High Yield Fixed Income, Real Estate, Bank Loans, Global Infrastructure and other Alternatives.

NRG's expected future benefit payments for each of the next five years, and in the aggregate for the five years thereafter, are as follows:

(In millions)	Pension Benefit Payments	Other Postretirement Benefit	
		Benefit Payments	Medicare Prescription Drug Reimbursements
2022	\$ 96	\$ 7	\$ —
2023	94	7	—
2024	91	7	—
2025	87	6	—
2026	86	6	—
2027-2031	396	26	2

STP Defined Benefit Plans

NRG has a 44% undivided ownership interest in STP, as discussed further in Note 28, *Jointly Owned Plants*. STPNOC, which operates and maintains STP, provides its employees a defined benefit pension plan, as well as postretirement health and welfare benefits. Although NRG does not sponsor the STP plan, it reimburses STPNOC for 44% of the contributions made towards its retirement plan obligations.

During 2019, STPNOC announced that the defined benefit pension plan would be frozen. As a result, during 2019, NRG recognized a gain of \$8 million related to the curtailment of benefits and an increase of \$32 million to the pension liability was recorded to other comprehensive income. The Company measures the fair value of its pension assets in accordance with ASC 820, *Fair Value Measurements and Disclosures*, or ASC 820. As of December 31, 2021, the STPNOC defined benefit pension plan was frozen to all employees.

For the years ended December 31, 2021 and December 31, 2020, NRG reimbursed STPNOC \$17 million and \$8 million, respectively, for its contribution to the plans. In 2022, NRG expects to reimburse STPNOC \$13 million for its contribution to the plan.

The Company has recognized the following in its statement of financial position, statement of operations and accumulated OCI related to its 44% interest in STP:

(In millions)	As of December 31,			
	Pension Benefits		Other Postretirement Benefits	
	2021	2020	2021	2020
Funded status — STPNOC benefit plans	\$ (50)	\$ (99)	\$ (18)	\$ (20)
Net periodic benefit cost/(credit)	17	7	(4)	(4)
Other changes in plan assets and benefit obligations recognized in other comprehensive income	(51)	22	4	5

Defined Contribution Plans

NRG's employees are also eligible to participate in defined contribution 401(k) plans.

The Company's contributions to these plans were as follows:

(In millions)	Year Ended December 31,		
	2021	2020	2019
Company contributions to defined contribution plans	\$ 25	\$ 22	\$ 22

Note 16 — Capital Structure

For the period from December 31, 2018 to December 31, 2021, the Company had 10,000,000 shares of preferred stock authorized and 500,000,000 shares of common stock authorized. The following table reflects the changes in NRG's common shares issued and outstanding for each period presented:

	Common Shares		
	Issued	Treasury	Outstanding
Balance as of December 31, 2018	420,288,886	(136,638,847)	283,650,039
Shares issued under ESPP	—	46,128	46,128
Shares issued under LTIPs	1,601,904	—	1,601,904
Share repurchases	—	(36,301,882)	(36,301,882)
Balance as of December 31, 2019	421,890,790	(172,894,601)	248,996,189
Shares issued under ESPP	—	131,469	131,469
Shares issued under LTIPs	1,167,058	—	1,167,058
Share repurchases	—	(6,062,783)	(6,062,783)
Balance as of December 31, 2020	423,057,848	(178,825,915)	244,231,933
Shares issued under ESPP	—	117,392	117,392
Shares issued under LTIPs	489,326	—	489,326
Share repurchases	—	(1,084,752)	(1,084,752)
Balance as of December 31, 2021	423,547,174	(179,793,275)	243,753,899
Shares issued under LTIPs	288,491	—	288,491
Share repurchases	—	(1,889,151)	(1,889,151)
Balance as of February 24, 2022	423,835,665	(181,682,426)	242,153,239

Common Stock

As of December 31, 2021, NRG had 14,372,743 shares of common stock reserved for the maximum number of shares potentially issuable based on the conversion and redemption features of the long-term incentive plans.

Common stock dividends — The Company declared and paid \$0.325, \$0.30 and \$0.03 quarterly dividend per common share, or \$1.30, \$1.20 and \$0.12 per share on an annualized basis for 2021, 2020 and 2019 respectively.

In the first quarter of 2020, NRG increased the annual dividend to \$1.20 from \$0.12 per share, as part of a long-term capital allocation policy adopted in the fourth quarter of 2019, that targets allocating 50% of cash available for allocation generated each year to growth investments and 50% to be returned to shareholders. The return of capital to shareholders is expected to be completed through the increased dividend supplemented by share repurchases. The long-term capital allocation policy targets an annual dividend growth rate of 7-9% per share in years subsequent to 2020. In 2021 and 2022, NRG increased the annual dividend to \$1.30 and \$1.40 per share, representing an 8% increase each year. The Company's common stock dividends are subject to available capital, market conditions, and compliance with associated laws, regulations and other contractual obligations.

On January 21, 2022, NRG declared a quarterly dividend on the Company's common stock of \$0.35 per share, or \$1.40 per share on an annualized basis, payable on February 15, 2022, to stockholders of record as of February 1, 2022.

Employee Stock Purchase Plan — In March 2019, the Company reopened participation in the ESPP, which allows eligible employees to elect to withhold between 1% and 10% of their eligible compensation to purchase shares of NRG common stock at the lesser of 95% of its market value on the offering date or 95% of the fair market value on the exercise date. An offering date will occur each April 1 and October 1. An exercise date will occur each September 30 and March 31. As of December 31, 2021, there remained 2,636,199 shares of treasury stock reserved for issuance under the ESPP.

Share Repurchases — In 2018, the Company's board of directors authorized the Company to repurchase \$1.5 billion of its common stock. The Company executed \$1.25 billion of these share repurchases in 2018, with the remaining \$0.25 billion completed in the first quarter of 2019. In 2019, the Company's board of directors authorized the Company to repurchase an additional \$1.25 billion of its common stock. The Company executed \$1.194 billion of these share repurchases in 2019 and completed the remaining \$56 million under the 2019 authorization by February 27, 2020. The remaining repurchases in 2020 and were made under the long-term capital allocation policy discussed above. On December 6, 2021 the Company announced that the Board of Directors has authorized \$1 billion for share repurchases, as part of NRG's Capital Allocation Program. The program began in 2021 and will continue throughout 2022.

The following table summarizes the shares repurchases made during the years ended December 31, 2019, 2020 and 2021 as well as through February 24, 2022:

	Total number of shares and share equivalents purchased	Average price paid per share and share equivalent	Amounts paid for shares and share equivalents purchased (in millions)
2019 repurchases:			
Repurchases under February 28, 2019 Accelerated Share Repurchase Agreement	9,438,671		400
Other repurchases ^(a)	26,863,211		1,008
Equivalent shares purchased in lieu of tax withholdings on equity compensation issuances ^(b)	936,928		36
Total Share Repurchases during 2019	37,238,810	\$ 38.79	\$ 1,444
2020 repurchases:			
Repurchases	6,062,783		197
Equivalent shares purchased in lieu of tax withholdings on equity compensation issuances ^(b)	711,248		27
Total Share Repurchases during 2020	6,774,031	\$ 33.05	\$ 224
2021 repurchases:			
Repurchases ^(a)	1,084,752		44
Equivalent shares purchased in lieu of tax withholdings on equity compensation issuances ^(b)	249,013		9
Total Share Repurchases during 2021	1,333,765	\$ 40.22	\$ 53
2022 repurchases:			
Repurchases made subsequent to December 31, 2021	1,889,151		76
Equivalent shares purchased in lieu of tax withholdings on equity compensation issuances ^(b)	130,674		6
Total share repurchases January 1, 2021 through February 24, 2022	2,019,825	\$ 40.26	\$ 82

(a) Includes \$5 million and \$4 million accrued as of December 31, 2021 and December 31, 2019, respectively

(b) NRG elected to pay cash for tax withholding on equity awards instead of issuing actual shares to management. The average price per equivalent shares withheld was \$43.08, \$37.50, \$38.23 and \$38.78 in 2022, 2021, 2020 and 2019, respectively. See Note 21, Stock-Based Compensation, for further discussion of the equity awards

Note 17 — Investments Accounted for by the Equity Method and Variable Interest Entities

Entities that are not Consolidated

NRG accounts for the Company's significant investments using the equity method of accounting. NRG's carrying value of equity investments can be impacted by a number of elements including impairments, unrealized gains and losses on derivatives and movements in foreign currency exchange rates.

The following table summarizes NRG's equity method investments as of December 31, 2021:

(In millions, except percentages)

Name:	Economic Interest	Investment Balance ^(a)
Gladstone	37.5 %	\$ 127
Ivanpah Master Holdings, LLC	54.5 %	4
Watson Cogeneration Company	49.0 %	14
Midway-Sunset Cogeneration Company	50.0 %	12
Total equity investments in affiliates		\$ 157
Petra Nova Parish Holdings, LLC ^(b)	50.0 %	\$ (16)

- (a) As of December 31, 2021, the carrying value of NRG's equity method investment was \$116 million lower than the underlying net assets of the investees. The basis difference is being amortized into net income over the remaining estimated useful lives of the underlying net assets. The basis difference is primarily due to impairments booked on Petra Nova, but not booked at the project level, as well as differences related to the deconsolidations of Ivanpah and the treatment of certain deferred tax assets
- (b) The Company continues to account for Petra Nova under the equity method due to the fact that NRG still has a financial guaranty. As a result, the Company continues to record losses for a negative equity method investment. As of December 31, 2021, NRG recorded \$16 million to other non-current liabilities. Refer to Note 11, *Asset Impairments*, for discussion of NRG's investment in Petra Nova Parish Holdings, LLC

(In millions)	As of December 31,	
	2021	2020
Undistributed earnings from equity investments	\$ 33	\$ 30

Variable Interest Entities

NRG accounts for its interests in certain entities that are considered VIEs under ASC 810, *Consolidation*, for which NRG is not the primary beneficiary, under the equity method.

Through its consolidated subsidiary, NRG Solar Ivanpah LLC, NRG owns a 54.5% interest in Ivanpah Master Holdings, LLC, or Ivanpah, the owner of three solar electric generating projects located in the Mojave Desert with a total capacity of 393 MW. NRG considers this investment a VIE under ASC 810 and NRG is not considered the primary beneficiary. The Company accounts for its interest under the equity method of accounting.

Other Equity Investments

Gladstone — Through a joint venture, NRG owns a 37.5% interest in Gladstone, a 1,613 MW coal-fueled power generation facility in Queensland, Australia. The power generation facility is managed by the joint venture participants and the facility is operated by NRG. Operating expenses incurred in connection with the operation of the facility are funded by each of the participants in proportion to their ownership interests. Coal is sourced from local mines in Queensland. NRG and the joint venture participants receive their respective share of revenues directly from the off takers in proportion to the ownership interests in the joint venture. Power generated by the facility is primarily sold to an adjacent aluminum smelter, with excess power sold to the Queensland Government-owned utility under long-term supply contracts. NRG's investment in Gladstone was \$127 million as of December 31, 2021.

Entities that are Consolidated

The Company has a controlling financial interest that has been identified as a VIE under ASC 810 in NRG Receivables LLC, which has entered into financing transactions related to the Receivables Facility as further described in Note 13, *Long-term Debt and Finance Leases*.

The summarized financial information for the Company's consolidated VIEs consisted of the following:

(In millions)	December 31, 2021	December 31, 2020
Accounts receivable	\$ 939	\$ 647
Other current assets	—	2
Total assets	939	649
Current liabilities	78	78
Net assets	<u>\$ 861</u>	<u>\$ 571</u>

Note 18 — *Income Per Share*

Basic income per common share is computed by dividing net income by the weighted average number of common shares outstanding. Shares issued and treasury shares repurchased during the year are weighted for the portion of the year that they were outstanding. Diluted income per share is computed in a manner consistent with that of basic income per share, while giving effect to all potentially dilutive common shares that were outstanding during the period.

Dilutive effect for equity compensation and other equity instruments — The outstanding relative performance stock units, non-vested restricted stock units, market stock units and non-qualified stock options are not considered outstanding for purposes of computing basic income per share. However, these instruments are included in the denominator for purposes of computing diluted income per share under the treasury stock method. As of December 31, 2021, 2020 and 2019, the Convertible Senior Notes were convertible, under certain circumstances, into the Company's common stock, cash or combination thereof (at NRG's option). There was no dilutive effect for the Convertible Senior Notes due to the Company's expectation, as of such dates, to settle the liability in cash. On February 22, 2022, the Company irrevocably elected to eliminate the right to settle conversions only in shares of the Company's common stock, such that any conversion after such date will be settled in cash or a combination of cash and the Company's common stock.

The reconciliation of NRG's basic income per share to diluted income per share is shown in the following table:

(In millions, except per share amounts)	Year Ended December 31,		
	2021	2020	2019
Basic income per share attributable to NRG Energy, Inc.;			
Net income attributable to NRG Energy, Inc. common stockholders	\$ 2,187	\$ 510	\$ 4,438
Weighted average number of common shares outstanding-basic	245	245	262
Income per weighted average common share — basic	<u>\$ 8.93</u>	<u>\$ 2.08</u>	<u>\$ 16.94</u>
Diluted income per share attributable to NRG Energy, Inc.;			
Net income attributable to NRG Energy, Inc. common stockholders	\$ 2,187	\$ 510	\$ 4,438
Weighted average number of common shares outstanding-basic	245	245	262
Incremental shares attributable to the issuance of equity compensation (treasury stock method)	—	1	2
Weighted average number of common shares outstanding-diluted	<u>245</u>	<u>246</u>	<u>264</u>
Income per weighted average common share — diluted	<u>\$ 8.93</u>	<u>\$ 2.07</u>	<u>\$ 16.81</u>

As of December 31, 2021, 2020 and 2019 the Company had an insignificant number of outstanding equity instruments that are anti-dilutive and were not included in the computation of the Company's diluted income per share.

Note 19 — *Segment Reporting*

The Company's segment structure reflects how management makes financial decisions and allocates resources. The Company manages its operations based on the combined results of the retail and wholesale generation businesses with a geographical focus.

NRG's chief operating decision maker, its chief executive officer, evaluates the performance of its segments based on operational measures including adjusted earnings before interest, taxes, depreciation and amortization, or Adjusted EBITDA, free cash flow and capital for allocation, as well as net income/(loss) and net income/(loss) attributable to NRG Energy, Inc.

The acquired operations of Direct Energy are integrated into the existing NRG segment structure. Domestic customer and market operations are combined into the corresponding geographical segments of Texas, East and West/Services/Other. The West/Services/Other segment includes activity related to the Canadian operations as well as the services businesses.

In February 2019, the Company completed the sale and deconsolidation of the South Central Portfolio and Carlsbad. Refer to Note 4, *Acquisitions, Discontinued Operations and Dispositions*, for further discussion.

The Company had no customer that comprised more than 10% of the Company's consolidated revenues during the years ended December 31, 2021, 2020 and 2019.

Intersegment sales are accounted for at market.

For the Year Ended December 31, 2021						
(In millions)	Texas	East	West/ Services/ Other	Corporate ^(a)	Eliminations	Total
Operating revenues^(a)	\$ 10,293	\$ 13,033	\$ 3,653	\$ —	\$ 10	\$ 26,989
Operating expenses	8,692	10,257	3,466	141	10	22,566
Depreciation and amortization	331	338	88	28	—	785
Impairment losses	—	535	9	—	—	544
Total operating cost and expenses	9,023	11,130	3,563	169	10	23,895
Gain on sale of assets	19	—	17	211	—	247
Operating income	1,289	1,903	107	42	—	3,341
Equity in (losses)/earnings of unconsolidated affiliates	(3)	—	20	—	—	17
Other income, net	8	7	3	59	(14)	63
Loss on debt extinguishment	—	—	—	(77)	—	(77)
Interest expense	(1)	(1)	(28)	(469)	14	(485)
Income/(loss) from continuing operations before income taxes	1,293	1,909	102	(445)	—	2,859
Income tax expense	—	—	19	653	—	672
Net income/(loss) attributable to NRG Energy, Inc.	\$ 1,293	\$ 1,909	\$ 83	\$ (1,098)	\$ —	\$ 2,187
Balance sheet						
Equity investments in affiliates	\$ —	\$ —	\$ 157	\$ —	\$ —	\$ 157
Capital expenditures	153	50	21	45	—	269
Goodwill	751	853	191	—	—	1,795
Total assets	\$ 12,265	\$ 13,673	\$ 4,816	\$ 19,081	\$ (26,653)	\$ 23,182
(a) Inter-segment sales and inter-segment net derivative gains and losses included in operating revenues	\$ 5	\$ (18)	\$ 3	\$ —	\$ —	\$ (10)

For the Year Ended December 31, 2020

(In millions)	Texas	East	West/ Services/ Other	Corporate ^(a)	Eliminations	Total
Operating revenues^(a)	\$ 6,309	\$ 2,258	\$ 530	\$ —	\$ (4)	\$ 9,093
Operating expenses	5,249	1,758	421	57	(4)	7,481
Depreciation and amortization	227	138	36	34	—	435
Impairment losses	14	—	61	—	—	75
Total operating cost and expenses	5,490	1,896	518	91	(4)	7,991
(Loss)/gain on sale of assets	—	—	(2)	5	—	3
Operating income/(loss)	819	362	10	(86)	—	1,105
Equity in (losses)/earnings of unconsolidated affiliates	(12)	—	29	—	—	17
Impairment losses on investments	(18)	—	—	—	—	(18)
Other income, net	11	7	8	41	—	67
Loss on debt extinguishment	—	(4)	(5)	—	—	(9)
Interest expense	—	(14)	(3)	(384)	—	(401)
Income/(loss) from continuing operations before income taxes	800	351	39	(429)	—	761
Income tax (benefit)/expense	—	(1)	2	250	—	251
Net income attributable to NRG Energy, Inc.	\$ 800	\$ 352	\$ 37	\$ (679)	\$ —	\$ 510

Balance sheet

Equity investments in affiliates	\$ (13)	\$ —	\$ 359	\$ —	\$ —	\$ 346
Capital expenditures	130	45	30	25	—	230
Goodwill ^(b)	324	240	15	—	—	579
Total assets	\$ 7,641	\$ 1,790	\$ 1,679	\$ 11,152	\$ (7,360)	\$ 14,902

(a) Inter-segment sales and inter-segment net derivative gains and losses included in operating revenues

	\$ 6	\$ (6)	\$ 4	\$ —	\$ —	\$ 4
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(b) Goodwill was allocated based on the regions in which the business operates and are expected to benefit using a relative fair value approach

For the Year Ended December 31, 2019

(In millions)	Texas	East	West/ Services/ Other	Corporate ^(a)	Eliminations	Total
Operating revenues^(a)	\$ 7,069	\$ 2,262	\$ 497	\$ —	\$ (7)	\$ 9,821
Operating expenses	5,821	1,843	453	50	(7)	8,160
Depreciation and amortization	188	117	37	31	—	373
Impairment losses	1	—	4	—	—	5
Total operating cost and expenses	6,010	1,960	494	81	(7)	8,538
Gain on sale of assets	—	1	—	6	—	7
Operating income/(loss)	1,059	303	3	(75)	—	1,290
Equity in (losses)/earnings of unconsolidated affiliates	(4)	—	6	—	—	2
Impairment losses on investments	(103)	—	—	(5)	—	(108)
Other income, net	20	6	10	30	—	66
Loss on debt extinguishment	—	—	(3)	(48)	—	(51)
Interest expense	—	(18)	(10)	(385)	—	(413)
Income/(loss) from continuing operations before income taxes	972	291	6	(483)	—	786
Income tax expense/(benefit)	—	2	1	(3,337)	—	(3,334)
Net income from continuing operations	972	289	5	2,854	—	4,120
Gain from discontinued operations, net of income tax	—	—	—	321	—	321
Net Income	972	289	5	3,175	—	4,441
Less: Net income attributable to noncontrolling interests and redeemable noncontrolling interests	—	—	3	—	—	3
Net income attributable to NRG Energy, Inc.	\$ 972	\$ 289	\$ 2	\$ 3,175	\$ —	\$ 4,438

(a) Inter-segment sales and inter-segment net derivative gains and losses included in operating revenues

	\$ 1	\$ 8	\$ (2)	\$ —	\$ —	\$ 7
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Note 20 — Income Taxes

The income tax provision from continuing operations consisted of the following amounts:

(In millions, except effective income tax rate)	Year Ended December 31,		
	2021	2020	2019
Current			
State	\$ 48	\$ 22	\$ 2
Foreign	3	4	4
Total — current	51	26	6
Deferred			
U.S. Federal	569	168	(3,000)
State	36	60	(340)
Foreign	16	(3)	—
Total — deferred	621	225	(3,340)
Total income tax expense/(benefit)	\$ 672	\$ 251	\$ (3,334)
Effective income tax rate	23.5 %	33.0 %	(424.2)%

During the year ended December 31, 2019, NRG released the majority of its valuation allowance against its U.S. federal and state deferred tax assets, resulting in a non-cash benefit to income tax expense of approximately \$3.5 billion. In making the determination to release the majority of the valuation allowance as of December 31, 2019, the Company evaluated a number of factors, including its recent history of pre-tax earnings, utilization of \$593 million of NOLs in 2019, as well as its forecasted future pre-tax earnings. Based on this evaluation, the Company determined that the majority of its future tax benefits are more-likely-than-not to be realized. Given the Company's current level of pre-tax earnings and forecasted future pre-tax earnings, the Company expects to generate income before taxes in the U.S. in future periods at a level that would fully utilize its U.S. federal NOL carryforwards and the majority of its state NOL carryforwards prior to their expiration.

On March 27, 2020, the Senate passed the CARES Act to provide emergency relief related to the COVID-19 pandemic. The CARES Act contains federal income tax provisions which, among other things: (i) increases the amount of interest expense that businesses are allowed to deduct by increasing the adjusted taxable income limitation from 30% to 50% for tax years that begin in 2019 and 2020; (ii) permits businesses to carry back to each of the five tax years NOLs arising from tax years beginning after December 31, 2017 and before January 1, 2020; and (iii) temporarily removes the 80% limitation on NOLs until tax years beginning after 2020. The CARES Act provisions did not have a material impact on the tax positions of the Company.

The following represented the domestic and foreign components of income from continuing operations before income taxes:

(In millions)	Year Ended December 31,		
	2021	2020	2019
U.S.	\$ 2,759	\$ 749	\$ 771
Foreign	100	12	15
Total	\$ 2,859	\$ 761	\$ 786

Reconciliations of the U.S. federal statutory tax rate to NRG's effective tax rate were as follows:

(In millions, except effective income tax rate)	Year Ended December 31,		
	2021	2020	2019
Income from continuing operations before income taxes	\$ 2,859	\$ 761	\$ 786
Tax at federal statutory tax rate	600	160	165
Foreign rate differential	(3)	—	—
State taxes	111	18	13
Permanent differences	8	8	(9)
Changes in valuation allowance	(29)	24	(3,492)
Deferred impact of state tax rate changes	(10)	2	12
Recognition of uncertain tax benefits	(10)	3	(10)
Return to provision adjustments	5	36	—
Other	—	—	(13)
Income tax expense/(benefit)	\$ 672	\$ 251	\$ (3,334)
Effective income tax rate	23.5 %	33.0 %	(424.2)%

For the year ended December 31, 2021, NRG's effective income tax rate was higher than the federal statutory tax rate of 21% primarily due to state tax expense partially offset by tax benefits from the revaluation of state deferred tax assets, valuation allowance, and settlements of uncertain tax positions.

For the year ended December 31, 2020, NRG's effective income tax rate was higher than the federal statutory tax rate of 21% primarily due to state tax expense, the recognition of state valuation allowance on NOLs, and return to provision adjustments.

For the year ended December 31, 2019, NRG's effective income tax rate was lower than the federal statutory tax rate of 21% primarily due to the tax benefit from the release of the valuation allowance.

The temporary differences, which gave rise to the Company's deferred tax assets and liabilities consisted of the following:

(In millions)	As of December 31,	
	2021	2020
Deferred tax assets:		
Deferred compensation, accrued vacation and other reserves	\$ 114	\$ 79
Difference between book and tax basis of property	436	357
Pension and other postretirement benefits	65	86
Equity compensation	7	10
Bad debt reserve	168	16
Derivatives, net	—	11
U.S. Federal net operating loss carryforwards	1,773	2,117
Foreign net operating loss carryforwards	112	102
State net operating loss carryforwards	328	351
Federal and state tax credit carryforwards	384	384
Federal benefit on state uncertain tax positions	3	4
Interest disallowance carryforward per §163(j) of the Tax Act	6	4
Inventory obsolescence	9	6
Other	15	10
Total deferred tax assets	3,420	3,537
Deferred tax liabilities:		
Emissions allowances	20	21
Derivatives	591	—
Goodwill	40	29
Intangibles amortization (excluding goodwill)	363	2
Equity method investments	62	156
Convertible Debt	14	16
Total deferred tax liabilities	1,090	224
Total deferred tax assets less deferred tax liabilities	2,330	3,313
Valuation allowance	(248)	(266)
Total net deferred tax assets, net of valuation allowance	\$ 2,082	\$ 3,047

The following table summarizes NRG's net deferred tax position as presented in the consolidated balance sheets:

(In millions)	As of December 31,	
	2021	2020
Deferred tax asset	\$ 2,155	\$ 3,066
Deferred tax liability	(73)	(19)
Net deferred tax asset	\$ 2,082	\$ 3,047

The primary drivers for the decrease in the net deferred tax asset from \$3.0 billion as of December 31, 2020 to \$2.1 billion as of December 31, 2021 are an increase in mark-to-market book gains and step-up in basis of book intangibles associated with the acquisition of Direct Energy.

Deferred tax assets and valuation allowance

Net deferred tax balance — As of December 31, 2021 and 2020, NRG recorded a net deferred tax asset, excluding valuation allowance, of \$2.3 billion and \$3.3 billion, respectively. The Company believes certain state net operating losses may not be realizable under the more-likely-than-not measurement and as such, a valuation allowance was recorded as of December 31, 2021 as discussed below.

NOL carryforwards — As of December 31, 2021, the Company had tax-effected cumulative U.S. NOLs consisting of carryforwards for federal and state income tax purposes of \$1.8 billion and \$328 million, respectively. The Company estimates it will need to generate future taxable income to fully realize the net federal deferred tax asset before the expiration of certain carryforwards commences in 2031. In addition, NRG has tax-effected cumulative foreign NOL carryforwards of \$112 million with no expiration date.

Valuation allowance — As of December 31, 2021, the Company's tax-effected valuation allowance was \$248 million, consisting of state NOL carryforwards and foreign NOL carryforwards. The valuation allowance was recorded based on the assessment of cumulative and forecasted pre-tax book earnings and the future reversal of existing taxable temporary differences.

Taxes Receivable and Payable

As of December 31, 2021, NRG recorded a current net federal receivable of \$16 million, comprised of refunds due from the IRS, a current net state tax payable of \$13 million that is primarily comprised of Texas margin tax, and a current net foreign receivable of \$11 million due to filings of Canadian amended returns as well as prepayments of estimated taxes.

Uncertain tax benefits

NRG has identified uncertain tax benefits with after-tax value of \$13 million and \$15 million as of December 31, 2021 and 2020, for which NRG has recorded a non-current tax liability of \$14 million and \$18 million, respectively. The Company recognizes interest and penalties related to uncertain tax benefits in income tax expense. The Company recognized an immaterial amount of interest expense for the year ended December 31, 2021, and \$1 million for the years ended 2020 and 2019. As of December 31, 2021 and 2020, NRG had cumulative interest and penalties related to these uncertain tax benefits of \$1 million and \$3 million, respectively.

Tax jurisdictions — NRG is subject to examination by taxing authorities for income tax returns filed in the U.S. federal jurisdiction and various state and foreign jurisdictions including operations located in Australia and Canada.

The Company is no longer subject to U.S. federal income tax examinations for years prior to 2018. With few exceptions, state and Canadian income tax examinations are no longer open for years before 2013.

The following table summarizes uncertain tax benefits activity:

(In millions)	As of December 31,	
	2021	2020
Balance as of January 1	\$ 15	\$ 15
Increase due to current year positions	4	3
Increase due to acquired balance from Direct Energy	9	—
Settlements, payments and statute closure	(15)	(3)
Uncertain tax benefits as of December 31	<u>\$ 13</u>	<u>\$ 15</u>

Note 21 — *Stock-Based Compensation*

NRG Energy, Inc. Long-Term Incentive Plan

On April 27, 2017, the NRG LTIP was amended to increase the number of shares available for issuance by 3,000,000. As of December 31, 2021 and 2020, a total of 25,000,000 shares of NRG common stock were authorized for issuance under the NRG LTIP. There were 8,871,874 and 9,385,730 shares of common stock remaining available for grants under the NRG LTIP as of December 31, 2021 and 2020, respectively. The NRG LTIP is subject to adjustments in the event of reorganization, recapitalization, stock split, reverse stock split, stock dividend, and a combination of shares, merger or similar change in NRG's structure or outstanding shares of common stock.

Upon adoption of the amended NRG LTIP effective April 27, 2017, no shares of NRG common stock remain available for future issuance under the NRG GenOn LTIP. As of December 31, 2021 and 2020, there were 20,131 and 78,903 shares of common stock remaining available for grants under the NRG GenOn LTIP, respectively.

Restricted Stock Units

As of December 31, 2021, RSUs granted under the Company's LTIPs typically have three-year graded vesting schedules beginning on the grant date. Fair value of the RSUs granted during 2021 and 2020 is derived from the closing price of NRG common stock on the grant date. The following table summarizes the Company's non-vested RSU awards and changes during the year:

	Units	Weighted Average Grant Date Fair Value per Unit
Non-vested at December 31, 2020	519,514	\$ 35.87
Granted	479,415	39.00
Forfeited	(49,816)	37.41
Vested	(279,161)	34.18
Non-vested at December 31, 2021	669,952	38.69

The total fair value of RSUs vested during the years ended December 31, 2021, 2020 and 2019 was \$12 million, \$17 million and \$36 million, respectively. The weighted average grant date fair value of RSUs granted during the years ended December 31, 2021, 2020 and 2019 was \$39.00, \$38.05 and \$37.37, respectively.

Deferred Stock Units

DSUs represent the right of a participant to be paid one share of NRG common stock at the end of a deferral period established under the terms of the award. DSUs granted under the Company's LTIPs are fully vested at the date of issuance. Fair value of the DSUs, which is based on the closing price of NRG common stock on the date of grant, is recorded as compensation expense in the period of grant.

The following table summarizes the Company's outstanding DSU awards and changes during the year:

	Units	Weighted Average Grant Date Fair Value per Unit
Outstanding at December 31, 2020	342,706	\$ 25.37
Granted	64,512	32.27
Converted to Common Stock	(23,090)	30.92
Outstanding at December 31, 2021	384,128	26.11

The aggregate intrinsic values for DSUs outstanding as of December 31, 2021, 2020 and 2019 were approximately \$17 million, \$13 million and \$13 million, respectively. The aggregate intrinsic values for DSUs converted to common stock for the years ended December 31, 2021, 2020 and 2019 were \$1 million, \$2 million and \$2 million, respectively. The weighted average grant date fair value of DSUs granted during the years ended December 31, 2021, 2020 and 2019 was \$32.27, \$35.59 and \$34.84, respectively.

Performance Stock Units

PSUs entitle the recipient to stock upon vesting. The amount of the award is subject to the Company's achievement of certain performance measures over the vesting period. PSUs include RPSUs and MSUs. As of December 31, 2021, non-vested PSUs consist of RPSUs.

Relative Performance Stock Units — RPSUs are restricted grants where the quantity of shares increases and decreases alongside the Company's Total Shareholder Return, or TSR, relative to the TSR of the Company's current proxy peer group and the total returns of select indexes, or Peer Group^(a). Each RPSU represents the potential to receive NRG common stock after the completion of the performance period, typically three years of service from the date of grant. The number of shares of NRG common stock to be paid (if any) as of the vesting date for each RPSU will depend on the Company's percentile rank within the Peer Group. The number of shares of common stock to be paid as of the vesting date for each RPSU is linearly interpolated for TSR performance between the following points: (i) 0% if ranked below the 25th percentile; (ii) 25% if ranked at the 25th percentile; (iii) 100% if ranked at the 55th percentile (or the 65th percentile if the Company's absolute TSR is less than negative 15%); and (iv) 200% if ranked at the 75th percentile or above. The value of the common stock on the date of grant is based on the closing price of NRG common stock on the date of grant.

(a) For RPSU's granted in 2022 and forward the peer group will consist of the companies that comprise the Standard & Poor's 500 Index on the first day of the performance period.

The following table summarizes the Company's non-vested PSU awards and changes during the year:

	Units	Weighted Average Grant-Date Fair Value per Unit
Non-vested at December 31, 2020	793,561	\$ 41.69
Granted	426,768	46.78
Forfeited	(93,031)	47.21
Vested	(396,793)	35.32
Non-vested at December 31, 2021	730,505	47.40

The weighted average grant date fair value of PSUs granted during the years ended December 31, 2021, 2020 and 2019, was \$46.78, \$23.75 and \$22.50, respectively.

The fair value of PSUs is estimated on the date of grant using a Monte Carlo simulation model and expensed over the service period, which equals the vesting period. Significant assumptions used in the fair value model with respect to the Company's PSUs are summarized below:

	2021 ^(a)	2020	2019
	RPSUs	RPSUs	RPSUs
Expected volatility	34.05 %	30.15 %	40.72 %
Expected term (in years)	3	3	3
Risk free rate	0.17 %	1.58 %	2.45 %

(a) Assumptions pertain to the main award granted in January 2021. Additional 60,815 RPSUs were granted in September 2021 with a risk free rate of 0.42% and expected volatility of 37.38%

For the years ended December 31, 2021 and 2020, expected volatility is calculated based on NRG's historical stock price volatility data over the period commensurate with the expected term of the PSU, which equals the vesting period.

Non-Qualified Stock Options

All NQSOs granted under the Company's LTIP were fully vested as of December 31, 2021, 2020 and 2019. No NQSOs were granted in 2021, 2020 or 2019. NRG recognized compensation costs for NQSOs over the requisite service period for the entire award. No compensation expense was recognized during 2021, 2020 or 2019 as it was fully recognized in prior years. The maximum contractual term is 10 years for NRG's outstanding NQSOs.

The following table summarizes the Company's NQSO activity and changes during the year:

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in millions)
Outstanding at December 31, 2020	77,047	\$ 25.13	0.5	\$ 1
Expired	(4,800)	29.08		
Exercised	(54,377)	26.44		
Outstanding at December 31, 2021	17,870	20.07	0.2	—
Exercisable at December 31, 2021	17,870	20.07	0.2	—

The following table summarizes the total intrinsic value of options exercised and the cash received from the exercises of options:

(In millions)	Year Ended December 31,		
	2021	2020	2019
Total intrinsic value of options exercised	\$ 1	\$ 1	\$ 2
Cash received from options exercised	1	1	3

Supplemental Information

The following table summarizes NRG's total compensation expense recognized for the years presented, as well as total non-vested compensation costs not yet recognized and the period over which this expense is expected to be recognized as of December 31, 2021, for each of the types of awards issued under the LTIPs. Minimum tax withholdings of \$9 million, \$27 million, and \$36 million for the years ended December 31, 2021, 2020, and 2019, respectively, are reflected as a reduction to additional paid-in capital on the Company's consolidated balance sheets.

(In millions, except weighted average data)	Compensation Expense			Non-vested Compensation Cost	
				Unrecognized Total Cost	Weighted Average Recognition Period Remaining (In years)
	Year Ended December 31,			As of December 31,	
Award	2021	2020	2019	2021	2021
RSUs	\$ 9	\$ 9	\$ 9	\$ 16	1.80
DSUs	2	2	2	—	0.00
RPSUs	9	10	10	15	1.19
PRSUs ^(a)	7	6	11	10	1.52
Total	\$ 27	\$ 27	\$ 32	\$ 41	
Tax detriment/(benefit) recognized	\$ 2	\$ (9)	\$ (12)		

(a) Phantom Restricted Stock Units, PRSUs, are liability-classified time-based awards that typically vest ratably over a three-year period. The amount to be paid upon vesting is based on NRG's closing stock price for the period

Note 22 — Related Party Transactions

NRG provides services to some of its related parties, who are accounted for as equity method investments, under operations and maintenance agreements. Fees for the services under these agreements include recovery of NRG's costs of operating the plants. Certain agreements also include fees for administrative service, a base monthly fee, profit margin and/or annual incentive bonus.

The following table summarizes NRG's material related party transactions with third party affiliates:

(In millions)	Year Ended December 31,		
	2021	2020	2019
<i>Revenues from Related Parties Included in Operating Revenues</i>			
Gladstone	\$ 4	\$ 4	\$ 4
Ivanpah ^(a)	39	43	35
Midway-Sunset	6	5	5
Total	\$ 49	\$ 52	\$ 44

(a) Includes fees under project management agreements with each project company

Note 23 — Commitments and Contingencies

Certain Fuel and Transportation Commitments

NRG has entered into long-term contractual arrangements to procure certain fuel and transportation services for the Company's generation assets.

As of December 31, 2021, the Company's minimum commitments under such outstanding agreements are estimated as follows:

Period	(In millions)
2022	\$ 122
2023	54
2024	63
2025	62
2026	51
Thereafter	26
Total^(a)	\$ 378

(a) Actual fuel and transportation purchases are significantly higher than these estimated minimum unconditional long-term firm commitments with remaining term in excess of one year

For the years ended December 31, 2021, 2020 and 2019, the costs of certain fuel and transportation were \$0.6 billion, \$0.5 billion and \$0.6 billion, respectively.

Purchased Energy Commitments

NRG has long-term contractual commitments related to electricity and natural gas products, including power purchases, gas transportation and storage of various quantities and durations, and renewable purchased power agreements under PPAs with third-party project developers, which are accounted for as NPNS. These contracts are not included in the consolidated balance sheet as of December 31, 2021. Minimum purchase commitment obligations are as follows as of December 31, 2021:

Period	(In millions)
2022	\$ 1,566
2023	1,036
2024	617
2025	382
2026	289
Thereafter	1,071
Total^(a)	\$ 4,961

(a) Actual energy purchases are significantly higher than these estimated minimum unconditional long-term firm commitments with remaining term in excess of one year

For the years ended December 31, 2021, 2020 and 2019, the costs of purchased energy were \$12.8 billion, \$1.8 billion and \$2.6 billion, respectively.

First Lien Structure

NRG has granted first liens to certain counterparties on a substantial portion of property and assets owned by NRG and the guarantors of its senior debt. NRG uses the first lien structure to reduce the amount of cash collateral and letters of credit that it would otherwise be required to post from time to time to support its obligations under out-of-the-money hedges. To the extent that the underlying hedge positions for a counterparty are out-of-the-money to NRG, the counterparty would have a claim under the first lien program. As of December 31, 2021, hedges under the first lien were out-of-the-money for NRG on a counterparty aggregate basis.

Nuclear Insurance

STP maintains required insurance coverage for liability claims arising from nuclear incidents pursuant to the Price-Anderson Act. The current liability limit per incident is \$13.8 billion, subject to change to account for the effects of inflation and the number of licensed reactors. An inflation adjustment must be made at least once every five years with the next adjustment expected to be effective no later than November 1, 2023. Under the Price-Anderson Act, owners of nuclear power plants in the U.S. are required to purchase primary insurance limits of \$450 million for each operating site. In addition, the Price-Anderson Act requires an additional layer of protection through mandatory participation in a retrospective rating plan for power reactors resulting in an additional \$13.3 billion in funds available for public liability claims. The current maximum assessment per incident, per reactor, is approximately \$138 million, taking into account a 5% adjustment for administrative fees, payable at approximately \$21 million per year, per reactor. NRG would be responsible for 44% of the maximum assessment, or \$9 million per year, per reactor, and a maximum of \$61 million per incident, per reactor. In addition, the U.S. Congress retains the ability to impose additional financial requirements on the nuclear industry to pay liability claims that exceed \$13.8 billion for a single incident. The liabilities of the co-owners of STP with respect to the retrospective premium assessments for nuclear liability insurance are joint and several.

STP purchases insurance for property damage and site decontamination cleanup costs from Nuclear Electric Insurance Limited, or NEIL, and European Mutual Association for Nuclear Insurance, or EMANI, both of which are industry mutual insurance companies, of which STP is a member. STP has purchased \$2.8 billion in limits for nuclear events and \$1.0 billion in limits for non-nuclear events. The nuclear event limit remains the maximum available from NEIL. The upper \$1.3 billion in nuclear events limits (excess of the first \$1.5 billion in nuclear events limits) is a single limit blanket policy shared with two Diablo Canyon nuclear reactors, which have no affiliation with the Company. This shared limit is not subject to automatic reinstatement in the event of a loss. The NEIL primary policy covers both nuclear and non-nuclear property damage events, and a NEIL companion policy provides Accidental Outage coverage for the co-owners of STP's lost revenue following a property damage event, at a weekly indemnity limit of \$3 million per unit up to a maximum of \$274 million nuclear per unit and \$184 million non-nuclear per unit, and is subject to an eight-week waiting period. NRG also purchases an Accidental Outage policy from NEIL, which provides protection for lost revenue due to an insurable event. This coverage allows for reimbursement up to \$2 million per week per unit up to a maximum of \$216 million nuclear and \$144 million non-nuclear, and is subject to an eight-

week waiting period. Accidental Outage coverage amounts decrease in the event more than one unit at a station is out of service due to a common accident. Under the terms of the NEIL and EMANI policies, member companies may be assessed up to ten and six times their annual premiums respectively if the NEIL or EMANI Board of Directors determines their surplus has been depleted due to the payment of property losses at any of the licensed reactors in a single policy year. NEIL and EMANI require that their members maintain an investment grade credit rating or ensure their annual retrospective obligation by providing a financial guarantee, letter of credit, deposit premium, or an insurance policy. NRG has purchased an insurance policy from NEIL and EMANI to guarantee the Company's obligation; however note the NEIL aspect of this insurance will only respond to retrospective premium adjustments assessed within twenty-four months after the policy term, whereas NEIL's Board of Directors can make such an adjustment up to 6 years after the policy expires. All insurance coverage is subject to various sub limits and significant deductibles.

Contingencies

The Company's material legal proceedings are described below. The Company believes that it has valid defenses to these legal proceedings and intends to defend them vigorously. NRG records accruals for estimated losses from contingencies when information available indicates that a loss is probable and the amount of the loss, or range of loss, can be reasonably estimated. As applicable, the Company has established an adequate accrual for the applicable legal matters, including regulatory and environmental matters as further discussed in Note 24, *Regulatory Matters*, and Note 25, *Environmental Matters*. In addition, legal costs are expensed as incurred. Management has assessed each of the following matters based on current information and made a judgment concerning its potential outcome, considering the nature of the claim, the amount and nature of damages sought, and the probability of success. Unless specified below, the Company is unable to predict the outcome of these legal proceedings or reasonably estimate the scope or amount of any associated costs and potential liabilities. As additional information becomes available, management adjusts its assessment and estimates of such contingencies accordingly. Because litigation is subject to inherent uncertainties and unfavorable rulings or developments, it is possible that the ultimate resolution of the Company's liabilities and contingencies could be at amounts that are different from its currently recorded accruals and that such difference could be material.

In addition to the legal proceedings noted below, NRG and its subsidiaries are party to other litigation or legal proceedings arising in the ordinary course of business. In management's opinion, the disposition of these ordinary course matters will not materially adversely affect NRG's consolidated financial position, results of operations, or cash flows.

Environmental Lawsuits

Sierra club et al. v. Midwest Generation LLC — In 2012, several environmental groups filed a complaint against Midwest Generation with the Illinois Pollution Control Board ("IPCB") alleging violations of environmental law resulting in groundwater contamination. In June 2019, the IPCB found that Midwest Generation violated the law because it had improperly handled coal ash at four facilities in Illinois and caused or allowed coal ash constituents to impact groundwater. On September 9, 2019, Midwest Generation filed a Motion to Reconsider numerous issues, which the court granted in part and denied in part on February 6, 2020. The IPCB will hold hearings to determine the appropriate relief. Midwest Generation has been working with the Illinois EPA to address the groundwater issues since 2010.

Consumer Lawsuits

Similar to other energy service companies ("ESCOs") operating in the industry, from time-to-time, the Company and/or its subsidiaries may be subject to consumer lawsuits in various jurisdictions where they sell natural gas and electricity.

Variable Price Cases — In the cases set forth below, referred to as the Variable Price Cases, such actions involve consumers alleging that one of the Company's ESCOs promised that consumers would pay the same or less than they would have paid if they stayed with their default utility or previous energy supplier. The underlying claims of each case are similar and the Company continues to deny the allegations and is vigorously defending these matters. These matters were known and accrued for at the time of each acquisition.

XOOM Energy

XOOM Energy is a defendant in a putative class action lawsuit pending in New York. This case is in the discovery phase.

Direct Energy

There are three putative class actions pending against Direct Energy: (1) Linda Stanley v. Direct Energy (S.D.N.Y. Apr. 2019) - The parties mediated in June and agreed on a settlement. On November 16, 2021, the Court granted preliminary approval of the settlement. The final approval hearing will be held on April 5, 2022. It may take several months to determine the final payout amount; (2) Martin Forte v. Direct Energy (N.D.N.Y. Mar. 2017) - The Court recently granted Direct Energy's Motion for Summary Judgment effectively ending the matter at the district court level. It is likely that the plaintiff will appeal;

however, it is unlikely plaintiff will prevail; (3) *Richard Schafer v. Direct Energy* (W.D.N.Y. Dec. 2019; on appeal 2nd Cir. N.Y.) - The Court granted limited discovery that will end April 29, 2022. Summary judgement briefing is due on May 20, 2022.

Telephone Consumer Protection Act ("TCPA") Cases — In the cases set forth below, referred to as the TCPA Cases, such actions involve consumers alleging violations of the Telephone Consumer Protection Act of 1991, as amended, by receiving calls, texts or voicemails without consent in violation of the federal Telemarketing Sales Rule, and/or state counterpart legislation. The underlying claims of each case are similar. The Company denies the allegations asserted by plaintiffs and intends to vigorously defend these matters. These matters were known and accrued for at the time of the acquisition.

There are two putative class actions pending against Direct Energy: (1) *Brittany Burk v. Direct Energy* (S.D. Tex. Feb. 2019) - The Court denied Plaintiff's Motion for Class Certification and Motion for Substitution of a New Plaintiff on September 20, 2021. The parties reached a settlement of the plaintiff's individual claims and the Court has conditionally dismissed the matter; and (2) *Matthew Dickson v. Direct Energy* (N.D. Ohio Jan. 2018) - Direct Energy has filed a Third-Party Petition against its vendor, Total Marketing Concepts, LLC, who placed voicemails without consent from Direct Energy and in violation of the parties' agreement. The case was stayed pending the outcome of an appeal to the Sixth Circuit based on the unconstitutionality of the TCPA during the period from 2015-2020. The Sixth Circuit found the TCPA was in effect during that period and remanded the case back to the trial court. Direct Energy refiled its motions along with supplements.

Winter Storm Uri Lawsuits

The Company has been named in certain property damage and wrongful death claims that have been filed in connection with Winter Storm Uri. At this time, the Company is unable to determine the extent or impact of these various litigation matters due to their preliminary nature. The Company intends to vigorously defend these matters.

Indemnifications and Other Contractual Arrangements

Washington-St. Tammany and Claiborne Electric Cooperative v. LaGen — On June 28, 2017, plaintiffs Washington-St. Tammany Electric Cooperative, Inc. and Claiborne Electric Cooperative, Inc. filed a lawsuit against LaGen in the United States District Court for the Middle District of Louisiana. The plaintiffs claimed breach of contract against LaGen for allegedly improperly charging the plaintiffs for costs related to the installation and maintenance of certain pollution control technology. Plaintiffs sought damages for the alleged improper charges and a declaration as to which charges were proper under the contract. In February 2020, the court dismissed this lawsuit without prejudice for lack of subject matter jurisdiction. On March 17, 2020, plaintiffs filed a lawsuit in the Nineteenth Judicial District Court for the Parish of East Baton Rouge in Louisiana alleging substantially the same matters. The Company anticipates a trial, in state court, to begin in 2023. On February 4, 2019, NRG sold the South Central Portfolio, including the entities subject to this litigation. However, NRG has agreed to indemnify the purchaser for certain losses suffered in connection therewith.

Note 24 — Regulatory Matters

NRG operates in a highly regulated industry and is subject to regulation by various federal and state agencies. As such, NRG is affected by regulatory developments at both the federal and state levels and in the regions in which NRG operates. In addition, NRG is subject to the market rules, procedures, and protocols of the various ISO and RTO markets in which NRG participates. These power markets are subject to ongoing legislative and regulatory changes that may impact NRG's wholesale and retail operations.

In addition to the regulatory proceedings noted below, NRG and its subsidiaries are parties to other regulatory proceedings arising in the ordinary course of business or have other regulatory exposure. In management's opinion, the disposition of these ordinary course matters will not materially adversely affect NRG's consolidated financial position, results of operations, or cash flows.

California Station Power — As the result of unfavorable final and non-appealable litigation, the Company accrued a liability associated with consumption of station power at the Company's Encina power plant facility in California after August 30, 2010. The Company has established an appropriate accrual pending potential regulatory action by San Diego Gas & Electric regarding the Company's Encina facility.

South Central — On August 4, 2016, NRG received a document hold notice from FERC regarding conduct in the MISO and PJM markets. FERC Office of Enforcement Staff investigated potential violations of MISO rules involving bidding for the Big Cajun 2 facility, as well as other aspects of NRG's operations in MISO. On August 18, 2020, FERC Office of Enforcement presented NRG with its preliminary findings. NRG responded to the preliminary findings on January 15, 2021. On September 16, 2021, FERC Office of Enforcement Staff informed NRG that the investigation is closed with no further action.

Note 25 — Environmental Matters

NRG is subject to a wide range of environmental laws in the development, construction, ownership and operation of power plants. These laws generally require that governmental permits and approvals be obtained before construction and maintained during operation of power plants. The electric generation industry has been facing increasingly stringent requirements regarding air quality, GHG emissions, combustion byproducts, water discharge and use, and threatened and endangered species. In general, future laws are expected to require the addition of emissions controls or other environmental controls or to impose additional restrictions on the operations of the Company's facilities, which could have a material effect on the Company's consolidated financial position, results of operations, or cash flows. The Company has elected to use a \$1 million disclosure threshold, as permitted, for environmental proceedings to which the government is a party.

Air

On July 8, 2019, the EPA promulgated the ACE rule, which rescinded the CPP, which had sought to broadly regulate CO₂ emissions from the power sector. The ACE rule required states that have coal-fired EGUs to develop plans to seek heat rate improvements from coal-fired EGUs. On January 19, 2021, the D.C. Circuit vacated the ACE rule (but on February 22, 2021, at the EPA's request, stayed the issuance of the portion of the mandate that would vacate the repeal of the CPP). On October 29, 2021, the U.S. Supreme Court agreed to review the D.C. Circuit's decision, which should provide some clarity regarding the scope of the EPA's authority to regulate CO₂ under the Clean Air Act. The Company expects the EPA to promulgate a new rule to regulate GHG emissions from power plants after a decision from the U.S. Supreme Court.

Water

Effluent Limitations Guidelines — In November 2015, the EPA revised the ELG for Steam Electric Generating Facilities, which imposed more stringent requirements (as individual permits were renewed) for wastewater streams from FGD, fly ash, bottom ash, and flue gas mercury control. On September 18, 2017, the EPA promulgated a final rule that, among other things, postponed the compliance dates to preserve the status quo for FGD wastewater and bottom ash transport water by two years to November 2020 until the EPA amended the rule. On October 13, 2020, the EPA amended the 2015 ELG rule by: (i) altering the stringency of certain limits for FGD wastewater; (ii) relaxing the zero-discharge requirement for bottom ash transport water; and (iii) changing several deadlines. On July 26, 2021, the EPA announced that it is initiating a new rulemaking to evaluate revising the ELG rule. While the EPA is developing the new rule, the existing rule (as amended in 2020) will stay in place, and the EPA expects permitting authorities to continue to implement the current regulation. The EPA anticipates releasing a proposed rule in fall 2022. In October 2021, NRG informed its regulators that the Company intends to comply with the ELG by ceasing combustion of coal by the end of 2028 at its domestic coal units outside of Texas, and installing appropriate controls by the end of 2025 at its two plants in Texas.

Byproducts, Wastes, Hazardous Materials and Contamination

In April 2015, the EPA finalized the rule regulating byproducts of coal combustion (e.g., ash and gypsum) as solid wastes under the RCRA. In September 2017, the EPA agreed to reconsider the rule. On July 30, 2018, the EPA promulgated a rule that amended the existing ash rule by extending some of the deadlines and providing more flexibility for compliance. On August 21, 2018, the D.C. Circuit found, among other things, that the EPA had not adequately regulated unlined ponds and legacy ponds. In 2019 and 2020, the EPA proposed several changes to this rule. On August 28, 2020, the EPA finalized "A Holistic Approach to Close Part A: Deadline to Initiate Closure," which amended the April 2015 Rule to address the August 2018 D.C. Circuit decision and extend some of the deadlines. On November 12, 2020, the EPA finalized "A Holistic Approach to Closure Part B," which further amended the April 2015 Rule to, among other things, provide procedures for requesting approval to operate existing impoundments with an alternative liner.

Note 26 — Cash Flow Information

Detail of supplemental disclosures of cash flow and non-cash investing and financing information was:

(In millions)	Year Ended December 31,		
	2021	2020	2019
Interest paid, net of amount capitalized	\$ 433	\$ 340	\$ 372
Income taxes paid, net of refunds	32	24	8
Non-cash investing activities:			
(Decreases)/additions to fixed assets for accrued capital expenditures	(16)	(6)	1

Note 27 — Guarantees

NRG and its subsidiaries enter into various contracts that include indemnification and guarantee provisions as a routine part of the Company's business activities. Examples of these contracts include asset purchases and sale agreements, commodity sale and purchase agreements, retail contracts, joint venture agreements, EPC agreements, operation and maintenance agreements, service agreements, settlement agreements, and other types of contractual agreements with vendors and other third parties, as well as affiliates. These contracts generally indemnify the counterparty for tax, environmental liability, litigation and other matters, as well as breaches of representations, warranties and covenants set forth in these agreements. The Company is obligated with respect to customer deposits associated with the Company's retail operations. In some cases, NRG's maximum potential liability cannot be estimated, since the underlying agreements contain no limits on potential liability.

The following table summarizes the maximum potential exposures that can be estimated for NRG's guarantees, indemnities, and other contingent liabilities by maturity:

(In millions)	By Remaining Maturity at December 31,					
	2021					2020 Total
	Under 1 Year	1-3 Years	3-5 Years	Over 5 Years	Total	
Guarantees						
Letters of credit and surety bonds	\$ 4,064	\$ 31	\$ —	\$ —	\$ 4,095	\$ 1,153
Asset sales guarantee obligations	269	25	24	96	414	506
Other guarantees	—	—	—	93	93	87
Total guarantees	\$ 4,333	\$ 56	\$ 24	\$ 189	\$ 4,602	\$ 1,746

Letters of credit and surety bonds — As of December 31, 2021, NRG and its consolidated subsidiaries were contingently obligated for a total of \$4.1 billion under letters of credit and surety bonds. The significant increase in 2021 is primarily due to the acquisition of Direct Energy. Most of these letters of credit and surety bonds are issued in support of the Company's obligations to perform under commodity agreements and obligations associated with future closure and maintenance of ash sites, as well as for financing or other arrangements. A majority of these letters of credit and surety bonds expire within one year of issuance, and it is typical for the Company to renew them on similar terms.

The material indemnities, within the scope of ASC 460, are as follows:

Asset sales — The purchase and sale agreements which govern NRG's asset or share investments and divestitures customarily contain guarantees and indemnifications of the transaction to third parties. The contracts indemnify the parties for liabilities incurred as a result of a breach of a representation or warranty by the indemnifying party, or as a result of a change in tax laws. These obligations generally have a discrete term and are intended to protect the parties against risks that are difficult to predict or estimate at the time of the transaction. In several cases, the contract limits the liability of the indemnifier. NRG has no reason to believe that the Company currently has any material liability relating to such routine indemnification obligations included in the table above, except for the California property tax indemnity for estimated increases in California property taxes of certain solar properties that the Company agreed to indemnify NRG Yield for, as part of the agreement to sell NRG Yield and the Renewables Platform. The California property tax indemnity is estimated to be \$158 million as of December 31, 2021 and is included in the above table under asset sales guarantee obligations.

Other guarantees — NRG has issued other guarantees of obligations including payments under certain agreements with respect to certain of its unconsolidated subsidiaries, payment or performance by fuel providers and payment or reimbursement of credit support and deposits. The Company does not believe that it will be required to perform under these guarantees.

Other indemnities — Other indemnifications NRG has provided cover operational, tax, litigation and breaches of representations, warranties and covenants. NRG has also indemnified, on a routine basis in the ordinary course of business, consultants or other vendors who have provided services to the Company. NRG's maximum potential exposure under these indemnifications can range from a specified dollar amount to an indeterminate amount, depending on the nature of the transaction. Total maximum potential exposure under these indemnifications is not estimable due to uncertainty as to whether claims will be made or how they will be resolved. NRG does not have any reason to believe that the Company will be required to make any material payments under these indemnity provisions.

Because many of the guarantees and indemnities NRG issues to third parties and affiliates do not limit the amount or duration of its obligations to perform under them, there exists a risk that the Company may have obligations in excess of the amounts described above. For those guarantees and indemnities that do not limit the Company's liability exposure, it may not be able to estimate what the Company's liability would be, until a claim is made for payment or performance, due to the contingent nature of these contracts.

Note 28 — Jointly Owned Plants

Certain NRG subsidiaries own undivided interests in jointly-owned plants, as described below. These plants are maintained and operated pursuant to their joint ownership participation and operating agreements. NRG is responsible for its subsidiaries' share of operating costs and direct expenses and includes its proportionate share of the facilities and related revenues and direct expenses in these jointly-owned plants in the corresponding balance sheet and income statement captions of the Company's consolidated financial statements.

The following table summarizes NRG's proportionate ownership interest in the Company's jointly-owned facilities:

(In millions unless otherwise stated)

<u>As of December 31, 2021</u>	<u>Ownership Interest</u>	<u>Property, Plant & Equipment</u>	<u>Accumulated Depreciation</u>	<u>Construction in Progress</u>
South Texas Project Units 1 and 2, Bay City, TX	44.00 %	\$ 421	\$ (208)	\$ 4
Cedar Bayou Unit 4, Baytown, TX	50.00 %	220	(109)	12

SCHEDULE II — VALUATION AND QUALIFYING ACCOUNTS

For the Years Ended December 31, 2021, 2020 and 2019

<u>(In millions)</u>	<u>Balance at Beginning of Period</u>	<u>Charged to Costs and Expenses</u>	<u>Charged to Other Accounts</u>	<u>Deductions</u>	<u>Balance at End of Period</u>
Allowance for credit losses, deducted from accounts receivable					
Year Ended December 31, 2021	\$ 67	\$ 698	\$ 112	\$ (194) ^(a)	\$ 683
Year Ended December 31, 2020	43	108	—	(84) ^(a)	67
Year Ended December 31, 2019	32	95	—	(84) ^(a)	43
Income tax valuation allowance, deducted from deferred tax assets					
Year Ended December 31, 2021	\$ 266	\$ (29)	\$ 11	\$ —	\$ 248
Year Ended December 31, 2020	242	24	—	—	266
Year Ended December 31, 2019	3,794	(3,543)	(9)	—	242

(a) Represents principally net amounts charged as uncollectible

EXHIBIT INDEX

Number	Description	Method of Filing
2.1	Third Amended Joint Plan of Reorganization of NRG Energy, Inc., NRG Power Marketing, Inc., NRG Capital LLC, NRG Finance Company I LLC, and NRGenerating Holdings (No. 23) B.V.	Incorporated herein by reference to Exhibit 99.1 to the Registrant's current report on Form 8-K filed on November 19, 2003.
2.2	First Amended Joint Plan of Reorganization of NRG Northeast Generating LLC (and certain of its subsidiaries), NRG South Central Generating (and certain of its subsidiaries) and Berrians I Gas Turbine Power LLC.	Incorporated herein by reference to Exhibit 99.2 to the Registrant's current report on Form 8-K filed on November 19, 2003.
2.3	Acquisition Agreement, dated as of September 30, 2005, by and among NRG Energy, Inc., Texas Genco LLC and the Direct and Indirect Owners of Texas Genco LLC.	Incorporated herein by reference to Exhibit 2.1 to the Registrant's current report on Form 8-K filed on October 3, 2005.
2.4	Asset Purchase Agreement, dated October 18, 2013, by and among NRG Energy, Inc., Edison Mission Energy and NRG Energy Holdings Inc.	Incorporated herein by reference to Exhibit 2.2 to Amendment No. 1 to the Registrant's current report on Form 8-K filed on October 21, 2013.
2.5	Third Amended Joint Plan of Reorganization of GenOn Energy, Inc. and its Debtor Affiliates.	Incorporated herein by reference to Exhibit 2.1 to the Registrant's current report on Form 8-K filed on December 18, 2017.
2.6†^	Purchase and Sale Agreement, dated as of February 6, 2018, by and among NRG Energy, Inc. and NRG Repowering Holdings LLC, and GIP III Zephyr Acquisition Partners, L.P.	Incorporated herein by reference to Exhibit 2.9 to the Registrant's annual report on Form 10-K filed on March 1, 2018.
2.7^	Purchase and Sale Agreement, dated as of February 6, 2018, by and between NRG Energy, Inc., NRG South Central Generating LLC, and Cleco Energy LLC.	Incorporated herein by reference to Exhibit 2.10 to the Registrant's annual report on Form 10-K filed on March 1, 2018.
2.8‡	Purchase and Sale Agreement dated as of February 28, 2021 by and between NRG Energy, Inc., and Generation Bridge Acquisition, LLC, as a Purchaser	Incorporated herein by reference to Exhibit 2.1 to the Registrant's quarterly report on Form 10-Q filed on May 6, 2021.
3.1	Amended and Restated Certificate of Incorporation.	Incorporated herein by reference to Exhibit 3.1 to the Registrant's quarterly report on Form 10-Q filed on May 3, 2012.
3.2	Certificate of Amendment to Amended and Restated Certificate of Incorporation.	Incorporated herein by reference to Exhibit 3.1 to the Registrant's current report on Form 8-K filed on December 14, 2012.
3.3	Fifth Amended and Restated By-Laws.	Filed herewith.
4.1	Specimen of Certificate representing common stock of NRG Energy, Inc.	Incorporated herein by reference to Exhibit 4.3 to the Registrant's quarterly report on Form 10-Q filed on August 4, 2006.
4.2	Second Supplemental Indenture, dated as of July 19, 2016, among NRG Energy, Inc., the guarantors named therein and Law Debenture Trust Company of New York.	Incorporated herein by reference to Exhibit 4.3 to the Registrant's Current Report on Form 8-K, filed on July 25, 2016.
4.3	Third Supplemental Indenture, dated August 2, 2016, among NRG Energy, Inc., the guarantors named therein and Law Debenture Trust Company of New York.	Incorporated herein by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K, filed on August 3, 2016.
4.4	Form of 6.625% Senior Note due 2027.	Incorporated herein by reference to Exhibit 4.3 to the Registrant's Current Report on Form 8-K, filed on August 3, 2016.
4.5	Registration Rights Agreement, dated August 2, 2016, among NRG Energy, Inc., the guarantors named therein and Morgan Stanley & Co. LLC, as representative to the initial purchasers listed in Schedule I thereto.	Incorporated herein by reference to Exhibit 4.4 to the Registrant's Current Report on Form 8-K, filed on August 3, 2016.
4.6	Fourth Supplemental Indenture, dated December 7, 2017, among NRG Energy, Inc., the guarantors named therein and Delaware Trust Company, as trustee.	Incorporated herein by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K, filed on December 8, 2017.
4.7	Form of 5.75% Senior Notes due 2028.	Incorporated herein by reference to Exhibit 4.3 to the Registrant's Current Report on Form 8-K, filed on December 8, 2017.
4.8	Registration Rights Agreement, dated December 7, 2017, among NRG Energy, Inc., the guarantors named therein and Citigroup Global Markets, Inc., as representative to the initial purchasers listed in Schedule I thereto.	Incorporated herein by reference to Exhibit 4.4 to the Registrant's Current Report on Form 8-K, filed on December 8, 2017.
4.9	Indenture, dated May 24, 2018, among NRG Energy, Inc., the guarantors named therein and Delaware Trust Company, as trustee.	Incorporated herein by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K, filed on May 25, 2018.

- 4.10 [Form of 2.75% Convertible Senior Notes due 2048.](#) Incorporated herein by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K, filed on May 25, 2018.
- 4.11 [Description of NRG Energy, Inc. securities registered pursuant to section 12 of the Securities Exchange Act of 1934](#) Incorporated herein by reference to Exhibit 4.15 to the Registrant's Annual Report on Form 10-K, filed on February 27, 2020.
- 4.12 [Indenture, dated December 2, 2020, between NRG Energy, Inc. and Deutsche Bank Trust Company Americas, as trustee, pertaining to the Secured Notes.](#) Incorporated herein by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K, filed on December 4, 2020.
- 4.13 [Supplemental Indenture, dated December 2, 2020, among NRG Energy, Inc., the guarantors named therein and Deutsche Bank Trust Company Americas, as trustee, pertaining to the Secured Notes](#) Incorporated herein by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K, filed on December 4, 2020.
- 4.14 [Form of 2.000% Senior Secured First Lien Notes due 2025](#) Incorporated herein by reference to Exhibit 4.3 to the Registrant's Current Report on Form 8-K, filed on December 4, 2020.
- 4.15 [Form of 2.450% Senior Secured First Lien Notes due 2027](#) Incorporated herein by reference to Exhibit 4.4 to the Registrant's Current Report on Form 8-K, filed on December 4, 2020.
- 4.16 [Indenture, dated December 2, 2020, between NRG Energy, Inc. and Deutsche Bank Trust Company Americas, as trustee, pertaining to the Unsecured Notes](#) Incorporated herein by reference to Exhibit 4.5 to the Registrant's Current Report on Form 8-K, filed on December 4, 2020.
- 4.17 [Supplemental Indenture, dated December 2, 2020, among NRG Energy, Inc., the guarantors named therein and Deutsche Bank Trust Company Americas, as trustee, pertaining to the Unsecured Notes](#) Incorporated herein by reference to Exhibit 4.6 to the Registrant's Current Report on Form 8-K, filed on December 4, 2020.
- 4.18 [Form of 3.375% Senior Notes due 2029 \(incorporated by reference to Exhibit 4.6 filed herewith\)](#) Incorporated herein by reference to Exhibit 4.7 to the Registrant's Current Report on Form 8-K, filed on December 4, 2020.
- 4.19 [Form of 3.625% Senior Notes due 2031 \(incorporated by reference to Exhibit 4.6 filed herewith\)](#) Incorporated herein by reference to Exhibit 4.8 to the Registrant's Current Report on Form 8-K, filed on December 4, 2020.
- 4.20 [Facility Agreement, dated December 2, 2020, among NRG Energy, Inc., the guarantors party thereto, Alexander Funding Trust and Deutsche Bank Trust Company Americas, as the notes trustee](#) Incorporated herein by reference to Exhibit 4.9 to the Registrant's Current Report on Form 8-K, filed on December 4, 2020.
- 4.21 [Letter of Credit Facility Agreement, dated December 2, 2020, among NRG Energy, Inc., the financial institutions from time to time party thereto as letter of credit issuers, and Deutsche Bank Trust Company Americas, as administrative agent and as collateral agent](#) Incorporated herein by reference to Exhibit 4.10 to the Registrant's Current Report on Form 8-K, filed on December 4, 2020.
- 4.22 [Amended and Restated Declaration of Trust of Alexander Funding Trust, dated December 2, 2020, among NRG Energy, Inc. as depositor and in its own capacity, Deutsche Bank Trust Company Americas, as trustee, and Deutsche Bank Trust Company Delaware, as Delaware trustee](#) Incorporated herein by reference to Exhibit 4.11 to the Registrant's Current Report on Form 8-K, filed on December 4, 2020.
- 4.23 [Indenture, dated December 2, 2020, between NRG Energy, Inc. and Deutsche Bank Trust Company Americas, as trustee, pertaining to the P-Caps Secured Notes](#) Incorporated herein by reference to Exhibit 4.12 to the Registrant's Current Report on Form 8-K, filed on December 4, 2020.
- 4.24 [Supplemental Indenture, dated December 2, 2020, among NRG Energy, Inc., the guarantors named therein and Deutsche Bank Trust Company Americas, as trustee, pertaining to the P-Caps Secured Notes](#) Incorporated herein by reference to Exhibit 4.13 to the Registrant's Current Report on Form 8-K, filed on December 4, 2020.
- 4.25 [Form of 1.841% Senior Secured First Lien Notes due 2023\(incorporated by reference to Exhibit 4.31 filed herewith\)](#) Incorporated herein by reference to Exhibit 4.14 to the Registrant's Current Report on Form 8-K, filed on December 4, 2020.
- 4.26 [Amendment and Restatement Agreement, dated as of June 30, 2016, to the Amended and Restated Credit Agreement, the Second Amended and Restated Collateral Trust Agreement and the Amended and Restated Guarantee and Collateral Agreement.](#) Incorporated herein by reference to Exhibit 10.1 to the Registrant's quarterly report on Form 10-Q filed on August 9, 2016.
- 4.27 [Second Amended and Restated Credit Agreement, dated as of June 30, 2016, by and among NRG Energy, Inc., the lenders party thereto, the joint lead arrangers and joint lead bookrunners party thereto, Citicorp North America, Inc., Commerzbank AG, New York Branch, Keybank Capital Markets Inc. and CIT Bank, N.A.](#) Incorporated herein by reference to Exhibit 10.2 to the Registrant's quarterly report on Form 10-Q filed on August 9, 2016.
- 4.28 [First Amendment Agreement, dated as of January 24, 2017, dated as of January 24, 2017, by and among NRG Energy, Inc., the lenders from time to time parties thereto and Citicorp North America, Inc., as administrative agent and collateral agent.](#) Incorporated herein by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on January 24, 2017.

- 4.29 [Second Amendment Agreement, dated as of March 21, 2018, by and among NRG Energy, Inc., the lenders from time to time parties thereto and Citicorp North America, Inc., as administrative agent and collateral agent.](#) Incorporated herein by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on March 22, 2018.
- 4.30 [Third Amendment Agreement, dated as of May 7, 2018, by and among NRG Energy, Inc., its subsidiaries parties thereto, the lenders from time to time parties thereto and Citicorp North America, Inc., as administrative agent and collateral agent.](#) Incorporated herein by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on May 7, 2018.
- 4.31 [Indenture, dated May 23, 2016, between NRG Energy, Inc. and Delaware Trust Company \(as successor in interest to Law Debenture Trust Company of New York\), as trustee.](#) Incorporated herein by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed on May 23, 2016.
- 4.32 [Fifth Supplemental Indenture, dated May 14, 2019, among NRG Energy, Inc., the guarantors named therein and Delaware Trust Company, as trustee.](#) Incorporated herein by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed on May 16, 2019.
- 4.33 [Form of 5.250% Senior Notes due 2029.](#) Incorporated herein by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed on May 14, 2019.
- 4.34 [Indenture, dated May 28, 2019, between NRG Energy, Inc. and Delaware Trust Company, as trustee](#) Incorporated herein by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed on May 30, 2019.
- 4.35 [Supplemental Indenture, dated May 28, 2019, among NRG Energy, Inc., the guarantors named therein and Delaware Trust Company, as trustee.](#) Incorporated herein by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed on May 30, 2019.
- 4.36 [Form of 3.750% Senior Secured First Lien Notes due 2024](#) Incorporated herein by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed on May 30, 2019.
- 4.37 [Form of 4.450% Senior Secured First Lien Notes due 2029](#) Incorporated herein by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed on May 30, 2019.
- 4.38 [Fourth Amendment dated as of May 28, 2019 to the Second Amended and Restated Credit Agreement dated as of June 30, 2016, included as Annex A thereto a clean, conformed copy of the Second Amended and Restated Credit Agreement](#) Incorporated herein by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on November 7, 2019.
- 4.39 [Fifth Amendment to Credit Agreement and Third Amendment to Collateral Trust Agreement, dated as of August 20, 2020, by and among NRG Energy, Inc., its subsidiaries parties thereto, the lenders party thereto, Citicorp North America, Inc., as administrative agent and collateral agent, and Deutsche Bank Trust Company Americas, as collateral trustee.](#) Incorporated herein by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on August 21, 2020.
- 4.40 [Receivables Sale Agreement, dated as of September 22, 2020, among the Originators from time to time parties thereto, NRG Retail LLC, as Servicer, and NRG Receivables LLC.](#) Incorporated herein by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on September 22, 2020.
- 4.41 [Receivables Loan and Servicing Agreement, dated as of September 22, 2020, among NRG Receivables LLC, as Borrower, NRG Retail LLC, as Servicer, the persons from time to time party thereto as Conduit Lenders, the persons from time to time party thereto as Committed Lenders, the persons from time to time party thereto as Facility Agents, the financial institutions from time to time party thereto as LC Issuers, and Royal Bank of Canada as Administrative Agent](#) Incorporated herein by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed on September 22, 2020.
- 4.42 [Supplemental Indenture \(Additional Subsidiary Guarantees-2.750% Convertible Senior Notes due 2048\) dated January 5, 2021, among NRG Energy, Inc., each of its guarantor subsidiaries, and Delaware Trust Company as trustee.](#) Incorporated herein by reference to Exhibit 4.1 to the Registrant's quarterly report on Form 10-Q filed on May 6, 2021.
- 4.43 [Supplemental Indenture \(Additional Subsidiary Guarantees 1.841% Senior Secured First Lien Notes due 2023\) dated January 5, 2021, among NRG Energy, Inc., each of its guarantor subsidiaries, and Deutsche Bank Trust Company Americas as trustee.](#) Incorporated herein by reference to Exhibit 4.2 to the Registrant's quarterly report on Form 10-Q filed on May 6, 2021.

4.44	<u>Supplemental Indenture (additional Subsidiary Guarantees-6.625% Senior Notes due 2027) dated January 5, 2021, among NRG Energy, Inc., each of its guarantor subsidiaries, and Delaware Trust Company as trustee.</u>	Incorporated herein by reference to Exhibit 4.4 to the Registrant's quarterly report on Form 10-Q filed on May 6, 2021.
4.45	<u>Supplemental Indenture (additional Subsidiary Guarantees-5.750% Senior Notes due 2028) dated January 5, 2021, Supplemental Indenture (additional Subsidiary Guarantees-5.750% Senior Notes due 2028) dated January 5, 2021, among NRG Energy, Inc., each of its guarantor subsidiaries, and Delaware Trust Company as trustee.</u>	Incorporated herein by reference to Exhibit 4.5 to the Registrant's quarterly report on Form 10-Q filed on May 6, 2021.
4.46	<u>Supplemental Indenture (additional Subsidiary Guarantees-5.250% Senior Notes due 2029) dated January 5, 2021, among NRG Energy, Inc., each of its guarantor subsidiaries, and Delaware Trust Company as trustee.</u>	Incorporated herein by reference to Exhibit 4.6 to the Registrant's quarterly report on Form 10-Q filed on May 6, 2021.
4.47	<u>Supplemental Indenture (Additional Subsidiary Guarantees 3.375% Senior Notes due 2029 and 3.625% Senior Notes due 2031) dated January 5, 2021, among NRG Energy, Inc., each of its guarantor subsidiaries, and Deutsche Bank Trust Company Americas as trustee.</u>	Incorporated herein by reference to Exhibit 4.7 to the Registrant's quarterly report on Form 10-Q filed on May 6, 2021.
4.48	<u>Supplemental Indenture (additional Subsidiary Guarantees-3.750% Senior Secured First Lien Notes due 2024 and 4.450% Senior Secured First Lien Notes due 2029) dated January 5, 2021, among NRG Energy, Inc., each of its guarantor subsidiaries, and Delaware Trust Company as trustee.</u>	Incorporated herein by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K, filed on August 23, 2021.
4.49	<u>Supplemental Indenture (Additional Subsidiary Guarantees 2.000% Senior Secured First Lien Notes due 2025 and 2.450% Senior Secured First Lien Notes due 2027) dated January 5, 2021, among NRG Energy, Inc., each of its guarantor subsidiaries, and Deutsche Bank Trust Company Americas as trustee.</u>	Incorporated herein by reference to Exhibit 4.3 to the Registrant's Current Report on Form 8-K, filed on August 23, 2021.
4.50	<u>Second Supplemental Indenture, dated August 23, 2021, among NRG Energy, Inc., the guarantors named therein and Deutsche Bank Trust Company Americas, as trustee.</u>	Incorporated herein by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K, filed on August 23, 2021.
4.51	<u>Form of 3.875% Senior Notes due 2032.</u>	Incorporated herein by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K, filed on August 23, 2021.
4.52	<u>Supplemental Indenture (Settlement Elections - 2.750% Convertible Senior Notes due 2048) dated February 22, 2022, among NRG Energy, Inc., each of its guarantor subsidiaries, and Delaware Trust Company as trustee.</u>	Filed herewith.
4.53	<u>Supplemental Indenture (Additional Subsidiary Guarantees-2.750% Convertible Senior Notes due 2048) dated February 17, 2022, among NRG Energy, Inc., each of its guarantor subsidiaries, and Delaware Trust Company as trustee.</u>	Filed herewith.
4.54	<u>Supplemental Indenture (Additional Subsidiary Guarantees-1.841% Senior Secured First Lien Notes due 2023) dated February 17, 2022, among NRG Energy, Inc., each of its guarantor subsidiaries, and Deutsche Bank Trust Company Americas as trustee.</u>	Filed herewith.
4.55	<u>Supplemental Indenture (Additional Subsidiary Guarantees-6.625% Senior Notes due 2027) dated February 17, 2022, among NRG Energy, Inc., each of its guarantor subsidiaries, and Delaware Trust Company as trustee.</u>	Filed herewith.
4.56	<u>Supplemental Indenture (Additional Subsidiary Guarantees-5.750% Senior Notes due 2028) dated February 17, 2022, among NRG Energy, Inc., each of its guarantor subsidiaries, and Delaware Trust Company as trustee.</u>	Filed herewith.
4.57	<u>Supplemental Indenture (Additional Subsidiary Guarantees-5.250% Senior Notes due 2029) dated February 17, 2022, among NRG Energy, Inc., each of its guarantor subsidiaries, and Delaware Trust Company as trustee.</u>	Filed herewith.

4.58	<u>Supplemental Indenture (Additional Subsidiary Guarantees-3.375% Senior Notes due 2029 and 3.625% Senior Notes due 2031) dated February 17, 2022, among NRG Energy, Inc., each of its guarantor subsidiaries, and Deutsche Bank Trust Company Americas as trustee.</u>	Filed herewith.
4.59	<u>Supplemental Indenture (Additional Subsidiary Guarantees-3.750% Senior Secured First Lien Notes due 2024 and 4.450% Senior Secured First Lien Notes due 2029) dated February 17, 2022, among NRG Energy, Inc., each of its guarantor subsidiaries, and Delaware Trust Company as trustee.</u>	Filed herewith.
4.60	<u>Supplemental Indenture (Additional Subsidiary Guarantees-2.000% Senior Secured First Lien Notes due 2025 and 2.450% Senior Secured First Lien Notes due 2027) dated February 17, 2022, among NRG Energy, Inc., each of its guarantor subsidiaries, and Deutsche Bank Trust Company Americas as trustee.</u>	Filed herewith.
4.61	<u>Supplemental Indenture (Additional Subsidiary Guarantees-3.875% Senior Notes due 2032) dated February 17, 2022, among NRG Energy, Inc., each of its guarantor subsidiaries, and Deutsche Bank Trust Company Americas as trustee.</u>	Filed herewith.
10.1*	<u>Form of NRG Energy, Inc. Long-Term Incentive Plan Deferred Stock Unit Agreement for Directors.</u>	Incorporated herein by reference to Exhibit 10.15 to the Registrant's annual report on Form 10-K filed on March 30, 2005.
10.2*	<u>Form of NRG Energy, Inc. Long-Term Incentive Plan Restricted Stock Unit Agreement for Officers.</u>	Incorporated herein by reference to Exhibit 10.6 to the Registrant's annual report on Form 10-K filed on March 1, 2018.
10.3*	<u>Form of NRG Energy, Inc. Long-Term Incentive Plan Restricted Stock Unit Agreement for Non-Officers.</u>	Incorporated herein by reference to Exhibit 10.7 to the Registrant's annual report on Form 10-K filed on March 1, 2018.
10.4*	<u>Form of NRG Energy, Inc. Long-Term Incentive Plan Performance Stock Unit Agreement.</u>	Incorporated herein by reference to Exhibit 10.7 to the Registrant's annual report on Form 10-K filed on February 23, 2010.
10.5*	<u>Second Amended and Restated Annual Incentive Plan for Designated Corporate Officers.</u>	Incorporated herein by reference to Exhibit 10.1 to the Registrant's current report on Form 8-K filed on May 7, 2015.
10.6†	<u>LLC Membership Interest Purchase Agreement between Reliant Energy, Inc. and NRG Retail LLC, dated as of February 28, 2009.</u>	Incorporated herein by reference to Exhibit 10.1 to the Registrant's quarterly report on Form 10-Q filed on April 30, 2009.
10.7*	<u>The NRG Energy, Inc. Amended and Restated Long-Term Incentive Plan.</u>	Incorporated herein by reference to Exhibit 10.1 to the Registrant's current report on Form 8-K filed on April 28, 2017.
10.8*	<u>NRG 2010 Stock Plan for GenOn Employees.</u>	Incorporated herein by reference to Exhibit 10.49 to the Registrant's annual report on Form 10-K filed on February 27, 2013.
10.9*	<u>NRG Energy, Inc. Long-Term Incentive Plan Market Stock Unit Agreement.</u>	Incorporated herein by reference to Exhibit 10.53 to the Registrant's annual report on Form 10-K filed on February 28, 2014.
10.10*	<u>NRG Energy, Inc. 2010 Stock Plan For GenOn Employees Market Stock Unit Agreement</u>	Incorporated herein by reference to Exhibit 10.54 to the Registrant's annual report on Form 10-K filed on February 28, 2014.
10.11	<u>Employment Agreement, dated December 21, 2015, by and between NRG Energy, Inc. and Mauricio Gutierrez.</u>	Incorporated herein by reference to Exhibit 10.1 to the Registrant's current report on Form 8-K filed on December 24, 2015.
10.12	<u>Settlement Agreement, dated as of December 14, 2017, by and between NRG Energy, Inc. on behalf of itself and the NRG Parties, GenOn Energy, Inc. on behalf of itself and the Debtors.</u>	Incorporated herein by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on December 18, 2017.
10.13	<u>Pension Indemnity Agreement, dated as of December 14, 2017, by and between NRG Energy, Inc. and GenOn Energy, Inc.</u>	Incorporated herein by reference to Exhibit 10.4 to the Registrant's Current Report on Form 8-K filed on December 18, 2017.

10.14	Tax Matters Agreement, initially dated as of December 14, 2017, by and between NRG Energy, Inc. and GenOn Energy, Inc. and by Reorganized GenOn upon the Effective Date.	Incorporated herein by reference to Exhibit 10.5 to the Registrant's Current Report on Form 8-K filed on December 18, 2017.
10.15*	Form of NRG Energy, Inc. Long-Term Incentive Plan Relative Performance Stock Unit Agreement for Officers.	Incorporated herein by reference to Exhibit 10.73 to the Registrant's annual report on Form 10-K filed on March 1, 2018.
10.16*	Form of NRG Energy, Inc. Long-Term Incentive Plan Relative Performance Stock Unit Agreement for Senior Vice Presidents.	Incorporated herein by reference to Exhibit 10.74 to the Registrant's annual report on Form 10-K filed on March 1, 2018.
10.17†	Consent and Indemnity Agreement, dated as of February 6, 2018, by and among NRG Energy, Inc., NRG Repowering Holdings LLC, NRG Yield, Inc., and GIP III Zephyr Acquisition Partners, L.P., and NRG Yield Operating LLC (solely with respect to Sections E.5, E.6 and G.12).	Incorporated herein by reference to Exhibit 10.34 to NRG Yield, Inc.'s Annual Report on Form 10-K filed on March 1, 2018.
10.18*	Amended and Restated Employee Stock Purchase Plan	Incorporated herein by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed on May 2, 2019.
10.19*	NRG Energy, Inc. Amended and Restated Executive Change-in-Control and General Severance Plan for Tier IA and Tier IIA Executives (Amended and Restated Effective April 1, 2018).	Incorporated herein by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q filed on August 2, 2018.
10.20	A copy of Amendment No. 1 to Receivables Loan and Servicing Agreement, dated as of July 26, 2021, among NRG Retail LLC, as Servicer, NRG Receivables LLC, as Borrower, NRG Energy, Inc., as Performance Guarantor, the Conduit Lenders, Committed Lenders, Facility Agents and LC Issuers party, and Royal Bank of Canada, as administrative Agent, and included as Exhibit A-2 thereto a clean, conformed copy of the Receivables Loan and Servicing Agreement.	Incorporated herein by reference to Exhibit 4.9 to the Registrant's quarterly report on Form 10-Q filed on August 5, 2021.
10.21*	Form of NRG Energy, Inc. Long-Term Incentive Plan Relative Performance Stock Unit Agreement for Chief Executive Officer	Filed herewith.
10.22*	Form of NRG Energy, Inc. Long-Term Incentive Plan Relative Performance Stock Unit Agreement for Executive Vice Presidents	Filed herewith.
10.23*	Form of NRG Energy, Inc. Long-Term Incentive Plan Relative Performance Stock Unit Agreement for Senior Vice Presidents.	Filed herewith.
21.1	Subsidiaries of NRG Energy, Inc.	Filed herewith.
22.1	List of Guarantor Subsidiaries	Filed herewith.
23.1	Consent of KPMG LLP.	Filed herewith.
31.1	Rule 13a-14(a)/15d-14(a) certification of Mauricio Gutierrez.	Filed herewith.
31.2	Rule 13a-14(a)/15d-14(a) certification of Alberto Fornaro.	Filed herewith.
31.3	Rule 13a-14(a)/15d-14(a) certification of Emily Picarello.	Filed herewith.
32	Section 1350 Certification.	Furnished herewith.
101 INS	Inline XBRL Instance Document.	The instance document does not appear in the interactive data file because its XBRL tags are embedded within the inline XBRL document.
101 SCH	Inline XBRL Taxonomy Extension Schema.	Filed herewith.
101 CAL	Inline XBRL Taxonomy Extension Calculation Linkbase.	Filed herewith.
101 DEF	Inline XBRL Taxonomy Extension Definition Linkbase.	Filed herewith.
101 LAB	Inline XBRL Taxonomy Extension Label Linkbase.	Filed herewith.
101 PRE	Inline XBRL Taxonomy Extension Presentation Linkbase.	Filed herewith.
104	Cover Page Interactive Data File (the cover page interactive data file does not appear in Exhibit 104 because it's Inline XBRL tags are embedded within the Inline XBRL document).	Filed herewith.

- * Exhibit relates to compensation arrangements.
- † Portions of this exhibit have been redacted and are subject to a confidential treatment request filed with the Secretary of the Securities and Exchange Commission pursuant to Rule 24b-2 under the Securities Exchange Act of 1934, as amended.
- ^ This filing excludes schedules pursuant to Item 601(b)(2) of Regulation S-K, which the registrant agrees to furnish supplementary to the Securities and Exchange Commission upon request by the Commission.
- ‡ Portions of this exhibit have been excluded because they are both not material and would likely cause competitive harm to the registrant if publicly disclosed. Information that has been omitted has been noted in this document with a placeholder identified by the mark “[***]”.

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) 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.

NRG ENERGY, INC.
(Registrant)

By: /s/ MAURICIO GUTIERREZ

Mauricio Gutierrez
Chief Executive Officer

Date: February 24, 2022

POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints Brian E. Curci and Christine A. Zoino, each or any of them, such person's true and lawful attorney-in-fact and agent with full power of substitution and resubstitution for such person and in such person's name, place and stead, in any and all capacities, to sign any and all amendments to this report on Form 10-K, and to file the same with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing necessary or desirable to be done in and about the premises, as fully to all intents and purposes as such person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them or his or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

In accordance with the Exchange Act, this report has been signed by the following persons on behalf of the registrant in the capacities indicated on February 24, 2022.

Signature	Title	Date
<u>/s/ MAURICIO GUTIERREZ</u> Mauricio Gutierrez	President, Chief Executive Officer and Director (Principal Executive Officer)	February 24, 2022
<u>/s/ ALBERTO FORNARO</u> Alberto Fornaro	Chief Financial Officer (Principal Financial Officer)	February 24, 2022
<u>/s/ EMILY PICARELLO</u> Emily Picarello	Corporate Controller (Principal Accounting Officer)	February 24, 2022
<u>/s/ LAWRENCE S. COBEN</u> Lawrence S. Coben	Chair of the Board	February 24, 2022
<u>/s/ E. SPENCER ABRAHAM</u> E. Spencer Abraham	Director	February 24, 2022
<u>/s/ ANTONIO CARRILLO</u> Antonio Carrillo	Director	February 24, 2022
<u>/s/ MATTHEW CARTER, JR.</u> Matthew Carter, Jr.	Director	February 24, 2022
<u>/s/ HEATHER COX</u> Heather Cox	Director	February 24, 2022
<u>/s/ ELISABETH B. DONOHUE</u> Elisabeth B. Donohue	Director	February 24, 2022
<u>/s/ PAUL W. HOBBY</u> Paul W. Hobby	Director	February 24, 2022
<u>/s/ ALEXANDRA PRUNER</u> Alexandra Pruner	Director	February 24, 2022
<u>/s/ ANNE C. SCHAUMBURG</u> Anne C. Schaumburg	Director	February 24, 2022
<u>/s/ THOMAS H. WEIDEMEYER</u> Thomas H. Weidemeyer	Director	February 24, 2022