

2021

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

FORM 10-K

(Mark One)

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

For the fiscal year ended

December 31, 2021

OR

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

☐

For the transition period from

to

Commission file number: 001-35349

Phillips 66

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

45-3779385

(I.R.S. Employer Identification No.)

2331 CityWest Blvd., Houston, Texas 77042

(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: 281-293-6600

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, \$0.01 Par Value	PSX	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 Act.
☐
Yes
☒
No

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

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

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

Large accelerated filer

☒

Accelerated filer

☐

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

The aggregate market value of common stock held by non-affiliates of the registrant on June 30, 2021, the last business day of the registrant's most recently completed second fiscal quarter, based on the closing price on that date of \$85.82, was \$37.5 billion. The registrant, solely for the purpose of this required presentation, had deemed its Board of Directors and executive officers to be affiliates, and deducted their stockholdings in determining the aggregate market value.

The registrant had 438,461,584 shares of common stock outstanding at January 31, 2022.

Documents incorporated by reference:

Portions of the Proxy Statement for the Annual Meeting of Stockholders to be held on May 11, 2022 (Part III).

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Unless otherwise indicated, “the company,” “we,” “our,” “us” and “Phillips 66” are used in this report to refer to the businesses of Phillips 66 and its consolidated subsidiaries.

This Annual Report on Form 10-K contains forward-looking statements including, without limitation, statements relating to our plans, strategies, objectives, expectations and intentions that are made pursuant to the “safe harbor” provisions of the Private Securities Litigation Reform Act of 1995. The words “anticipate,” “estimate,” “believe,” “budget,” “continue,” “could,” “intend,” “may,” “plan,” “potential,” “predict,” “seek,” “should,” “will,” “would,” “expect,” “objective,” “projection,” “forecast,” “goal,” “guidance,” “outlook,” “effort,” “target” and similar expressions often identify forward-looking statements, but the absence of these words does not mean a statement is not forward-looking. The company does not undertake to update, revise or correct any forward-looking information unless required to do so under the federal securities laws. Readers are cautioned that such forward-looking statements should be read in conjunction with the company’s disclosures under the headings “Risk Factors” and “CAUTIONARY STATEMENT FOR THE PURPOSES OF THE ‘SAFE HARBOR’ PROVISIONS OF THE PRIVATE SECURITIES LITIGATION REFORM ACT OF 1995.”

PART I

Items 1 and 2. BUSINESS AND PROPERTIES

CORPORATE STRUCTURE

Phillips 66, headquartered in Houston, Texas, was incorporated in Delaware in 2011 in connection with, and in anticipation of, a restructuring of ConocoPhillips that separated its downstream businesses into an independent, publicly traded company named Phillips 66. The two companies were separated by ConocoPhillips distributing to its stockholders all the shares of common stock of Phillips 66 after the market closed on April 30, 2012 (the separation). Phillips 66 stock trades on the New York Stock Exchange under the “PSX” stock symbol.

Our business is organized into four operating segments:

- 1) **Midstream**—Provides crude oil and refined petroleum product transportation, terminaling and processing services, as well as natural gas and natural gas liquids (NGL) transportation, storage, fractionation, processing and marketing services, mainly in the United States. This segment includes our master limited partnership (MLP), Phillips 66 Partners LP (Phillips 66 Partners), our 50% equity investment in DCP Midstream, LLC (DCP Midstream), and our 16% investment in NOVONIX Limited (NOVONIX), a company that develops technology and supplies materials for lithium-ion batteries.
- 2) **Chemicals**—Consists of our 50% equity investment in Chevron Phillips Chemical Company LLC (CPCChem), which manufactures and markets petrochemicals and plastics on a worldwide basis.
- 3) **Refining**—Refines crude oil and other feedstocks into petroleum products, such as gasoline, distillates and aviation fuels, as well as renewable fuels, at 12 refineries in the United States and Europe.
- 4) **Marketing and Specialties (M&S)**—Purchases for resale and markets refined petroleum products and renewable fuels, mainly in the United States and Europe. In addition, this segment includes the manufacturing and marketing of specialty products, such as base oils and lubricants.

Corporate and Other includes general corporate overhead, interest expense, our investment in new technologies and various other corporate activities. Corporate assets include all cash, cash equivalents and income tax-related assets.

SEGMENT AND GEOGRAPHIC INFORMATION

MIDSTREAM

The Midstream segment consists of three business lines:

- Transportation—Transports crude oil and other feedstocks to our refineries and other locations, delivers refined petroleum products to market, and provides terminaling and storage services for crude oil and refined petroleum products.
- NGL and Other—Transports, stores, fractionates, exports and markets NGL, provides other fee-based processing services. It also includes our 16% investment in NOVONIX.
- DCP Midstream—Gathers, processes, transports and markets natural gas and transports, fractionates and markets NGL.

Phillips 66 Partners

Phillips 66 Partners, headquartered in Houston, Texas, is a publicly traded MLP formed in 2013, which owns and operates primarily fee-based midstream assets. At December 31, 2021, we owned a noneconomic general partner interest and 170 million Phillips 66 Partners common units, representing a 74% limited partner interest in Phillips 66 Partners, while the public owned a 26% limited partner interest and 13.5 million perpetual convertible preferred units. Phillips 66 Partners' operations consist of crude oil, refined petroleum product and NGL transportation, terminaling, fractionation, processing and storage assets that are geographically dispersed throughout the United States. The majority of Phillips 66 Partners' assets are associated with, and integral to, Phillips 66 operated refineries. The results of operations of Phillips 66 Partners are included in Midstream's Transportation and NGL and Other business lines, based on the nature of the activity within the partnership.

On October 26, 2021, we entered into a definitive merger agreement with Phillips 66 Partners to acquire all of the limited partner interests in Phillips 66 Partners not already owned by us on the closing date of the transaction. The agreement provides for an all-stock transaction in which each outstanding Phillips 66 Partners common unitholder would receive 0.50 shares of Phillips 66 common stock for each Phillips 66 Partners common unit. Phillips 66 Partners' perpetual convertible preferred units would be converted into common units at a premium to the original issuance price prior to exchange for Phillips 66 common stock. This merger is expected to close in March 2022, subject to customary closing conditions. Upon closing, Phillips 66 Partners will become a wholly owned subsidiary of Phillips 66 and will no longer be a publicly traded partnership.

Transportation

We own or lease various assets to provide transportation, terminaling and storage services. These assets include crude oil, refined petroleum product, NGL, and natural gas pipeline systems; crude oil, refined petroleum product and NGL terminals; a petroleum coke handling facility; marine vessels; railcars and trucks.

Pipelines and Terminals

At December 31, 2021, our Transportation business was comprised of over 22,000 miles of crude oil, refined petroleum product, NGL and natural gas pipeline systems in the United States, including those partially owned or operated by our affiliates. We owned or operated 39 refined petroleum product terminals, 20 crude oil terminals, 5 NGL terminals, a petroleum coke exporting facility and various other storage and loading facilities.

Phillips 66 Partners owns a 25% interest in the South Texas Gateway Terminal, which connects to the Gray Oak Pipeline in Corpus Christi, Texas. The marine export terminal commissioned additional storage capacity in the first quarter of 2021, bringing total capacity to 8.6 million barrels and marking completion of the final construction phase. The marine export terminal has two deepwater docks with up to 800,000 barrels per day (BPD) of export capacity.

Phillips 66 Partners completed construction of the C2G Pipeline, a 16 inch ethane pipeline that connects its Clemens Caverns storage facility to petrochemical facilities in Gregory, Texas, near Corpus Christi. The pipeline began commercial operations in the fourth quarter of 2021 and is supported by long-term commitments.

In the first half of 2021, Phillips 66 Partners exited the Liberty Pipeline project and transferred its ownership interest in the joint venture to its co-venturer. See the “Liberty Pipeline LLC (Liberty)” section of Note 6—Investments, Loans and Long-Term Receivables, in the Notes to Consolidated Financial Statements, for additional information regarding the Liberty Pipeline project.

The Dakota Access Pipeline is currently subject to litigation that could affect operations. See the “Dakota Access, LLC (Dakota Access) and Energy Transfer Crude Oil Company, LLC (ETCO)” section of Note 6—Investments, Loans and Long-Term Receivables, in the Notes to Consolidated Financial Statements, for additional information on this litigation.

The following table depicts our ownership interest in major pipeline systems at December 31, 2021:

Name	State of Origination/Terminus	Interest	Length (Miles)	Gross Capacity (MBD)
Crude Oil				
Bakken Pipeline †	North Dakota/Texas	25 %	1,918	750
Bayou Bridge †	Texas/Louisiana	40	213	480
Clifton Ridge †	Louisiana	100	10	260
CushPo †	Oklahoma	100	62	130
Eagle Ford Gathering †	Texas	100	28	58
Glacier †	Montana	79	800	124
Gray Oak Pipeline* †	Texas	42	862	900
Line 100	California	100	79	61
Line 200	California	100	228	100
Line 300	California	100	61	34
Line 400	California	100	153	46
Line O †	Oklahoma/Texas	100	276	38
New Mexico Crude †	New Mexico/Texas	100	227	106
North Texas Crude †	Texas	100	142	34
Oklahoma Crude †	Texas/Oklahoma	100	217	100
Sacagawea †	North Dakota	50	95	183
STACK PL †	Oklahoma	50	149	250
Sweeny Crude	Texas	100	56	617
West Texas Crude †	Texas	100	1,079	140
Refined Petroleum Products				
ATA Line †	Texas/New Mexico	50	293	34
Borger to Amarillo †	Texas	100	93	74
Borger-Denver	Texas	100	38	39
Borger-Denver	Texas/Colorado	65	207	39
Borger-Denver	Colorado	70	152	39
Cherokee East †	Oklahoma/Missouri	100	292	59
Cherokee North †	Oklahoma/Kansas	100	29	55
Cherokee South †	Oklahoma	100	98	47
Cross Channel Connector †	Texas	100	5	184
Explorer †	Texas/Indiana	22	1,830	660
Gold Line †	Texas/Illinois	100	686	120
Heartland**	Kansas/Iowa	50	49	30
LAX Jet Line	California	50	19	25
Los Angeles Products	California	100	22	132
Paola Products †	Kansas	100	106	120
Pioneer	Wyoming/Utah	50	562	63
Powder River	Colorado/Texas	100	350	13
Richmond	California	100	14	31
SAAL †	Texas	33	102	32
SAAL †	Texas	54	19	30
Seminole †	Montana/Wyoming	100	342	44
Standish †	Oklahoma/Kansas	100	92	77
Sweeny to Pasadena †	Texas	100	120	335
Torrance Products	California	100	8	279
Watson Products	California	100	9	238
Yellowstone	Montana/Washington	46	710	68

Name	State of Origination/Terminus	Interest	Length (Miles)	Gross Capacity (MBD)
NGL				
Blue Line	Texas/Illinois	100 %	688	26
Brown Line †	Oklahoma/Kansas	100	76	26
C2G †	Texas	100	155	135
Chisholm	Oklahoma/Kansas	50	202	42
Conway to Wichita	Kansas	100	55	26
Medford †	Oklahoma	100	42	25
Powder River	Wyoming/Colorado	100	366	16
River Parish NGL †	Louisiana	100	499	104
Sand Hills †	New Mexico/Texas	33	1,400	500
Skelly-Belvieu	Texas	50	571	45
Southern Hills †	Kansas/Texas	33	981	192
Sweeny LPG	Texas	100	260	942
Sweeny NGL	Texas	100	18	204
TX Panhandle Y1/Y2	Texas	100	289	78
Natural Gas				
Rockies Express***				
East to West	Ohio/Illinois	25	661	2.6 Bcf/d
West to East	Colorado/Ohio	25	1,712	1.8 Bcf/d
Sacagawea Gas †	North Dakota	50	24	0.18 Bcf/d

† Owned by Phillips 66 Partners; Phillips 66 held 74% of the limited partner interest in Phillips 66 Partners at December 31, 2021.

* Interest reflects Phillips 66 Partners' proportionate share of the Gray Oak Pipeline, net of a noncontrolling interest.

** Total pipeline system is 419 miles. Phillips 66 has an ownership interest in multiple segments totaling 49 miles.

*** Total pipeline system consists of three zones for a total of 1,712 miles. The third zone of the pipeline is bidirectional and can transport 2.6 Bcf/d of natural gas from east to west.

The following table depicts our ownership interest in terminal and storage facilities at December 31, 2021:

Facility Name	Location	Commodity Handled	Interest	Gross Storage Capacity (MBbl)	Gross Rack Capacity (MBD)
Albuquerque †	New Mexico	Refined Petroleum Products	100 %	274	20
Amarillo †	Texas	Refined Petroleum Products	100	296	23
Beaumont	Texas	Crude Oil, Refined Petroleum Products	100	16,800	8
Billings	Montana	Refined Petroleum Products	100	81	12
Billings Crude †	Montana	Crude Oil	100	236	N/A
Borger	Texas	Crude Oil	50	772	N/A
Bozeman	Montana	Refined Petroleum Products	100	90	5
Buffalo Crude †	Montana	Crude Oil	100	303	N/A
Casper †	Wyoming	Refined Petroleum Products	100	365	7
Clemens †	Texas	NGL	100	16,500	N/A
Clifton Ridge †	Louisiana	Crude Oil	100	3,800	N/A
Coalinga	California	Crude Oil	100	817	N/A
Colton	California	Refined Petroleum Products	100	207	20
Cushing †	Oklahoma	Crude Oil	100	675	N/A
Cut Bank †	Montana	Crude Oil	100	315	N/A
Denver	Colorado	Refined Petroleum Products	100	441	43
Des Moines	Iowa	Refined Petroleum Products	50	217	12
East St. Louis †	Illinois	Refined Petroleum Products	100	1,529	55
Freeport	Texas	Crude Oil, Refined Petroleum Products, NGL	100	3,485	N/A
Glenpool †	Oklahoma	Refined Petroleum Products	100	571	18
Great Falls	Montana	Refined Petroleum Products	100	198	6
Hartford †	Illinois	Refined Petroleum Products	100	1,468	21
Helena	Montana	Refined Petroleum Products	100	195	5
Jefferson City †	Missouri	Refined Petroleum Products	100	103	15
Jones Creek	Texas	Crude Oil	100	2,580	N/A
Junction	California	Crude Oil, Refined Petroleum Products	100	524	N/A
Kansas City †	Kansas	Refined Petroleum Products	100	1,410	50
Keene †	North Dakota	Crude Oil	50	503	N/A
La Junta	Colorado	Refined Petroleum Products	100	109	5
Lake Charles Pipeline Storage	Louisiana	Refined Petroleum Products	50	3,143	N/A
Lincoln	Nebraska	Refined Petroleum Products	100	217	12
Linden †	New Jersey	Refined Petroleum Products	100	360	95
Los Angeles	California	Refined Petroleum Products	100	156	80
Lubbock †	Texas	Refined Petroleum Products	100	182	18
Medford Spheres †	Oklahoma	NGL	100	70	N/A
Missoula	Montana	Refined Petroleum Products	50	365	14
Moses Lake	Washington	Refined Petroleum Products	50	216	10
Mount Vernon †	Missouri	Refined Petroleum Products	100	365	40
North Salt Lake	Utah	Refined Petroleum Products	50	755	60
North Spokane	Washington	Refined Petroleum Products	100	492	N/A
Odessa †	Texas	Crude Oil	100	521	N/A
Oklahoma City †	Oklahoma	Crude Oil, Refined Petroleum Products	100	355	42

Facility Name	Location	Commodity Handled	Interest	Gross Storage Capacity (MBbl)	Gross Rack Capacity (MBD)
Palermo †	North Dakota	Crude Oil	70 %	235	N/A
Paola †	Kansas	Refined Petroleum Products	100	978	N/A
Pasadena †	Texas	Refined Petroleum Products, NGL	100	3,558	65
Pecan Grove †	Louisiana	Lubricant Base Stocks, Refined Petroleum Products	100	177	N/A
Ponca City †	Oklahoma	Refined Petroleum Products	100	63	22
Ponca City Crude †	Oklahoma	Crude Oil	100	1,229	N/A
Portland	Oregon	Refined Petroleum Products	100	650	38
Renton	Washington	Refined Petroleum Products	100	243	19
Richmond	California	Refined Petroleum Products	100	343	28
River Parish †	Louisiana	NGL	100	1,500	N/A
Rock Springs	Wyoming	Refined Petroleum Products	100	132	8
Sacramento	California	Refined Petroleum Products	100	146	12
San Bernard	Texas	Refined Petroleum Products	100	222	N/A
Santa Margarita	California	Crude Oil	100	398	N/A
Sheridan †	Wyoming	Refined Petroleum Products	100	94	6
South Texas Gateway †	Texas	Crude Oil	25	8,600	N/A
Spokane	Washington	Refined Petroleum Products	100	351	20
Tacoma	Washington	Refined Petroleum Products	100	316	19
Torrance	California	Crude Oil, Refined Petroleum Products	100	2,128	N/A
Tremley Point †	New Jersey	Refined Petroleum Products	100	1,701	25
Westlake	Louisiana	Refined Petroleum Products	100	128	10
Wichita Falls †	Texas	Crude Oil	100	225	N/A
Wichita North †	Kansas	Refined Petroleum Products	100	769	20
Wichita South †	Kansas	Refined Petroleum Products	100	272	N/A

† Owned by Phillips 66 Partners; Phillips 66 held 74% of the limited partner interest in Phillips 66 Partners at December 31, 2021.

The following table depicts our ownership interest in marine, rail and petroleum coke loading and offloading facilities at December 31, 2021:

Facility Name	Location	Commodity Handled	Interest	Gross Loading Capacity*
Marine				
Beaumont	Texas	Crude Oil, Refined Petroleum Products	100 %	75
Clifton Ridge †	Louisiana	Crude Oil, Refined Petroleum Products	100	50
Freeport	Texas	Crude Oil, Refined Petroleum Products, NGL	100	46
Hartford †	Illinois	Refined Petroleum Products	100	3
Pecan Grove †	Louisiana	Lubricant Base Stocks, Refined Petroleum Products	100	6
Portland	Oregon	Crude Oil	100	10
Richmond	California	Crude Oil	100	3
San Bernard	Texas	Refined Petroleum Products	100	2
South Texas Gateway †	Texas	Crude Oil	25	120
Tacoma	Washington	Crude Oil	100	12
Tremley Point †	New Jersey	Refined Petroleum Products	100	7
Rail				
Bayway †	New Jersey	Crude Oil	100	75
Beaumont	Texas	Crude Oil	100	20
Ferndale †	Washington	Crude Oil	100	35
Missoula	Montana	Refined Petroleum Products	50	41
Palermo †	North Dakota	Crude Oil	70	100
Thompson Falls	Montana	Refined Petroleum Products	50	41
Petroleum Coke				
Lake Charles	Louisiana	Petroleum Coke	50	N/A

† Owned by Phillips 66 Partners; Phillips 66 held 74% of the limited partner interest in Phillips 66 Partners at December 31, 2021.

* Marine facilities in thousands of barrels per hour; Rail in thousands of barrels daily (MBD).

Marine Vessels

At December 31, 2021, we had 11 international-flagged crude oil, refined petroleum product and NGL tankers under time charter contracts, with capacities ranging in size from 300,000 to 2,200,000 barrels. Additionally, we had a variety of inland and offshore tug/barge units. These vessels are used primarily to transport crude oil and other feedstocks, as well as refined petroleum products for our refineries. In addition, the NGL tankers are used to export propane and butane from our fractionation, transportation and storage infrastructure.

Truck and Rail

Our truck and rail fleets support our feedstock and distribution operations. Rail movements are provided via a fleet of approximately 9,000 owned and leased railcars. Truck movements are provided through our wholly owned subsidiary, Sentinel Transportation LLC, and through numerous third-party trucking companies.

NGL and Other

Our NGL and Other business includes the following:

- The Sweeny Hub, a U.S. Gulf Coast NGL market hub consisting of three fractionators with a total fractionation capacity of 400,000 BPD, a liquefied petroleum gas (LPG) export terminal and NGL storage caverns. See below for additional information regarding Sweeny Hub Assets.
- A 12.5% undivided interest in a fractionation plant in Mont Belvieu, Texas. Our net share of its capacity is 30,250 BPD.
- A 40% undivided interest in a fractionation plant in Conway, Kansas. Our net share of its capacity is 43,200 BPD.
- A 22.5% interest in Gulf Coast Fractionators, which owns an NGL fractionation plant in Mont Belvieu, Texas. Our net share of its capacity is 32,625 BPD. This facility has been idled since December 2020.
- Phillips 66 Partners owns the River Parish NGL logistics system in southeast Louisiana, comprising approximately 500 miles of pipeline and a storage cavern connecting multiple fractionation facilities, refineries and a petrochemical facility.
- Phillips 66 Partners owns a direct one-third interest in both DCP Sand Hills Pipeline, LLC (Sand Hills) and DCP Southern Hills Pipeline, LLC (Southern Hills), which own NGL pipeline systems that connect the Eagle Ford, Permian Basin and Midcontinent production areas to the Mont Belvieu, Texas, market hub.
- Phillips 66 Partners owns a vacuum distillation unit with a capacity of 125,000 BPD and a delayed coker unit with a capacity of 70,000 BPD located at our Sweeny Refinery in Old Ocean, Texas.
- Phillips 66 Partners owns a 25,000 BPD isomerization unit at our Lake Charles Refinery. The isomerization unit increases Phillips 66's production of higher-octane gasoline blend components.
- A 16% investment in NOVONIX, a company that develops technology and supplies materials for lithium-ion batteries. See below for additional information regarding our investment in NOVONIX.

Sweeny Hub Assets

The Sweeny Hub fractionators are located adjacent to our Sweeny Refinery in Old Ocean, Texas, and supply purity ethane to the petrochemical industry and purity NGL to domestic and global markets. Raw NGL supply to the fractionators is delivered from nearby major pipelines, including the Sand Hills Pipeline. The fractionators are supported by significant infrastructure including connectivity to two NGL supply pipelines, a pipeline connecting to the Mont Belvieu market hub and the Clemens Caverns storage facility with access to our LPG export terminal in Freeport, Texas.

During the second half of 2021, we resumed construction of Frac 4 at the Sweeny Hub. The 150,000-BPD fractionator is expected to be completed in the fourth quarter of 2022 and will increase Sweeny Hub fractionation capacity to 550,000 BPD. The fractionators are supported by long-term customer commitments.

The Freeport LPG Export Terminal leverages our fractionation, transportation and storage infrastructure to supply petrochemical, heating and transportation markets globally. The terminal can simultaneously load a propane vessel and a butane vessel, and has a combined LPG export capacity of 260,000 BPD. In addition, the terminal has the capability to export natural gasoline (C5+) produced by the Sweeny Hub fractionators.

NOVONIX

In September 2021, we acquired a 16% stake in NOVONIX, a Brisbane, Australia-based company that develops technology and supplies materials for lithium-ion batteries. Our investment in NOVONIX's ordinary shares traded on the Australian Securities Exchange supports an expansion of synthetic graphite production capacity at NOVONIX's Chattanooga, Tennessee plant. In January 2022, we signed a technology development agreement with NOVONIX to advance the production and commercialization of next-generation anode materials for lithium-ion batteries. In February 2022, NOVONIX's American Depositary Receipts started trading on the Nasdaq Stock Market.

DCP Midstream

Our Midstream segment includes our 50% equity investment in DCP Midstream, which is headquartered in Denver, Colorado. The residual natural gas, primarily methane, which results from processing raw natural gas, is sold by DCP Midstream at market-based prices to marketers and end users, including large industrial companies, natural gas distribution companies and electric utilities. DCP Midstream purchases or takes custody of substantially all of its raw natural gas from producers, principally under contractual arrangements that expose DCP Midstream to the prices of NGL, natural gas and condensate. DCP Midstream also has fee-based arrangements with producers to provide midstream services such as gathering and processing. In addition, DCP Midstream markets a portion of its NGL to us and our equity affiliates under existing contracts.

At December 31, 2021, DCP Midstream, through its subsidiary DCP Midstream, LP (DCP Partners), owned or operated 35 active natural gas processing facilities, with a net processing capacity of approximately 5.4 billion cubic feet per day (Bcf/d), and approximately 56,000 miles of natural gas and NGL pipelines. DCP Midstream's owned or operated natural gas pipeline systems included gathering services for these facilities and natural gas transmission. DCP Midstream also owned or operated 9 NGL fractionation plants, along with natural gas and NGL storage facilities and NGL pipelines. During 2021, DCP Midstream completed expansion projects around its existing assets.

CHEMICALS

The Chemicals segment consists of our 50% equity investment in CPChem, which is headquartered in The Woodlands, Texas. At December 31, 2021, CPChem owned or had joint venture interests in 28 manufacturing facilities located in Belgium, Colombia, Qatar, Saudi Arabia, Singapore and the United States. Additionally, CPChem has two research and development centers in the United States.

We structure our reporting of CPChem's operations around two primary business lines: Olefins and Polyolefins (O&P) and Specialties, Aromatics and Styrenics (SA&S). The O&P business line produces and markets ethylene and other olefin products. The ethylene produced is primarily used by CPChem to produce polyethylene, normal alpha olefins (NAO) and polyethylene pipe. The SA&S business line manufactures and markets aromatics and styrenics products, such as benzene, cyclohexane, styrene and polystyrene. SA&S also manufactures and/or markets a variety of specialty chemical products including organosulfur chemicals, solvents, catalysts, and chemicals used in drilling and mining.

The manufacturing of petrochemicals and plastics involves the conversion of hydrocarbon-based raw material feedstocks into higher-value products, often through a thermal process referred to in the industry as "cracking." For example, ethylene can be produced by cracking ethane, propane, butane, natural gasoline or certain refinery liquids, such as naphtha and gas oil. Ethylene primarily is used as a raw material in the production of plastics, such as polyethylene and polyvinyl chloride (PVC). Plastic resins, such as polyethylene, are manufactured in a thermal/catalyst process, and the produced output is used as a further raw material for various applications, such as packaging and plastic pipe.

The following table reflects CPChem's petrochemicals and plastics product capacities at December 31, 2021:

	Millions of Pounds per Year*	
	U.S.	Worldwide
O&P		
Ethylene	11,910	14,385
Propylene	2,675	3,180
High-density polyethylene	5,305	7,470
Low-density polyethylene	620	620
Linear low-density polyethylene	1,590	1,590
Polypropylene	—	310
Normal alpha olefins	2,335	2,850
Polyalphaolefins	125	255
Polyethylene pipe	500	500
Total O&P	25,060	31,160
SA&S		
Benzene	1,600	2,530
Cyclohexane	1,060	1,455
Styrene	1,050	1,875
Polystyrene	835	915
Specialty chemicals	440	575
Total SA&S	4,985	7,350
Total O&P and SA&S	30,045	38,510

* Capacities include CPChem's share in equity affiliates and excludes CPChem's NGL fractionation capacity.

CPChem is growing its normal alpha olefins business with a second world-scale unit to produce 1-hexene, a critical component in high-performance polyethylene. The 586 million pounds per year unit will be located in Old Ocean, Texas. The project will utilize CPChem's proprietary technology. In addition, CPChem is expanding its propylene splitting capacity by 1 billion pounds per year with a new unit located at its Cedar Bayou facility. Both projects are expected to start up in 2023.

In early 2022, CPChem announced its first commercial sales of Marlex® Anew™ Circular Polyethylene, which uses advanced recycling technology to convert difficult-to-recycle plastic waste into high-quality raw materials. CPChem is working to further expand production volumes, targeting annual production of 1 billion pounds of circular polyethylene by 2030.

CPChem is continuing development of world-scale petrochemical facilities on the U.S. Gulf Coast and in Ras Laffan, Qatar, jointly with its co-venturer. CPChem expects to make a final investment decision for its U.S. Gulf Coast project in 2022.

REFINING

Our Refining segment refines crude oil and other feedstocks into petroleum products, such as gasoline, distillates and aviation fuels, as well as renewable fuels, at 12 refineries in the United States and Europe.

The Alliance Refinery, located in Belle Chasse, Louisiana, sustained significant impacts from Hurricane Ida in August 2021. In the fourth quarter of 2021, we announced the shutdown of the Alliance Refinery in connection with plans to convert it to a terminal.

The table below depicts information for each of our owned and joint venture refineries at December 31, 2021:

		Thousands of Barrels Daily					
		Net Crude Throughput Capacity			Net Clean Product Capacity**		
Region/Refinery	Location	Interest	At December 31 2021	Effective January 1 2022	Gasolines	Distillates	Clean Product Yield Capability
Atlantic Basin/Europe							
Bayway	Linden, NJ	100 %	258	258	155	130	92 %
Humber	N. Lincolnshire, United Kingdom	100	221	221	95	115	81
MiRO*	Karlsruhe, Germany	19	58	58	25	27	87
			537	537			
Gulf Coast							
Lake Charles	Westlake, LA	100	264	264	105	115	70
Sweeny	Old Ocean, TX	100	265	265	158	125	86
			529	529			
Central Corridor							
Wood River	Roxana, IL	50	173	173	88	70	81
Borger	Borger, TX	50	75	75	50	35	91
Ponca City	Ponca City, OK	100	217	217	120	100	93
Billings	Billings, MT	100	66	66	37	30	90
			531	531			
West Coast							
Ferndale	Ferndale, WA	100	105	105	65	39	84
Los Angeles	Carson/Wilmington, CA	100	139	139	85	65	90
San Francisco	Arroyo Grande/Rodeo, CA	100	120	120	60	65	85
			364	364			
			1,961	1,961			

* Mineraloelraffinerie Oberrhein GmbH.

** Clean product capacities are maximum rates for each clean product category, independent of each other. They are not additive when calculating the clean product yield capability for each refinery.

Primary crude oil characteristics and sources of crude oil for our owned and joint venture refineries are as follows:

	Characteristics				Sources				
	Sweet	Medium Sour	Heavy Sour	High TAN*	United States	Canada	South and Central America	Europe**	Middle East & Africa
Bayway	●	●			●	●		●	●
Humber	●		●	●	●			●	●
MiRO	●	●	●		●			●	●
Lake Charles	●	●	●	●	●	●	●	●	●
Sweeny	●	●	●	●	●	●	●		
Wood River	●		●	●	●	●			
Borger	●	●	●		●	●			
Ponca City	●	●	●		●	●			
Billings		●	●	●	●	●			
Ferndale	●	●			●	●			●
Los Angeles		●	●	●	●	●	●		●
San Francisco	●	●	●	●	●	●	●	●	●

* High TAN (Total Acid Number): acid content greater than or equal to 1.0 milligram of potassium hydroxide (KOH) per gram.

** Includes Russian crude.

Atlantic Basin/Europe Region

Bayway Refinery

The Bayway Refinery is located on the New York Harbor in Linden, New Jersey. Bayway's facilities include crude distilling, naphtha reforming, fluid catalytic cracking, solvent deasphalting, hydrodesulfurization and alkylation units. The complex also includes a polypropylene plant with the capacity to produce up to 775 million pounds per year. The refinery produces a high percentage of transportation fuels, as well as petrochemical feedstocks, residual fuel oil and home heating oil. Refined petroleum products are distributed to East Coast customers by pipeline, barge, railcar and truck.

Humber Refinery

The Humber Refinery is located on the east coast of England in North Lincolnshire, United Kingdom, approximately 180 miles north of London. Humber's facilities include crude distilling, naphtha reforming, fluid catalytic cracking, hydrodesulfurization, thermal cracking and delayed coking units. The refinery has two coking units with associated calcining plants. Humber is the only coking refinery in the United Kingdom, and a producer of high-quality specialty graphite and anode-grade petroleum cokes. The refinery also produces a high percentage of transportation fuels. The majority of the light oils produced by the refinery are distributed to customers in the United Kingdom by pipeline, railcar and truck, while the other refined petroleum products are exported throughout the world.

MiRO Refinery

The MiRO Refinery is located on the Rhine River in Karlsruhe, Germany, approximately 95 miles south of Frankfurt, Germany. MiRO is the largest refinery in Germany and operates as a joint venture in which we own an 18.75% interest. Facilities include crude distilling, naphtha reforming, fluid catalytic cracking, petroleum coking and calcining, hydrodesulfurization, isomerization, ethyl tert-butyl ether and alkylation units. MiRO produces a high percentage of transportation fuels. Other products produced include petrochemical feedstocks, home heating oil, bitumen, and anode- and fuel-grade petroleum cokes. Refined petroleum products are distributed to customers in Germany, Switzerland, France, and Austria by truck, railcar and barge.

Gulf Coast Region

Lake Charles Refinery

The Lake Charles Refinery is located in Westlake, Louisiana, approximately 150 miles east of Houston, Texas. Refinery facilities include crude distilling, naphtha reforming, fluid catalytic cracking, alkylation, hydrocracking, hydrodesulfurization and delayed coking units. Refinery facilities also include a specialty coker and calciner. The refinery produces a high percentage of transportation fuels. Other products produced include off-road diesel, home heating oil, feedstock for our Excel Paralubes joint venture in our M&S segment, and high-quality specialty graphite and fuel-grade petroleum cokes. A majority of the refined petroleum products are distributed to customers in the southeastern and eastern United States by truck, railcar, barge or major common carrier pipelines. Additionally, refined petroleum products are exported to customers primarily in Latin America and Europe by waterborne cargo.

Sweeny Refinery

The Sweeny Refinery is located in Old Ocean, Texas, approximately 65 miles southwest of Houston, Texas. Refinery facilities include crude distilling, naphtha reforming, fluid catalytic cracking, alkylation, hydrodesulfurization, aromatics units, and a Phillips 66 Partners owned delayed coking unit. The refinery produces a high percentage of transportation fuels. Other products include petrochemical feedstocks, home heating oil and fuel-grade petroleum coke. A majority of the refined petroleum products are distributed to customers throughout the Midcontinent region, southeastern and eastern United States by pipeline, barge and railcar. Additionally, refined petroleum products are exported to customers primarily in Latin America by waterborne cargo.

Central Corridor Region

WRB Refining LP (WRB)

We are the operator and managing partner of WRB, a 50 percent-owned joint venture that owns the Wood River and Borger refineries.

- *Wood River Refinery*

The Wood River Refinery is located in Roxana, Illinois, about 15 miles northeast of St. Louis, Missouri, at the confluence of the Mississippi and Missouri rivers. Refinery facilities include crude distilling, naphtha reforming, fluid catalytic cracking, alkylation, hydrocracking, hydrodesulfurization and delayed coking units. The refinery produces a high percentage of transportation fuels. Other products produced include petrochemical feedstocks, asphalt and fuel-grade petroleum coke. Refined petroleum products are distributed to customers throughout the Midcontinent region by pipeline, railcar, barge and truck.

- *Borger Refinery*

The Borger Refinery is located in Borger, Texas, in the Texas Panhandle, approximately 50 miles north of Amarillo, Texas. Refinery facilities include crude distilling, naphtha reforming, fluid catalytic cracking, alkylation, hydrodesulfurization, and delayed coking units. The refinery produces a high percentage of transportation fuels, as well as fuel-grade petroleum coke, NGL and solvents. Refined petroleum products are distributed to customers in West Texas, New Mexico, Colorado and the Midcontinent region by company-owned and common carrier pipelines.

Ponca City Refinery

The Ponca City Refinery is located in Ponca City, Oklahoma, approximately 95 miles northwest of Tulsa, Oklahoma. Refinery facilities include crude distilling, naphtha reforming, fluid catalytic cracking, alkylation, hydrodesulfurization, and delayed coking units. The refinery produces a high percentage of transportation fuels and anode-grade petroleum coke. Refined petroleum products are primarily distributed to customers throughout the Midcontinent region by company-owned and common carrier pipelines.

Billings Refinery

The Billings Refinery is located in Billings, Montana. Refinery facilities include crude distilling, naphtha reforming, fluid catalytic cracking, alkylation, hydrodesulfurization and delayed coking units. The refinery produces a high percentage of transportation fuels and fuel-grade petroleum coke. Refined petroleum products are distributed to customers in Montana, Wyoming, Idaho, Utah, Colorado and Washington by pipeline, railcar and truck.

West Coast Region

Ferndale Refinery

The Ferndale Refinery is located on Puget Sound in Ferndale, Washington, approximately 20 miles south of the U.S.-Canada border. Facilities include crude distillation, naphtha reforming, fluid catalytic cracking, alkylation and hydrodesulfurization units. The refinery produces a high percentage of transportation fuels. Other products produced include residual fuel oil, which is supplied to the northwest marine bunker fuel market. Most of the refined petroleum products are distributed to customers in the northwest United States by pipeline and barge.

Los Angeles Refinery

The Los Angeles Refinery consists of two facilities linked by pipeline located five miles apart in Carson and Wilmington, California, approximately 15 miles southeast of Los Angeles. The Carson facility serves as the front end of the refinery by processing crude oil, and the Wilmington facility serves as the back end of the refinery by upgrading the intermediate products to finished products. Refinery facilities include crude distillation, naphtha reforming, fluid catalytic cracking, alkylation, hydrocracking, and delayed coking units. The refinery produces a high percentage of transportation fuels. The refinery produces California Air Resources Board (CARB)-grade gasoline. Other products produced include fuel-grade petroleum coke. Refined petroleum products are distributed to customers in California, Nevada and Arizona by pipeline and truck.

San Francisco Refinery

The San Francisco Refinery consists of two facilities linked by our pipelines. The Santa Maria facility is located in Arroyo Grande, California, 200 miles south of San Francisco, California, while the Rodeo facility is located in the San Francisco Bay Area. Intermediate refined products from the Santa Maria facility are shipped by pipeline to the Rodeo facility for upgrading into finished petroleum products. Refinery facilities include crude distillation, naphtha reforming, hydrocracking, hydrodesulfurization and delayed coking units, as well as a calciner. The refinery produces a high percentage of transportation fuels, including CARB-grade gasoline. Other products produced include fuel-grade petroleum coke. The majority of the refined petroleum products are distributed to customers in California by pipeline and barge. Additionally, refined petroleum products are exported to customers primarily in Latin America by waterborne cargo.

We are advancing our plans at the San Francisco Refinery in Rodeo, California, to meet the growing demand for renewable fuels. The hydrotreater feedstock flexibility project reached full rates of 8,000 BPD (120 million gallons per year) of renewable diesel production in July 2021. Separately, the Rodeo Renewed refinery conversion project is expected to be finished in early 2024, subject to permitting and approvals. Upon completion, the facility will initially have over 50,000 BPD (800 million gallons per year) of renewable fuels production capacity. The conversion will reduce emissions from the facility and produce lower-carbon transportation fuels. We plan to distribute our renewable diesel through new and existing channels, including approximately 600 branded retail sites in California.

MARKETING AND SPECIALTIES

Our M&S segment purchases for resale and markets refined petroleum products, such as gasoline, distillates and aviation fuels, as well as renewable fuels, mainly in the United States and Europe. In addition, this segment includes the manufacturing and marketing of specialty products, such as base oils and lubricants.

Marketing

Marketing—United States

We market gasoline, diesel and aviation fuel through marketer and joint venture outlets that utilize the *Phillips 66*, *Conoco* or *76* brands. At December 31, 2021, we had approximately 7,110 branded outlets in 48 states and Puerto Rico.

Our wholesale operations utilize a network of marketers operating approximately 5,000 outlets. We place a strong emphasis on the wholesale channel of trade because of its relatively lower capital requirements. In addition, we hold brand-licensing agreements covering approximately 1,340 sites. Our refined petroleum products are marketed on both a branded and unbranded basis. A high percentage of our branded marketing sales are in the Midcontinent, Rockies and West Coast regions, where our wholesale marketing network secures efficient offtake from our refineries. We also utilize consignment fuel arrangements with several marketers whereby we own the fuel inventory and pay the marketers a monthly fee.

In the Gulf Coast and East Coast regions, most sales are conducted via the unbranded channel of trade, which does not require a highly integrated marketing network to secure product placement for refinery pull through. We have export capability at our U.S. coastal refineries to meet international demand.

In addition to automotive gasoline and diesel, we produce and market aviation gasoline and jet fuel. Aviation gasoline and jet fuel are sold through dealers and independent marketers at approximately 770 *Phillips 66* branded locations.

During 2021, Phillips 66 converted approximately 600 branded retail sites in California to distribute renewable diesel. In December 2021, we acquired a commercial fleet fueling business in California, providing further placement opportunities for renewable diesel production to end-use customers.

We participate in joint ventures engaged in retail convenience store operations in the West Coast and Central regions. These joint ventures enable us to secure long-term placement of our refinery production and extend participation in the retail value chain. During 2021, a joint venture in the Central region acquired approximately 200 sites. At December 31, 2021, our retail joint ventures had approximately 930 outlets.

Marketing—International

We have marketing operations in four European countries. Our European marketing strategy is to sell primarily through owned, leased or joint venture retail sites using a low-cost, high-volume approach. We use the *JET* brand name to market retail and wholesale products in Austria, Germany and the United Kingdom. In addition, we have an equity interest in a joint venture that markets refined petroleum products in Switzerland under the *Coop* brand name.

We also market aviation fuels, LPG, heating oils, marine bunker fuels, and other secondary refined products to commercial customers and into the bulk or spot markets in the above countries.

At December 31, 2021, we had approximately 1,280 marketing outlets in Europe, of which approximately 990 were company owned and approximately 290 were dealer owned. We had interests in approximately 330 additional sites through our *Coop* joint venture operations in Switzerland, and we held brand-licensing agreements covering approximately 90 sites in Mexico.

In February 2022, we and H2 Energy Europe announced our commitment to form a joint venture to develop a network of up to 250 hydrogen retail refueling stations across Germany, Austria and Denmark by 2026. The formation of the joint venture is subject to regulatory approvals and customary closing conditions.

Specialties

We manufacture lubricants and sell a variety of specialty products, including petroleum coke products, solvents and polypropylene.

Lubricants

We manufacture and sell automotive, commercial, industrial and specialty lubricants which are marketed worldwide under the *Phillips 66*, *Kendall*, *Red Line* and other private label brands.

In addition, we own a 50% interest in Excel Paralubes LLC (Excel), an operated joint venture that owns a hydrocracked lubricant base oil manufacturing plant located adjacent to the Lake Charles Refinery. The facility has a capacity to produce 22,200 BPD of high-quality Group II clear hydrocracked base oils. Excel markets the produced base oil under the *Pure Performance* brand. The facility's feedstock is sourced primarily from our Lake Charles Refinery.

Other Specialty Products

We market high-quality specialty graphite and anode-grade petroleum cokes in the United States, Europe and Asia for use in a variety of industries that include steel, aluminum, titanium dioxide and battery manufacturing. We also market polypropylene in North America under the *COPYLENE* brand name for use in consumer products, and market specialty solvents that include pentane, iso-pentane, hexane, heptane and odorless mineral spirits for use in the petrochemical, agriculture and consumer markets. In addition, we market sulfur for use in agricultural and chemical applications, and fuel-grade petroleum coke for use in the making of cement and glass, and generation of power.

ENERGY RESEARCH & INNOVATION

Our Energy Research & Innovation organization, located in Bartlesville, Oklahoma, includes scientists and engineers working in over 200 labs on our 440 acre research campus to develop new technologies focused on advancing our business and solving tomorrow's energy challenges. Areas of focus for 2021 included feedstock valuation and process optimization to enhance margins in our refining segment; lubricant development and product support; water, air, and renewable fuels research to ensure the sustainability of all business segments; and energy transition programs such as carbon mitigation, hydrogen, batteries and fuel cells to help position Phillips 66 for the energy future.

HUMAN CAPITAL

Phillips 66 employees, our human capital, are guided by our values of safety, honor and commitment. Together, we operate as a high-performing organization by building breadth and depth in capabilities, pursuing excellence and doing the right thing. We empower our people to create and innovate, and to work in ways to deliver industry leading performance. At December 31, 2021, we had approximately 14,000 employees working toward our vision of providing energy and improving lives.

We believe maintaining and enhancing a high-performing organization is critical to our success. Our employees promote our culture and are integral to achieving our strategic goals and maximizing long-term shareholder value. We strive for continuous improvement of our high-performing organization, as we believe that our employees differentiate us in the marketplace. In addition to the disclosures below, we have issued a human capital management report that is accessible on our website and provides more detailed data about human capital generally. The human capital measures and objectives that we focus on in managing our business and that we believe are material to understand our business, include:

- **Safety**—Safety is the cornerstone of our business. We are committed to protecting the health and safety of everyone who has a role in our operations and the communities in which we operate. We employ rigorous training and audit programs to drive ongoing improvement in personal safety as we strive for zero incidents. We also include safety metrics along with metrics for process safety and environmental performance in our annual bonus program to incentivize and reward safe operations. Our personal safety performance is measured by our total recordable rate (TRR), which measures the number of incidents per 200,000 hours worked. In 2021, our combined workforce TRR of 0.12 was industry leading and more than 25 times better than the U.S. manufacturing average.
- **Culture**—Phillips 66 fosters behaviors that promote our culture. “Our Energy in Action” is a set of core behaviors embedded in all of the company’s talent and business processes to drive accountability. Those behaviors include working for the greater good; creating an environment of trust; seeking different perspectives; and achieving excellence.

In addition, we believe a high level of performance can only be achieved through an inclusive culture and diverse workforce. Our inclusion and diversity (I&D) council, chaired by our Chairman and Chief Executive Officer and comprised of executives and business leaders, sets the strategic vision for advancing I&D. We have eight Employee Resource Groups (ERGs) that align with our corporate objective of fostering a diverse workforce. These ERGs are organizations formed around a shared set of experiences and perspectives, and are focused on professional development, networking, recruiting, raising cultural awareness, and community involvement.

We conduct biennial employee engagement surveys to gather employee perspectives on their experience, although we delayed the rollout of the survey from 2020 to 2021 because of the Coronavirus Disease 2019 (COVID-19) pandemic. The results of the survey are shared with our employees and board of directors. Management analyzes findings to identify progress on previous recommendations and areas of continued opportunity. In 2021, we expanded the scope of the survey to include assessments of Our Energy in Action and a culture of inclusion. Compared to 2018, results showed a five-percentage point increase in our overall engagement score.

- **Capability**—We strive to build depth and breadth in our skills. We drive employee development through technical training and providing opportunities for job rotations, as well as assisting employees with obtaining and sharpening managerial skills through targeted development programs and promotional moves. Our performance management process identifies coaching and training needs.

We also have a robust succession planning practice and work each year to identify successors for positions within the company. As part of the process, quarterly sessions are held with executives to monitor and guide leadership development for our key corporate positions.

- **Performance**—We focus on delivering exceptional, sustainable results. We work towards retention of top talent and have advanced the effectiveness of our performance management process by embedding Our Energy in Action into the process to ensure that we drive the desired behaviors. Additionally, “High Performing Organization” is one of the metrics used in our annual bonus plan. Measures used are foundational metrics such as employee engagement and I&D, talent attraction, retention and development, as well as our organization’s ability to adapt and respond to changing market conditions or other external factors.

COMPETITION

In the Midstream segment, our crude oil and products pipelines face competition from other crude oil and products pipeline companies, major integrated oil companies, and independent crude oil gathering and marketing companies. Competition is based primarily on quality of customer service, competitive rates and proximity to customers and market hubs. In addition, the Midstream segment, through our equity investment in DCP Midstream and our other operations, competes with numerous integrated petroleum companies, as well as natural gas transmission and distribution companies, to deliver components of natural gas to end users in natural gas markets. Principal methods of competing include economically securing the right to purchase raw natural gas for gathering systems, managing the pressure of those systems, operating efficient NGL processing plants and securing markets for the products produced. In the Chemicals segment, CPChem is ranked among the top 10 producers in many of its major product lines according to published industry sources, based on average 2021 production capacity. Petroleum products, petrochemicals and plastics are typically delivered into the worldwide commodity markets. Our Refining and M&S segments compete primarily in the United States and Europe. We are one of the largest refiners of petroleum products in the United States. Elements of competition for both our Chemicals and Refining segments include product improvement, new product development, low-cost structures, ability to run advantaged feedstocks, and efficient manufacturing and distribution systems. In the marketing portion of the business, competitive factors include product properties, reliability of supply, customer service, price and credit terms, advertising and sales promotion, and development of customer loyalty to branded products.

GENERAL

At December 31, 2021, we held a total of 508 active patents in 21 countries worldwide, including 399 active U.S. patents. The overall profitability of any business segment is not dependent on any single patent, trademark, license or franchise.

In support of our goal to attain zero incidents, we have implemented a comprehensive Health, Safety and Environmental (HSE) management system to support consistent management of HSE risks across our enterprise. The management system is designed to ensure that personal safety, process safety, and environmental impact risks are identified, and mitigation steps are taken to reduce the risk. The management system requires periodic audits to ensure compliance with government regulations, as well as our internal requirements. Our commitment to continuous improvement is reflected in annual goal setting and performance measurement.

We are subject to various laws and government regulations concerning environmental matters and employee safety and health in the United States and other countries. In addition, various states have authority under the federal statutes and many state and local governments have adopted environmental and employee safety and health laws and regulations, some of which are similar to federal requirements. State and federal authorities may seek fines and penalties for violating these laws and regulations. The material effects of compliance with these government regulations upon our capital expenditures, earnings and competitive position are primarily associated with environmental regulations. See the environmental information contained in “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations—Capital Resources and Liquidity—Contingencies” under the captions “Environmental” and “Climate Change.” It includes information on expensed and capitalized environmental costs for 2021 and those expected for 2022 and 2023.

Website Access to SEC Reports

Our Internet website address is <http://www.phillips66.com>. Information contained on our Internet website is not part of this Annual Report on Form 10-K.

Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and any amendments to these reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 are available on our website, free of charge, as soon as reasonably practicable after such reports are filed with, or furnished to, the U.S. Securities and Exchange Commission (SEC). Alternatively, you may access these reports at the SEC’s website at <http://www.sec.gov>.

Item 1A. RISK FACTORS

You should carefully consider the following risk factors in addition to the other information included in this Annual Report on Form 10-K. Each of these risk factors could adversely affect our business, operating results and financial condition, as well as the value of an investment in our common stock. These risk factors do not identify all risks that we face; our operations could also be affected by factors, events or uncertainties that are not presently known to us or that we do not currently consider to present significant risks to our operations.

Risks Related to the COVID-19 Pandemic

The Coronavirus Disease 2019 (COVID-19) pandemic resulted in a significant decrease in demand for many of our products and has had and could continue to have a material adverse effect on our business. Any future widespread health crises could materially and adversely impact our business in the future.

Our global operations expose us to risks associated with public health crises and outbreaks of epidemics, pandemics, or contagious diseases, such as COVID-19. The COVID-19 pandemic and the associated containment efforts had a serious adverse impact on the economy and a material adverse effect on our business, particularly our Refining segment. During 2020, demand for crude oil, gasoline, jet fuel, diesel fuel and other refined products was significantly reduced. In the event government authorities impose any new mandatory closures, work-from-home orders and social distancing protocols, or other restrictions to mitigate the further spread of COVID-19, it is likely that demand for our products will again be impacted and our business will be negatively affected.

Even if a virus or other illness does not spread significantly, the perceived risk of infection or health risk may result in reduced demand for our products and materially affect our business. As we cannot predict the duration or scope of COVID-19 or any pandemic, the negative financial impact to our results cannot be reasonably estimated and could be material. Factors that will influence the impact on our business and operations include the duration and extent of the pandemic, including the virulence and spread of different strains of a virus and the level and timing of vaccine development and distribution across the world and their impact on economic recovery and growth, the extent of imposed or recommended containment and mitigation measures and their impact on our operations, and the general economic consequences of the pandemic.

To the extent the COVID-19 pandemic or other widespread public health crises adversely affected or affects our business and financial results, it may also have the effect of heightening many of the other risks that could adversely affect our business described below, such as risks associated with industry capacity utilization, volatility in the price and availability of raw materials, material adverse changes in customer relationships including any failure of a customer to perform its obligations under agreements with us, and risks associated with worldwide or regional economic conditions.

Risks Related to Our Manufacturing and Operations

Our financial results are affected by changing commodity prices and margins for refined petroleum, petrochemical and plastics products.

Our financial results are largely affected by the relationship, or margin, between the prices at which we sell refined petroleum, petrochemical and plastics products and the prices for crude oil and other feedstocks used in manufacturing these products. Historically, margins have been volatile, and we expect they will continue to be volatile in the future.

The costs of feedstocks and the prices at which we can ultimately sell our products depend on numerous factors beyond our control, including regional and global supply and demand, which are subject to, among other things, production levels, levels of refined petroleum product inventories, productivity and growth of economies, and governmental regulation. We do not produce crude oil and must purchase all of the crude we process. The prices for crude oil and refined petroleum products can fluctuate based on global, regional and local market conditions, as well as by type and class of products, which can reduce margins and have a significant impact on our refining, wholesale marketing and retail operations, revenues, operating income and cash flows. Also, crude oil supply contracts generally have market-based pricing provisions. We normally purchase our refinery feedstocks weeks before manufacturing and selling the refined petroleum products. We also purchase refined petroleum products produced by others for sale to our customers. Changes in prices that occur between the time we purchase feedstocks or products and when we sell the refined petroleum products could have a significant effect on our financial results.

The price of crude oil also influences prices for petrochemical and plastics products and the feedstocks used to manufacture the products. Our Chemicals segment uses feedstocks that are derivatively produced in the refining of crude oil and the processing of natural gas, and those feedstock prices can fluctuate widely for a variety of reasons, including changes in worldwide energy prices and the supply and availability of the feedstocks. Due to the highly competitive nature of most of the products sold by our Chemicals segment, market position cannot necessarily be protected by product differentiation or by passing on cost increases to customers. As a result, price increases in raw materials may not correlate with changes in the prices at which petrochemical and plastics products are sold, thereby negatively affecting margins and the results of operations of our Chemicals segment.

Market conditions, including commodity prices, may impact the earnings, financial condition and cash flows of our Midstream business.

Our Midstream business is affected by the price of and demand for crude oil, natural gas and NGL, which have historically been volatile. The prices for crude oil, natural gas and NGL depend upon factors beyond our control, including global and local demand, production levels, imports and exports, seasonality and weather conditions, economic and political conditions domestically and internationally, and governmental regulations. Decreases in energy prices can decrease drilling activity, production rates and investments by third parties in the development of new crude oil and natural gas reserves. Sustained periods of low prices can also cause producers to significantly curtail or limit their oil and gas drilling operations, which could substantially delay the production and delivery of volumes of crude oil, natural gas and NGL.

The volume of crude oil and refined petroleum products transported or stored in our pipelines and terminal facilities depends on the demand for and availability of crude oil and refined petroleum products in the areas serviced by our assets. A period of sustained low demand or prices for crude oil could lead to a decline in drilling activity and production, which would lead to a decrease in the volumes of crude oil transported through our pipelines and terminal facilities, negatively affecting our earnings and cash flows. Likewise, our earnings and cash flows would be negatively impacted by a period of sustained lower demand for refined petroleum products, which could lead to lower refinery utilization and result in a decrease in the volumes of refined petroleum product transported through our pipelines and terminal facilities.

The natural gas gathered, processed, transported, sold and stored by DCP Midstream is delivered into pipelines for further delivery to end-users, including fractionation facilities. Demand for these services may be substantially reduced due to lower rates of natural gas production as a result of declining commodity prices. Commodity prices, including when ethane prices are low relative to natural gas prices, can also negatively impact throughput volumes of NGL transported, fractionated and stored by DCP Midstream. Additionally, DCP Midstream's revenues and cash flows can increase or decrease as the price of natural gas and NGL fluctuates because of certain contractual arrangements whereby natural gas is purchased for an agreed percentage of proceeds from the sale of the residue gas and/or NGL resulting from its processing activities.

Additionally, the level of production from natural gas wells will naturally decline over time. In order to maintain or increase throughput levels on its gathering and transportation pipeline systems and NGL pipelines and the asset utilization rates at its natural gas processing plants, DCP Midstream must continually obtain new supplies. The level of successful drilling activity and prices of, and demand for, natural gas and crude oil, as well as producers' desire and ability to obtain necessary permits are some of the factors that may affect new supplies of natural gas and NGL. If DCP Midstream is not able to obtain new supplies of natural gas to replace the natural decline in volumes from existing wells or because of competition, throughput on its pipelines and the utilization rates of its treating and processing facilities would decline. This could have a material adverse effect on its business, results of operations, financial position and cash flows, and its ability to make cash distributions to us.

Our operations are subject to planned and unplanned downtime, business interruptions, and operational hazards, any of which could adversely impact our ability to operate and could adversely impact our financial condition, results of operations and cash flows.

Our operating results are largely dependent on the continued operation of facilities and assets owned and operated by us and our equity affiliates. Interruptions may materially reduce productivity and thus, the profitability, of operations during and after downtime, including for planned turnarounds and scheduled maintenance activities. In the past, we and certain of our equity affiliates also have temporarily shut down facilities due to the threat of severe weather, such as hurricanes. Although we take precautions to ensure and enhance the safety of our operations and minimize the risk of disruptions, our operations are also subject to hazards inherent in chemicals, refining and midstream businesses, such as explosions, fires, refinery or pipeline releases or other incidents, power outages, labor disputes, or other natural or man-made disasters, such as geopolitical conflicts and acts of terrorism, including cyber intrusion. The inability to operate facilities or assets due to any of these events could significantly impair our ability to manufacture, process, store or transport products.

Any casualty occurrence involving our assets or operations could result in serious personal injury or loss of human life, significant damage to property and equipment, environmental pollution, impairment of operations and substantial losses to us. For assets located near populated areas, including residential areas, commercial business centers, industrial sites and other public gathering areas, the level of damage resulting from these risks could be greater. Damages resulting from an incident involving any of our assets or operations may result in our being named as a defendant in one or more lawsuits asserting potentially substantial claims or in our being assessed potentially substantial fines by governmental authorities. Should any of these risks materialize at any of our equity affiliates, it could have a material adverse effect on the business and financial condition of the equity affiliate and negatively impact their ability to make future distributions to us.

We are subject to interruptions of supply and offtake, as well as increased costs, as a result of our reliance on third-party transportation of crude oil, NGL and refined petroleum products.

We often utilize the services of third parties to transport crude oil, NGL and refined petroleum products to and from our facilities. In addition to our own operational risks, we could experience interruptions of supply or increases in costs to deliver refined petroleum products to market if the ability of the pipelines or vessels to transport crude oil or refined petroleum products is disrupted because of weather events, accidents, governmental regulations or third-party actions. A prolonged disruption of the ability of a pipeline or vessel to transport crude oil, NGL or refined petroleum products to or from one or more of our refineries or other facilities could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Competition Risks

Refining and marketing competitors that produce their own feedstocks, have more extensive retail outlets, or have greater financial resources may have a competitive advantage.

The refining and marketing industry is highly competitive with respect to both feedstock supply and refined petroleum product markets. We compete with many companies for available supplies of crude oil and other feedstocks and for outlets for our refined petroleum products. We do not produce any of our crude oil feedstocks. Some of our competitors, however, obtain a portion of their feedstocks from their own production and some have more extensive retail outlets than we have. Competitors that have their own production or extensive retail outlets (and greater brand-name recognition) are at times able to offset losses from refining operations with profits from producing or retailing operations, and may be better positioned to withstand periods of depressed refining margins or feedstock shortages.

Some of our competitors also have materially greater financial and other resources than we have. Such competitors have a greater ability to bear the economic risks inherent in all aspects of our business. In addition, we compete with other industries that provide alternative means to satisfy the energy and fuel requirements of our industrial, commercial and individual customers.

Market demand for transportation and midstream services and the risk of overbuild could negatively impact the results of operations of our Midstream business.

We and our Midstream equity affiliates compete with other pipelines and terminals that provide similar services in the same markets as our assets. We compete on the basis of many factors, including but not limited to rates, service levels and offerings, geographic location, connectivity and reliability. Our competitors could construct new assets or redeploy existing assets in a manner that would result in more intense competition. Additionally, we could be required to increase our costs or reduce the fees we charge in order to retain our customers.

We and our equity affiliates have made and continue to make significant investments in new infrastructure projects to meet market demand. Similar investments have been made, and additional investments may be made in the future, by us, our competitors or by new entrants to the markets we serve. The success of these investments largely depends on the realization of anticipated market demand, and these projects typically require significant development periods, during which time demand for such infrastructure may change, or additional investments by competitors may be made. Any of these or other competitive forces could materially adversely affect our results of operations, financial position or cash flows, as well as our ability to pay cash distributions.

Strategic Performance and Future Growth Risks

Large capital projects can take many years to complete, and market conditions could deteriorate significantly between the project approval date and the project startup date, negatively impacting expected project returns.

Our basis for approving a large-scale capital project is the expectation that it will deliver an acceptable rate of return on the capital invested. We base these forecasted project economics on our best estimate of future market conditions including the regulatory and operating environment. Most large-scale projects take several years to complete. During this multiyear period, market conditions can change from those we forecast, and these changes could be significant. Accordingly, we may not be able to realize our expected returns from a large investment in a capital project, and this could negatively impact our results of operations, cash flows and our return on capital employed.

Plans we or our joint ventures may have to expand or construct assets, and plans for our future performance are subject to risks associated with societal and political pressures and other forms of opposition to the future development, transportation and use of carbon-based fuels. Such risks could adversely impact our results of operations.

Certain of our plans are based upon the assumption that societal sentiment will continue to enable, and existing regulations will remain in place to allow for, the future development, transportation and use of carbon-based fuels. A portion of our growth strategy is dependent on our and our joint ventures' ability to capture growth opportunities in the Midstream and Chemicals segments. Policy decisions relating to the production, refining, transportation, marketing and use of carbon-based fuels are subject to political pressures and the influence and protests of environmental and other special interest groups. For example, the construction or expansion of pipelines can involve numerous regulatory, environmental, political, and legal uncertainties, many of which are beyond our control. We may not be able to identify or execute growth projects, and those that are identified may not be completed on schedule or at the budgeted cost. In addition, our revenues may not increase immediately upon the expenditure of funds on a particular project. Delays or cost increases related to capital spending programs could negatively impact our results of operations, cash flows and our return on capital employed.

Political and economic developments could affect our operations and materially reduce our profitability and cash flows.

Actions of federal, state, local and international governments through legislation or regulation, executive order, permit or other review of infrastructure or facility development, and commercial restrictions could delay projects, increase costs, limit development, or otherwise reduce our profitability both in the United States and abroad. Any such actions may affect many aspects of our operations, including:

- Requiring permits or other approvals that may impose unforeseen or unduly burdensome conditions or potentially cause delays in our operations.
- Further limiting or prohibiting construction or other activities in environmentally sensitive or other areas.
- Requiring increased capital costs to construct, maintain or upgrade equipment, facilities or infrastructure.
- Restricting the locations where we may construct facilities or requiring the relocation of facilities.

In addition, the U.S. government can prevent or restrict us from doing business in foreign countries and from doing business with entities affiliated with foreign governments, which can include state oil companies and U.S. subsidiaries of those companies. The Office of Foreign Assets Control (OFAC) of the U.S. Department of the Treasury administers and enforces economic and trade sanctions based on U.S. foreign policy and national security matters. The effect of any such OFAC sanctions could disrupt transactions with or operations involving entities affiliated with sanctioned countries, and could limit our ability to obtain optimum crude slates and other refinery feedstocks and effectively distribute refined petroleum products.

Other political and economic risks include global pandemics; financial market turmoil; economic volatility and global economic slowdown; currency exchange rate fluctuations; short-term and long-term inflationary pressures; import or export restrictions and changes in trade regulations; supply chain disruptions; acts of terrorism, war, civil unrest and other political risks; limitations in the availability of labor to develop, staff and manage operations; and potentially adverse tax developments. If any of these events occur, our businesses and results of operations may be adversely affected.

We may not be able to effectively identify, whether through acquisition, investment or development, lower-carbon opportunities on favorable terms, or at all, and failure to do so could limit our growth, our ability to participate in the energy transition, and our ability to meet our environmental goals and targets.

Part of our strategy includes capturing growth opportunities in our Emerging Energy business to further advance our participation in the energy transition and meet our greenhouse gas (GHG) emissions reduction targets. This strategy depends on our ability to successfully identify and evaluate acquisition and investment opportunities or develop and commercialize new technologies. The number of lower-carbon opportunities may be limited, and we will compete with other energy companies for these limited opportunities, which could make them more expensive and the returns for our business less attractive and possibly cause us to refrain from making them at all. Further, certain lower-carbon opportunities will depend on technological and other advancements that may not be within our control and may not come to fruition or be economically feasible in the near term. Any new opportunities also may depend on the viability of new assets or businesses that are contingent on public policy mechanisms including investment tax credits, subsidies, renewable portfolio standards and carbon trading plans. These mechanisms have been implemented at the state and federal levels to support the development of renewable energy, demand-side, and other clean infrastructure technologies. The availability and continuation of public policy support mechanisms will drive a significant part of the economics and viability of lower-carbon and clean energy investments generally, as well as our participation in them. If we are unable to identify and consummate acquisitions and investments, our ability to execute a portion of our growth strategy and meet our environmental goals may be impeded.

Regulatory and Environmental, Climate and Weather Risks

Climate change and severe weather may adversely affect our and our joint ventures' facilities and ongoing operations.

The potential physical effects of climate change and severe weather on our operations are highly uncertain and depend upon the unique geographic and environmental factors present. We have systems in place to manage potential acute physical risks, including those that may be caused by climate change, but if any such events were to occur, they could have an adverse effect on our assets and operations. Examples of potential physical risks include floods, hurricane-force winds, wildfires, freezing temperatures and snowstorms, as well as rising sea levels at our coastal facilities. We have incurred, and will continue to incur, costs to protect our assets from physical risks and to employ processes, to the extent available, to mitigate such risks.

We operate facilities located in coastal regions of the United States, which have been impacted by hurricanes that have required us to temporarily, or even permanently, shut down operations at those sites. Due to significant damages from Hurricane Ida, we shut down the Alliance Refinery in connection with plans to convert it to a terminal. CPChem also operates facilities on the Gulf Coast and has had to temporarily shut down sites as a result of hurricanes. Any extreme weather events or rising sea levels may disrupt the ability to operate any facilities located near coastal areas or to transport crude oil, refined petroleum or petrochemical and plastics products in these areas. Extended periods of such disruption could have an adverse effect on our results of operations. We could also incur substantial costs to prevent or repair damage to these facilities. Finally, depending on the severity and duration of any extreme weather events or climate conditions, our operations may need to be modified and material costs incurred, which could materially and adversely affect our business, financial condition and results of operations.

There are certain environmental hazards and risks inherent in our operations that could adversely affect those operations and our financial results.

The operation of refineries, power plants, fractionators, pipelines, terminals and vessels is inherently subject to the risks of spills, discharges or other inadvertent releases of petroleum or hazardous substances. If any of these events had previously occurred or occurs in the future in connection with any of our refineries, pipelines or refined petroleum products terminals, or in connection with any facilities that receive our wastes or byproducts for treatment or disposal, other than events for which we are indemnified, we could be liable for all costs and penalties associated with their remediation under federal, state, local and international environmental laws or common law, and could be liable for property damage to third parties caused by contamination from releases and spills.

We expect to continue to incur substantial capital expenditures and operating costs as a result of our compliance with existing and future environmental laws and regulations.

Our business is subject to numerous laws and regulations relating to the protection of the environment. These laws and regulations continue to increase in both number and complexity and affect our operations with respect to, among other things:

- The discharge of pollutants into the environment.
- Emissions into the atmosphere, such as nitrogen oxides, sulfur dioxide and mercury emissions, and GHG emissions, as they are, or may become, regulated.
- The quantity of renewable fuels that must be blended into motor fuels.
- The handling, use, storage, transportation, disposal and cleanup of hazardous materials and hazardous and nonhazardous wastes.
- The dismantlement and abandonment of our facilities and restoration of our properties at the end of their useful lives.

To the extent these expenditures, as with all costs, are not ultimately reflected in the prices of our products and services, our business, financial condition, results of operations and cash flows in future periods could be materially adversely affected.

The adoption of climate change legislation or regulation could result in increased operating costs and reduced demand for the refined petroleum products we produce.

Currently, multiple legislative and regulatory measures to address GHG and other emissions are in various phases of consideration, promulgation or implementation. These include actions to develop international, federal, regional or statewide programs, which could require reductions in our GHG or other emissions, establish a carbon tax and decrease the demand for our refined products. Requiring reductions in these emissions could result in increased costs to (i) operate and maintain our facilities, (ii) install new emission controls at our facilities and (iii) administer and manage any emissions programs, including acquiring emission credits or allotments.

For example, in 2017, the California state legislature adopted Assembly Bill 398, which provides direction and parameters on utilizing cap and trade after 2020 to meet the 40% reduction target for GHG emissions from 1990 levels by 2030 specified in Senate Bill 32. Compliance with the cap and trade program is demonstrated through a market-based credit system. Additionally, the California Air Resources Board is now exploring the potential for additional GHG reductions by 2045 via a yet undefined carbon neutrality standard, and California's governor has issued an Executive Order calling for a ban on the in-state sales of new cars containing internal combustion engines beginning in 2035. Other states are proposing, or have already promulgated, low carbon fuel standards or similar initiatives to reduce emissions from the transportation sector. If we are unable to pass the costs of compliance on to our customers, sufficient credits are unavailable for purchase, we have to pay a significantly higher price for credits, or if we are otherwise unable to meet our compliance obligation, our financial condition and results of operations could be adversely affected.

Federal, regional and state climate change and air emissions goals and regulatory programs are complex, subject to change and impose considerable uncertainty due to a number of factors including technological feasibility, legal challenges and potential changes in federal policy. Increasing concerns about climate change and carbon intensity have also resulted in heightened societal awareness and a number of international and national measures to limit GHG emissions. Additional stricter regulatory measures and investor pressure can be expected in the future and any of these changes may have a material adverse impact on our business or financial condition.

International climate change-related efforts, such as the 2015 United Nations Conference on Climate Change, which led to the creation of the Paris Agreement, may impact the regulatory framework of states whose policies directly influence our present and future operations. Although the United States had previously withdrawn from the Paris Agreement, it has since taken the steps necessary to rejoin, which was effective in February 2021. The U.S. climate change strategy and the impact to our industry and operations due to GHG regulation is unknown at this time.

Increased regulation of the fossil fuel industry, particularly with respect to hydraulic fracturing, could result in reductions or delays in U.S. production of crude oil and natural gas, which could adversely impact our results of operations.

Most of the crude oil and gas production of our Midstream segment's customers is being produced from unconventional oil shale reservoirs. These reservoirs require hydraulic fracturing completion processes to release the hydrocarbons from the rock so they can flow through casing to the surface. Hydraulic fracturing involves the injection of water, sand and chemicals under pressure into a formation to stimulate hydrocarbon production. The EPA, as well as several state agencies, have commenced studies and/or convened hearings regarding the potential environmental impacts of hydraulic fracturing activities. At the same time, certain environmental groups have suggested that additional laws may be needed to more closely and uniformly regulate the hydraulic fracturing process, and legislation has been proposed to provide for such regulation. In addition, some communities have adopted measures to ban hydraulic fracturing in their communities.

In addition, certain interest groups have also proposed ballot initiatives and constitutional amendments designed to restrict crude oil and natural gas development generally. If ballot initiatives, local, state, or national restrictions or prohibitions are adopted and result in more stringent limitations on the production and development of crude oil and natural gas, producers may experience delays or curtailment in the permitting or pursuit of exploration, development or production activities.

If legislative and regulatory initiatives cause a material decrease in the drilling of new wells and related servicing activities, it may reduce crude oil, natural gas and NGL supplies, negatively affecting the volume of products available to our Midstream segment and increasing feedstock prices for our Chemicals and Refining segments, resulting in a material adverse effect on our financial position, results of operations and cash flows.

Compliance with the EPA's Renewable Fuel Standard (RFS) could adversely affect our financial results.

The EPA has implemented the RFS pursuant to the Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007. The RFS program sets annual renewable volume obligation (RVO) requirements for the quantity of renewable fuels, such as ethanol, that must be blended into motor fuels consumed in the United States. To provide certain flexibility in compliance options available to the industry, a Renewable Identification Number (RIN) is assigned to each gallon of renewable fuel produced in, or imported into, the United States. As a producer of petroleum-based motor fuels, we are obligated to blend renewable fuels into the products we produce at a rate that is at least commensurate to the EPA's RVO requirements and, to the extent we do not, we must purchase RINs in the open market to satisfy our obligation under the RFS program.

We are exposed to the volatility in the market price of RINs. We cannot predict the future prices of RINs. RINs prices are dependent upon a variety of factors, including EPA regulations, the availability of RINs for purchase, and levels of transportation fuels produced, which can vary significantly from quarter to quarter. If sufficient RINs are unavailable for purchase, if we have to pay a significantly higher price for RINs, or if we are otherwise unable to meet the EPA's RVO requirements, including because the EPA mandates a blending quantity of renewable fuel that exceeds the amount that is commercially feasible to blend into motor fuel (a situation commonly referred to as "the blend wall"), our operations could be materially adversely impacted, up to and including a reduction in produced motor fuel for sale in the United States.

Societal, technological, political and scientific developments around emissions and fuel efficiency may decrease demand for transportation fuels.

Developments aimed at reducing GHG emissions may decrease the demand or increase the cost for our transportation fuels. Societal attitudes toward these products and their relationship to the environment may significantly affect our effectiveness in marketing our products. Government efforts to steer the public toward non-petroleum-based fuel dependent modes of transportation may foster a negative perception toward transportation fuels or increase costs of our products, thus affecting the public's attitude toward our major product. Advanced technology and increased use of vehicles that do not use petroleum-based transportation fuels or that are powered by hybrid engines would reduce demand for motor fuel. We may also incur increased production costs, which we may not be able to pass along to our customers.

Additionally, renewable fuels, alternative energy mandates and energy conservation efforts could reduce demand for refined petroleum products. Tax incentives and other subsidies can make renewable fuels and alternative energy more competitive with refined petroleum products than they otherwise might be, which may reduce refined petroleum product margins and hinder the ability of refined petroleum products to compete with renewable fuels.

These developments could potentially have a material adverse effect on our business, financial condition, results of operations and cash flows.

Continuing political and social concerns about the issues of climate change may result in changes to our business and significant expenditures, including litigation-related expenses.

Increasing attention to global climate change has resulted in increased investor attention and an increased risk of public and private litigation, which could increase our costs or otherwise adversely affect our business. For example, shareholder activism has recently been increasing in our industry, and shareholders may attempt to effect changes to our business or governance, whether by shareholder proposals, public campaigns, proxy solicitations or otherwise. Additionally, cities, counties, and other governmental entities in several states in the U.S. began filing lawsuits against energy companies in 2017, including Phillips 66. The lawsuits seek damages allegedly associated with climate change, and the plaintiffs are seeking unspecified damages and abatement under various tort theories. Similar lawsuits may be filed in other jurisdictions. We believe these lawsuits are an inappropriate vehicle to address the challenges associated with climate change and will vigorously defend against them for lacking factual and legal merit. The ultimate outcome and impact to us of any such litigation cannot be predicted with certainty, and we could incur substantial legal costs associated with defending these and similar lawsuits in the future. Additionally, any of these risks could result in unexpected costs, negative sentiments about our company, disruptions in our operations, increases to our operating expenses and reduced demand for our products, which in turn could have an adverse effect on our business, financial condition and results of operations.

Increased concerns regarding plastic waste in the environment, consumers selectively reducing their consumption of plastic products due to recycling concerns, or new or more restrictive regulations and rules related to plastic waste could reduce demand for CPChem's plastic products and could negatively impact our equity interest.

There is a growing concern with the accumulation of plastic, including microplastics, and other packaging waste in the environment. Additionally, plastics have recently faced increased public backlash and scrutiny. Policy measures to address this concern are being discussed or implemented by governments at all levels. In addition, a host of single-use plastic bans and taxes have been passed by countries around the world and counties and municipalities throughout the U.S. Increased regulation of, or prohibition on, the use of certain plastic products could reduce demand for certain of the products CPChem produces, which could negatively impact its financial condition, results of operations and cash flows, thereby negatively impacting our equity earnings, and cash distributions that we receive, from CPChem.

Cybersecurity and Data Privacy Risks

Security breaches and other disruptions could compromise our information and expose us to liability, which would cause our business and reputation to suffer.

Our information technology and infrastructure, or information technology and infrastructure of our third-party service providers (e.g., cloud-based service providers), may be vulnerable to attacks by malicious actors or breached due to human error, malfeasance or other disruptions. Any such breaches could compromise our networks and the information stored there could be accessed, publicly disclosed, lost or stolen. Any such access, disclosure or other loss of information could result in one or more of the following outcomes: (i) a loss of intellectual property, proprietary information, or employee, customer or vendor data; (ii) public disclosure of sensitive information; (iii) increased costs to prevent, respond to, or mitigate cybersecurity events, such as deploying additional personnel and protection technologies, training employees, and engaging third-party experts and consultants; (iv) systems interruption; (v) disruption of our business operations; (vi) remediation costs for repairs of system damage; (vii) reputational damage that adversely affects customer or investor confidence; and (viii) damage to our competitiveness, stock price, and long-term stockholder value. Although we have experienced occasional, actual or attempted breaches of our cybersecurity, we do not believe that any of these breaches has had a material effect on our business, operations or financial condition.

A breach may also result in legal claims or proceedings against us by our shareholders, employees, customers, vendors, and governmental authorities (U.S. and non-U.S.). Our infrastructure protection technologies and disaster recovery plans may not be able to prevent a technology systems breach or systems failure, which could have a material adverse effect on our financial position or results of operations. Furthermore, the continuing and evolving threat of cyberattacks has resulted in increased regulatory focus on prevention. To the extent we face increased regulatory requirements, we may be required to expend significant additional resources to meet such requirements.

Increasing regulatory focus on privacy and cybersecurity issues and expanding laws could expose us to increased liability, subject us to lawsuits, investigations and other liabilities and restrictions on our operations that could significantly and adversely affect our business.

Along with our own data and information collected in the normal course of our business, we and our partners collect and retain certain data that is subject to specific laws and regulations. The transfer and use of this data both domestically and across international borders is becoming increasingly complex. This data is subject to governmental regulation at the federal, state, international, national, provincial and local levels in many areas of our business, including data privacy and security laws such as the European Union (EU) General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA).

The GDPR applies to activities related to personal data that are conducted from an establishment in the EU. As interpretation and enforcement of the GDPR evolves, it creates a range of new compliance obligations, which could cause us to incur additional costs. Failure to comply could result in significant penalties that may materially adversely affect our business, reputation, results of operations, and cash flows.

The CCPA, which came into effect on January 1, 2020, gives California residents specific rights in relation to their personal information, requires that companies take certain actions, including notifications for security incidents and may apply to activities regarding personal information that is collected by us, directly or indirectly, from California residents. As interpretation and enforcement of the CCPA evolves, it creates a range of new compliance obligations, with the possibility for significant financial penalties for noncompliance that may materially adversely affect our business, reputation, results of operations, and cash flows.

The GDPR and CCPA, as well as other data privacy laws that may become applicable to our business, pose increasingly complex compliance challenges and potentially elevate our costs. Any failure by us to comply with these laws and regulations, including as a result of a security or privacy breach, could result in significant penalties and liabilities for us. Additionally, if we acquire a company that has violated or is not in compliance with applicable data protection laws, we may incur significant liabilities and penalties as a result.

Risks Related to Our Joint Ventures and Our MLP

Our investments in joint ventures decrease our ability to manage risk.

We conduct some of our operations, including parts of our Midstream, Refining and Marketing and Specialities (M&S) segments, and our entire Chemicals segment, through joint ventures in which we share control with our joint venture partners. Our joint venture partners may have economic, business or legal interests or goals that are inconsistent with ours or those of the joint venture, or our joint venture participants may be unable to meet their economic or other obligations, and we may be required to fulfill those obligations alone. Failure by us, or an entity in which we have a joint venture interest, to adequately manage the risks associated with any acquisitions or joint ventures could have a material adverse effect on the financial condition or results of operations of our joint ventures and, in turn, our business and operations.

One of our subsidiaries acts as the general partner of a publicly traded MLP, Phillips 66 Partners, which may involve a greater exposure to legal liability than our historic business operations, including with respect to the pending acquisition by us of all of the publicly held limited partner interests in Phillips 66 Partners (the Merger).

One of our subsidiaries acts as the general partner of Phillips 66 Partners, a publicly traded MLP. Our control of the general partner of Phillips 66 Partners may increase the possibility that we could be subject to claims of breach of fiduciary duties, including claims of conflicts of interest, related to Phillips 66 Partners.

Additionally, our directors and officers, as well as the directors and officers of the general partner of Phillips 66 Partners, could be subject to lawsuits relating to the Merger. Such litigation is very common in connection with acquisitions of public companies, regardless of the merits related to the underlying acquisition. While we will evaluate and defend against any actions vigorously, the costs of the defense of such lawsuits and other effects of such litigation could have a material adverse effect on our future business, financial condition, results of operations and cash flows.

Indebtedness, Capital Markets and Financial Risks

Uncertainty and illiquidity in credit and capital markets can impair our ability to obtain credit and financing on acceptable terms and can adversely affect the financial strength of our business partners.

Our ability to obtain credit and capital depends in large measure on the state of the credit and capital markets, which is beyond our control. Our ability to access credit and capital markets may be restricted at a time when we would like, or need, access to those markets, which could constrain our flexibility to react to changing economic and business conditions. In addition, the cost and availability of debt and equity financing may be adversely impacted by unstable or illiquid market conditions. Protracted uncertainty and illiquidity in these markets also could have an adverse impact on our lenders, commodity transaction counterparties, or our customers, preventing them from meeting their obligations to us.

From time to time, our cash needs may exceed our cash from our consolidated operations and joint venture distributions, and our business could be materially and adversely affected if we are unable to obtain necessary funds from financing activities. From time to time, we may need to supplement cash generated from operations with proceeds from financing activities. Uncertainty and illiquidity in financial markets may materially impact the ability of the participating financial institutions to fund their commitments to us under our liquidity facilities that are supported by a broad syndicate of financial institutions. Accordingly, we may not be able to obtain the full amount of the funds available under our liquidity facilities to satisfy our cash requirements, and our failure to do so could have a material adverse effect on our operations and financial position.

Investor sentiment towards climate change, fossil fuels and sustainability could adversely affect our business, the market price for our common stock and our access to capital markets.

There have been efforts in recent years aimed at the investment community, including investment advisors, sovereign wealth funds, public pension funds, universities, and other groups, to promote the divestment of energy companies, as well as to pressure lenders and other financial services companies to limit or curtail activities with energy companies. If these efforts are successful, our stock price and our ability to access capital markets may be negatively impacted.

Members of the investment community are also increasing their focus on sustainability practices, including practices related to GHG and climate change, in the energy industry. As a result, we may face increasing pressure regarding our sustainability disclosures and practices. Additionally, members of the investment community may screen companies such as ours for sustainability performance before investing in our stock or participating in our financing activities.

If we are unable to meet the sustainability standards set by these investors, we may lose investors, our stock price may be negatively impacted, our access to capital markets and lenders may be curtailed, and our reputation may be negatively affected.

We do not fully insure against all potential losses, including those from extreme weather events, and, therefore, our business, financial condition, results of operations and cash flows could be adversely affected by unexpected or underinsured liabilities and increased costs.

We maintain insurance coverage in amounts we believe to be prudent, including against many, but not all, potential liabilities arising from operating hazards. Uninsured or underinsured liabilities arising from operating hazards, including but not limited to, explosions, fires, refinery or pipeline releases or other incidents involving our assets or operations, including climate-related weather events, could reduce the funds available to us for capital and investment spending and could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Deterioration in our credit profile could increase our costs of borrowing money, limit our access to the capital markets and commercial credit, and could trigger co-venturer rights under joint venture arrangements.

Our or Phillips 66 Partners' credit ratings could be lowered or withdrawn entirely by a rating agency if, in its judgment, the circumstances warrant. If a rating agency were to downgrade our rating below investment grade, our or Phillips 66 Partners' borrowing costs would increase, and our funding sources could decrease. In addition, a failure by us to maintain an investment grade rating could affect our business relationships with suppliers and operating partners. For example, our agreement with Chevron Corporation (Chevron) regarding CPChem permits Chevron to buy our 50% interest in CPChem for fair market value if we experience a change in control or if both Standard & Poor's Financial Services LLC and Moody's Investors Service, Inc. lower our credit ratings below investment grade and the credit rating from either rating agency remains below investment grade for 365 days thereafter, with fair market value determined by agreement or by nationally recognized investment banks. As a result of these factors, a downgrade of credit ratings could have a material adverse impact on our future operations and financial position.

The level of returns on pension and postretirement plan assets and the actuarial assumptions used for valuation purposes could affect our earnings and cash flows in future periods.

Assumptions used in determining projected benefit obligations and the expected return on plan assets for our pension plans and other postretirement benefit plans are evaluated by us based on a variety of independent sources of market information and in consultation with outside actuaries. If we determine that changes are warranted in the assumptions used, such as the discount rate, expected long-term rate of return, or health care cost trend rate, our future pension and postretirement benefit expenses and funding requirements could increase. In addition, several factors could cause actual results to differ significantly from the actuarial assumptions that we use. Funding obligations are determined based on the value of assets and liabilities on a specific date as required under relevant regulations. Future pension funding requirements, and the timing of funding payments, could be affected by legislation enacted by governmental authorities.

We may incur losses as a result of our forward contracts and derivative transactions.

We currently use commodity derivative instruments, and we expect to use them in the future. If the instruments we utilize to hedge our exposure to various types of risk are not effective, we may incur losses. Derivative transactions involve the risk that counterparties may be unable to satisfy their obligations to us. The risk of counterparty default is heightened in a poor economic environment.

Continuing Risks Related to Spin-Off from ConocoPhillips

We are subject to continuing contingent liabilities of ConocoPhillips following the separation. Further, ConocoPhillips has indemnified us for certain matters, but may not be able to satisfy its obligations to us in the future.

In connection with our separation from ConocoPhillips, we entered into an Indemnification and Release Agreement and certain other agreements pursuant to which ConocoPhillips agreed to indemnify us for certain liabilities, and we agreed to indemnify ConocoPhillips for certain liabilities. Indemnities that we may be required to provide are not subject to any cap and may be significant. Third parties could also seek to hold us responsible for any of the liabilities that ConocoPhillips has agreed to retain. Further, the indemnity from ConocoPhillips may not be sufficient to protect us against the full amount of such liabilities, and ConocoPhillips may not be able to fully satisfy its indemnification obligations. Each of these risks could negatively affect our business, results of operations and financial condition.

Item 1B. UNRESOLVED STAFF COMMENTS

None.

Item 3. LEGAL PROCEEDINGS

Item 103 of Regulation S-K promulgated by the U.S. Securities and Exchange Commission (SEC) requires disclosure of certain environmental matters when a governmental authority is a party to the proceedings and such proceedings involve potential monetary sanctions that we reasonably believe will be in excess of \$300,000. The following matters are disclosed in accordance with that requirement. We do not currently believe that the eventual outcome of any matters reported, individually or in the aggregate, could have a material adverse effect on our business, financial condition, results of operations or cash flows.

Our U.S. refineries are implementing two separate consent decrees, regarding alleged violations of the Federal Clean Air Act, with the EPA, five states and one local air pollution agency. Some of the requirements and limitations contained in the decrees provide for stipulated penalties for violations. Stipulated penalties under the decrees are not automatic, but must be requested by one of the agency signatories. As part of periodic reports under the decrees or other reports required by permits or regulations, we occasionally report matters that could be subject to a request for stipulated penalties. If a specific request for stipulated penalties meeting the reporting threshold set forth in SEC rules is made pursuant to these decrees based on a given reported exceedance, we will separately report that matter and the amount of the proposed penalty.

New Matters

There are no new matters to report.

Matters Previously Reported (unresolved or resolved since the quarterly report on Form 10-Q for the quarterly period ended September 30, 2021)

On July 2, 2020, the South Coast Air Quality Management District (SCAQMD) issued a demand for penalties totaling \$2,697,575. The penalty demand proposes to resolve 26 Notices of Violation (NOVs) issued between 2017 and 2020 for alleged violations of air permit and air pollution regulatory requirements at the Los Angeles Refinery. We are working with SCAQMD to resolve these NOVs.

See Note 14—Contingencies and Commitments, in the Notes to Consolidated Financial Statements, for additional information.

Item 4. MINE SAFETY DISCLOSURES

Not applicable.

INFORMATION ABOUT OUR EXECUTIVE OFFICERS

<u>Name</u>	<u>Position Held</u>	<u>Age*</u>
Greg C. Garland	Chairman and Chief Executive Officer	64
Mark E. Lashier	President and Chief Operating Officer	60
Robert A. Herman	Executive Vice President, Refining	62
Brian M. Mandell	Executive Vice President, Marketing and Commercial	58
Kevin J. Mitchell	Executive Vice President, Finance and Chief Financial Officer	55
Timothy D. Roberts	Executive Vice President, Midstream	60
Vanessa L. Allen Sutherland	Executive Vice President, Legal and Government Affairs, General Counsel and Corporate Secretary	50
J. Scott Pruitt	Vice President and Controller	57

* On February 18, 2022.

There are no family relationships among any of the executive officers named above or any member of our Board of Directors. The Board of Directors annually elects the officers to serve until a successor is elected and qualified or as otherwise provided in our By-Laws. Set forth below is information about the executive officers identified above.

Greg C. Garland has been the Chairman and Chief Executive Officer of Phillips 66 since April 2012. Previously, Mr. Garland served as ConocoPhillips' Senior Vice President, Exploration and Production—Americas from October 2010 to April 2012, and as President and Chief Executive Officer of CPChem from 2008 to 2010.

Mark E. Lashier is President and Chief Operating Officer of Phillips 66, a position he has held since April 2021. Previously, Mr. Lashier served as President and Chief Executive Officer of Chevron Phillips Chemical Company LLC from August 2017 to April 2021 after serving as Executive Vice President—Commercial since August 2015.

Robert A. Herman is Executive Vice President, Refining of Phillips 66, a position he has held since September 2017. Previously, Mr. Herman served as Executive Vice President, Midstream from June 2014 to September 2017.

Brian M. Mandell is Executive Vice President, Marketing and Commercial of Phillips 66, a position he has held since March 2019. Mr. Mandell served as Senior Vice President, Marketing and Commercial from August 2018 to March 2019; Senior Vice President, Commercial from November 2016 to August 2018; and President, Global Marketing from March 2015 to November 2016.

Kevin J. Mitchell is Executive Vice President, Finance and Chief Financial Officer of Phillips 66, a position he has held since January 2016. Previously, Mr. Mitchell served as Vice President, Investor Relations from September 2014 to January 2016.

Timothy D. Roberts is Executive Vice President, Midstream of Phillips 66, a position he has held since August 2018. Previously, Mr. Roberts served as Executive Vice President, Marketing and Commercial from January 2017 to August 2018 and as Executive Vice President Strategy and Business Development from April 2016 to January 2017.

Vanessa L. Allen Sutherland is Executive Vice President, Legal and Government Affairs, General Counsel and Corporate Secretary of Phillips 66, a position she has held since January 2022. Ms. Sutherland previously served as Executive Vice President and Chief Legal Officer of Norfolk Southern Corporation from April 2020 to December 2021, Senior Vice President Government Relations and Chief Legal Officer from August 2019 to April 2020, Senior Vice President Law and Chief Legal Officer from April 2019 to August 2019, and Vice President Law from June 2018 to April 2019. Prior to joining Norfolk Southern Corporation, Ms. Sutherland served as Chairman of the U.S. Chemical Safety and Hazard Investigation Board from August 2015 to June 2018.

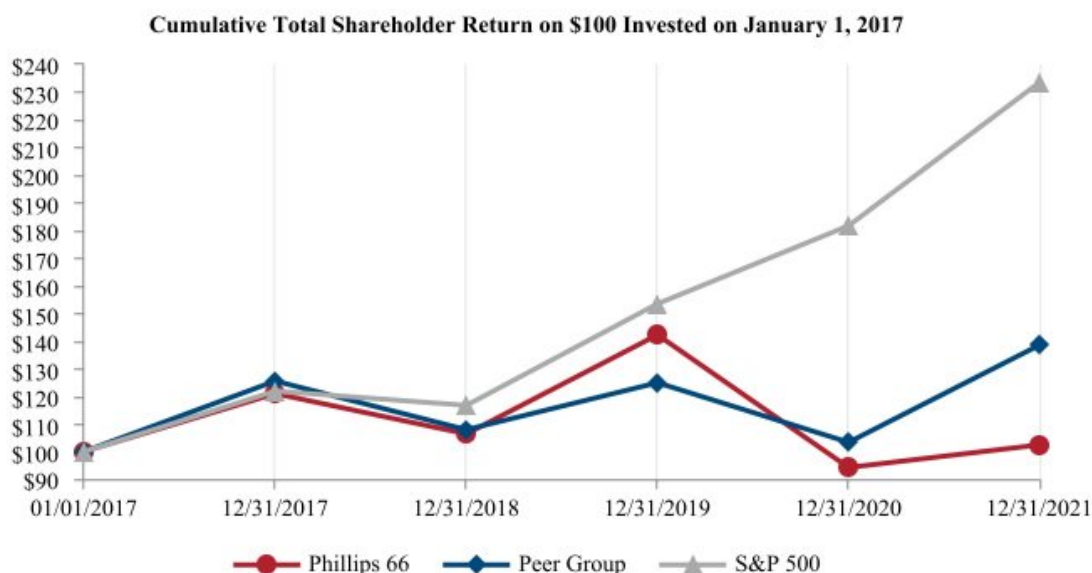
J. Scott Pruitt is Vice President and Controller of Phillips 66, a position he has held since August 2021. Mr. Pruitt previously served as General Auditor from September 2020 to August 2021 and Assistant Controller from May 2012 to September 2020.

PART II

Item 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Phillips 66's common stock is traded on the New York Stock Exchange under the symbol "PSX." At January 31, 2022, the number of stockholders of record of our shares was 31,692.

Performance Graph



The above performance graph represents cumulative total stockholder return, which assumes reinvestment of dividends, of a \$100 investment in our common stock, our self-constructed peer group for the year ended December 31, 2021 (the Peer Group), and the S&P 500 Index, for the five years ended December 31, 2021. We evaluate our peer group on an annual basis and believe the Peer Group closely aligns with our size and lines of business.

The Peer Group consists of Delek US Holdings, Inc.; Dow Inc.; HollyFrontier Corporation; LyondellBasell Industries N.V.; Magellan Midstream Partners, L.P.; Marathon Petroleum Corporation; MPLX LP; ONEOK, Inc.; PBF Energy Inc.; Targa Resources Corp.; Valero Energy Corporation; Westlake Chemical Corporation; and The Williams Companies, Inc. Additionally, Andeavor was included as a peer for periods prior to its acquisition by Marathon Petroleum Corporation in October 2018.

Issuer Purchases of Equity Securities

In March 2020, we announced that we had temporarily suspended our share repurchases. As of December 31, 2021, we had \$2,514 million remaining under our existing share repurchase authorization, which has no expiration date. Any future share repurchases will be made at the discretion of management and will depend on various factors including our share price, results of operations, financial condition and cash required for future business plans.

Item 6. [RESERVED]

Item 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Management's Discussion and Analysis is the company's analysis of its financial performance and financial condition, and of significant trends that may affect future performance. It should be read in conjunction with the consolidated financial statements and notes thereto included elsewhere in this Annual Report on Form 10-K.

The terms "earnings" and "loss" as used in Management's Discussion and Analysis refer to net income (loss) attributable to Phillips 66. The terms "results," "before-tax income" or "before-tax loss" as used in Management's Discussion and Analysis refer to income (loss) before income taxes.

EXECUTIVE OVERVIEW AND BUSINESS ENVIRONMENT

Phillips 66 is an energy manufacturing and logistics company with midstream, chemicals, refining, and marketing and specialties businesses. At December 31, 2021, we had total assets of \$55.6 billion.

Executive Overview

We reported earnings of \$1.3 billion and generated \$6.0 billion in cash from operating activities for the full year of 2021. During 2021, we used available cash to fund capital expenditures and investments of \$1.9 billion, pay dividends on our common stock of \$1.6 billion, and pay down \$1.5 billion in debt. We ended 2021 with \$3.1 billion of cash and cash equivalents and approximately \$5.7 billion of total committed capacity available under our credit facilities.

Our reported earnings for 2021 continued to reflect the ongoing impacts of the disruption to global economic activities caused by the Coronavirus Disease 2019 (COVID-19) pandemic, primarily on our Refining segment. However, through 2021 global refined petroleum product demand steadily recovered due to the easing of pandemic restrictions and the administration of COVID-19 vaccines. Consequently, margins and utilization for our Refining segment, margins and sales volumes for our Marketing and Specialties (M&S) segment, and throughput volumes for our Transportation business improved. In addition, equity earnings from our Chemicals segment increased significantly due to higher margins driven by strong demand and tight product supply. However, as uncertainty remains regarding the ongoing impact of the pandemic on the global economy, we will continue to be disciplined in our allocation of capital and monitor the performance of our portfolio.

In 2021, we progressed strategic initiatives to position Phillips 66 for a lower-carbon future as a part of our commitment to play an important role in addressing climate change. In September 2021, we announced a set of company-wide greenhouse gas (GHG) emission intensity reduction targets that we consider to be impactful, attainable and measurable. By 2030, we expect to reduce GHG emission intensity by 30% for Scope 1 and 2 emissions from our operations and by 15% for Scope 3 emissions from our energy products, below 2019 levels. Also in September 2021, we acquired a 16% interest in NOVONIX Limited (NOVONIX), a company that develops technology and supplies materials for lithium-ion batteries.

In October 2021, we entered into a definitive merger agreement with Phillips 66 Partners to acquire all of the limited partner interests in Phillips 66 Partners not already owned by us on the closing date of the transaction. The agreement provides for an all-stock transaction in which each outstanding Phillips 66 Partners common unitholder would receive 0.50 shares of Phillips 66 common stock for each Phillips 66 Partners common unit. Phillips 66 Partners' perpetual convertible preferred units would be converted into common units at a premium to the original issuance price prior to exchange for Phillips 66 common stock. This merger is expected to close in March 2022, subject to customary closing conditions. Upon closing, Phillips 66 Partners will become a wholly owned subsidiary of Phillips 66 and will no longer be a publicly traded partnership. See Note 27—Phillips 66 Partners LP, in the Notes to Consolidated Financial Statements, for additional information on the pending merger transaction.

We continue to focus on the following strategic priorities:

- **Operating Excellence.** Our commitment to operating excellence guides everything we do. We are committed to protecting the health and safety of everyone who has a role in our operations and the communities in which we operate. Continuous improvement in safety, environmental stewardship, reliability and cost efficiency is a fundamental requirement for our company and employees. We employ rigorous training and audit programs to drive ongoing improvement in both personal and process safety as we strive for zero incidents. In 2021, we achieved a 0.12 total recordable rate. Since we cannot control commodity prices, controlling operating expenses and overhead costs, within the context of our commitment to safety and environmental stewardship, is a high priority. Senior management actively monitors these costs and assesses opportunities for permanent cost reductions. We are committed to protecting the environment and strive to reduce our environmental footprint throughout our operations. Optimizing utilization rates and product yield at our refineries through reliable and safe operations enables us to capture the value available in the market in terms of prices and margins. During 2021, our worldwide refining crude oil capacity utilization rate was 84% and our worldwide refining clean product yield was 83%.
- **Growth.** A disciplined capital allocation process ensures we invest in projects that are expected to generate competitive returns. Our strategy primarily focuses on investing in returns-focused growth opportunities in the Midstream and Chemicals segments, as well as our investments in renewable fuels projects to advance a lower-carbon future. In 2022, we have budgeted \$426 million in growth capital for our Midstream segment, which includes construction completion of Frac 4 at the Sweeny Hub. In Chemicals, our share of expected self-funded growth capital spending by Chevron Phillips Chemical Company LLC (CPChem) is \$502 million. CPChem plans to use its growth capital to fund expansion of its normal alpha olefins production, optimization and debottleneck opportunities in the olefins and polyolefins chains, as well as continuing development of petrochemicals projects in the U.S. Gulf Coast and Qatar. In Refining, we have budgeted \$408 million of growth capital, primarily for the reconfiguration of the San Francisco Refinery in Rodeo, California, to a renewable fuels production facility, as part of the Rodeo Renewed project.
- **Returns.** We plan to enhance Refining returns by increasing throughput of advantaged feedstocks, improving yields, optimizing our portfolio, and remaining committed to operating excellence. For 2022, our M&S segment will continue to develop and enhance our retail network, including energy transition opportunities.
- **Distributions.** We believe shareholder value is enhanced through, among other things, a secure, competitive and growing dividend, complemented by share repurchases. In the fourth quarter of 2021, we increased our quarterly dividend by 2% to \$0.92 per common share. Regular dividends demonstrate the confidence our Board of Directors and management have in our capital structure and operations' capability to generate free cash flow throughout the business cycle. We suspended our share repurchase program in March 2020 to preserve liquidity. As operating cash flows improve further, we will prioritize shareholder returns and debt repayment.
- **High-Performing Organization.** We strive to attract, develop and retain individuals with the knowledge and skills to implement our business strategy and who support our values and culture. Throughout the company, we focus on promoting an inclusive workplace that enables our diverse workforce to innovate, create value and deliver extraordinary performance. We also focus on getting results in the right way and embracing our values as a common bond, and we believe success is both what we do and how we do it. We encourage collaboration throughout our company, while valuing differences, respecting diversity, and creating a great place to work. We foster an environment of learning and development through structured programs focused on enhancing functional and technical skills where employees are engaged in our business and committed to their own, as well as the company's, success.

Business Environment

The Midstream segment includes our Transportation and NGL businesses. Our Transportation business contains fee-based operations not directly exposed to commodity price risk. Our NGL business contains both fee-based operations and operations directly impacted by NGL prices. The Midstream segment also includes our 50% equity investment in DCP Midstream. During 2021, NGL prices increased significantly, compared with 2020, due to strong demand as economic activities gradually recovered following the administration of COVID-19 vaccines and the easing of pandemic restrictions.

The Chemicals segment consists of our 50% equity investment in CPChem. The chemicals and plastics industry is mainly a commodity-based industry where the margins for key products are based on supply and demand, as well as cost factors. Compared with 2020, the benchmark high-density polyethylene chain margin increased significantly in 2021, due to continued strong demand and tight supply.

Our Refining segment results are driven by several factors, including market crack spreads, refinery throughput, feedstock costs, product yields, turnaround activity, and other operating costs. The price of U.S. benchmark crude oil, West Texas Intermediate (WTI) at Cushing, Oklahoma, increased to an average of \$67.96 per barrel during 2021, compared with an average of \$39.31 per barrel in 2020. Market crack spreads are used as indicators of refining margins and measure the difference between market prices for refined petroleum products and crude oil. Worldwide market crack spreads increased to an average of \$17.09 per barrel during 2021, compared with an average of \$8.33 per barrel in 2020. The increases in crude oil prices and market crack spreads were primarily driven by a significant increase in demand for refined petroleum products, as economic activities gradually recovered following the administration of COVID-19 vaccines and the easing of pandemic restrictions, as well as tightening supply. In 2021, renewable identification number (RIN) prices increased significantly, compared with 2020.

Results for our M&S segment depend largely on marketing fuel and lubricant margins, and sales volumes of our refined petroleum and other specialty products. While marketing fuel and lubricant margins are primarily driven by market factors, largely determined by the relationship between supply and demand, marketing fuel margins, in particular, are influenced by trends in spot prices, and where applicable, retail prices for refined petroleum products in the regions and countries where we operate. In general, a downward trend of spot prices has a favorable impact on marketing fuel margins, while an upward trend of spot prices has an unfavorable impact on marketing fuel margins. The global disruption caused by the COVID-19 pandemic resulted in reduced demand for refined petroleum and specialty products since March 2020. Following the administration of COVID-19 vaccines in 2021 and the easing of pandemic restrictions, demand for refined petroleum and specialty products improved in 2021, compared with 2020.

RESULTS OF OPERATIONS

Consolidated Results

A summary of income (loss) before income taxes by business segment with a reconciliation to net income (loss) attributable to Phillips 66 follows:

	Millions of Dollars		
	Year Ended December 31		
	2021	2020	2019
Midstream	\$ 1,610	(9)	684
Chemicals	1,844	635	879
Refining	(2,549)	(6,155)	1,986
Marketing and Specialties	1,809	1,446	1,433
Corporate and Other	(974)	(881)	(804)
Income (loss) before income taxes	1,740	(4,964)	4,178
Income tax expense (benefit)	146	(1,250)	801
Net income (loss)	1,594	(3,714)	3,377
Less: net income attributable to noncontrolling interests	277	261	301
Net income (loss) attributable to Phillips 66	\$ 1,317	(3,975)	3,076

2021 vs. 2020

Net income attributable to Phillips 66 for the year ended December 31, 2021, was \$1,317 million, compared with a net loss attributable to Phillips 66 of \$3,975 million for the year ended December 31, 2020. The improvement was primarily due to lower impairments, improved realized refining margins and higher equity earnings from CPChem, partially offset by income tax impacts from improved results.

2020 vs. 2019

Net loss attributable to Phillips 66 for the year ended December 31, 2020, was \$3,975 million, compared with net income attributable to Phillips 66 of \$3,076 million for the year ended December 31, 2019. The decrease was mainly attributable to:

- Lower realized refining margins and decreased refinery production.
- A goodwill impairment in our Refining segment.
- A long-lived asset impairment associated with our plan to reconfigure the San Francisco Refinery into a renewable fuels production facility, which impacted our Refining and Midstream segments.
- Higher impairments of equity investments in our Midstream segment.

These decreases were partially offset by an income tax benefit recognized in 2020, compared with income tax expense recognized in 2019.

See Note 9—Impairments, and Note 16—Fair Value Measurements, in the Notes to Consolidated Financial Statements, for information on impairments recorded in 2021, 2020 and 2019.

See the “Segment Results” section for additional information on our segment results.

Statement of Operations Analysis

2021 vs. 2020

Sales and other operating revenues and purchased crude oil and products increased 74% and 77%, respectively, in 2021. These increases were mainly due to higher prices for refined petroleum products, crude oil and NGL, as well as increased volumes for refined petroleum products and crude oil.

Equity in earnings of affiliates increased \$1,713 million in 2021. The increase was primarily due to higher equity earnings from CPChem mainly driven by increased margins, WRB Refining LP (WRB) resulting from improved realized refining margins and higher refinery production, and Excel Paralubes LLC (Excel) attributable to higher base oil margins. See Chemicals segment analysis in the “Segment Results” section for additional information on CPChem.

Net gain on dispositions decreased 83% in 2021, mainly reflecting a before-tax gain of \$84 million recognized in the second quarter of 2020 associated with a co-venturer’s acquisition of an ownership interest in the consolidated holding company that owns an interest in Gray Oak Pipeline, LLC. See Note 27—Phillips 66 Partners LP, in the Notes to Consolidated Financial Statements, for additional information.

Other income increased \$388 million in 2021, primarily driven by an unrealized gain of \$365 million related to the change in fair value of our investment in NOVONIX, which we acquired in the third quarter of 2021.

Operating expenses increased 13% in 2021, mainly attributable to higher utility costs driven by increased commodity prices, higher employee-related expenses, and increased maintenance and repair costs.

Selling, general and administrative expenses increased 13% in 2021, primarily driven by higher selling expenses due to rising refined petroleum product prices and demand, increased employee-related expenses, and a benefit received from a legal settlement in the first quarter of 2020.

Depreciation and amortization increased 15% in 2021, mainly due to asset retirements related to the shutdown of our Alliance Refinery in connection with plans to convert it to a terminal. See Note 7—Properties, Plants and Equipment, in the Notes to Consolidated Financial Statements, for additional information regarding asset retirements related to our Alliance Refinery.

Impairments decreased 65% in 2021. See Note 9—Impairments, in the Notes to Consolidated Financial Statements, for additional information regarding impairments.

Taxes other than income taxes decreased 12% in 2021, primarily driven by tax credits received from renewable diesel blending activity at our San Francisco Refinery in 2021, and lower property and franchise taxes.

Interest and debt expense increased 16% in 2021, primarily driven by lower capitalized interest due to the completion of capital projects and the placement of assets into service, as well as higher average debt principal balances resulting from new debt issuances in the second and fourth quarters of 2020.

We had income tax expense of \$146 million in 2021, compared with an income tax benefit of \$1,250 million in 2020, primarily due to before-tax income in 2021 versus a before-tax loss in 2020. See Note 21—Income Taxes, in the Notes to Consolidated Financial Statements, for more information regarding our income taxes.

2020 vs. 2019

Sales and other operating revenues and purchased crude oil and products both decreased 40% in 2020. The decreases were mainly due to lower prices and volumes for refined petroleum products and crude oil, reflecting the impact of the COVID-19 pandemic.

Equity in earnings of affiliates decreased 44% in 2020. The decrease was primarily due to lower realized refining margins and decreased refinery production at WRB, and lower margins, partially offset by higher sales volumes, at CPChem. See Chemicals segment analysis in the “Segment Results” section for additional information on CPChem.

Net gain on dispositions increased \$88 million in 2020. The increase was mainly due to a gain of \$84 million associated with a co-venturer’s prior-year acquisition of a 35% interest in Phillips 66 Partners’ consolidated holding company that owns an interest in Gray Oak Pipeline, LLC. See Note 27—Phillips 66 Partners LP, in the Notes to Consolidated Financial Statements, for additional information.

Operating expenses decreased 10% in 2020, primarily driven by our company-wide cost reduction initiatives in response to the COVID-19 pandemic, lower utility costs, and decreased refinery turnaround activities.

Impairments increased \$3,391 million in 2020. See Note 9—Impairments, and Note 16—Fair Value Measurements, in the Notes to Consolidated Financial Statements, for additional information associated with impairments.

We had an income tax benefit of \$1,250 million in 2020, compared with income tax expense of \$801 million in 2019, primarily due to a before-tax loss in 2020 versus before-tax income in 2019. See Note 21—Income Taxes, in the Notes to Consolidated Financial Statements, for more information regarding our income taxes.

Segment Results

Midstream

	Year Ended December 31		
	2021	2020	2019
	Millions of Dollars		
Income (Loss) Before Income Taxes			
Transportation	\$ 678	508	946
NGL and Other	747	441	522
DCP Midstream	185	(958)	(784)
Total Midstream	\$ 1,610	(9)	684

	Thousands of Barrels Daily		
Transportation Volumes			
Pipelines*	3,271	3,005	3,396
Terminals	2,790	2,971	3,315
Operating Statistics			
NGL fractionated**	410	249	224
NGL extracted***	394	399	417

* Pipelines represent the sum of volumes transported through each separately tariffed consolidated pipeline segment.

** Excludes DCP Midstream.

*** Includes 100% of DCP Midstream's volumes.

	Dollars Per Gallon		
Market Indicator			
Weighted-Average NGL Price*	\$ 0.83	0.41	0.51

* Based on index prices from the Mont Belvieu market hub, which are weighted by NGL component mix.

The Midstream segment provides crude oil and refined petroleum product transportation, terminaling and processing services, as well as natural gas and NGL transportation, storage, fractionation, processing and marketing services, mainly in the United States. This segment includes our MLP, Phillips 66 Partners, our 50% equity investment in DCP Midstream, which includes the operations of its MLP, DCP Partners, and our 16% investment in NOVONIX.

2021 vs. 2020

Results from our Midstream segment increased \$1,619 million in 2021, compared with 2020.

Results from our Transportation business increased \$170 million in 2021, compared with 2020. The increase was primarily due to improved earnings from our equity affiliates, lower asset impairments, and increased pipeline volumes and tariffs. These increases were partially offset by a before-tax gain of \$84 million recognized in the second quarter of 2020 associated with a co-venturer's acquisition of an ownership interest in the consolidated holding company that owns an interest in Gray Oak Pipeline, LLC, and increased depreciation and amortization expense from asset retirements related to the shutdown of the Alliance Refinery in the fourth quarter of 2021.

Results from our NGL and Other business increased \$306 million in 2021, compared with 2020. The increase in 2021 was primarily driven by a \$370 million increase in the value of our investment in NOVONIX, which we acquired in the third quarter of 2021, partially offset by higher utility costs due to increased natural gas prices.

Results from our investment in DCP Midstream increased \$1,143 million in 2021, compared with 2020. The increase in 2021 reflects a \$1,161 million before-tax impairment of our investment in DCP Midstream recorded in the first quarter of 2020.

See Note 9—Impairments, and Note 27—Phillips 66 Partners LP, in the Notes to Consolidated Financial Statements, for additional information regarding the impairments and the \$84 million before-tax gain, respectively.

See the “Executive Overview and Business Environment” section for information on market factors impacting 2021 results.

2020 vs. 2019

Midstream’s results decreased \$693 million in 2020, compared with 2019.

Results from our Transportation business decreased \$438 million in 2020, compared with 2019. The decrease was primarily attributable to before-tax impairments of \$300 million, decreased equity earnings, lower pipeline and terminal throughput volumes, and higher operating costs, partially offset by an \$84 million before-tax gain recognized in the second quarter of 2020 associated with the Gray Oak Pipeline joint venture.

The \$300 million before-tax impairments consisted of a \$120 million impairment of the pipeline and terminal assets associated with the planned reconfiguration of our San Francisco Refinery into a renewable fuels production facility, a \$96 million impairment of Phillips 66 Partners’ equity investments in two crude oil logistics joint ventures, and an \$84 million impairment of our equity investment in the canceled Red Oak Pipeline project.

See Note 9—Impairments, and Note 27—Phillips 66 Partners LP, in the Notes to Consolidated Financial Statements, for additional information regarding the impairments and the \$84 million before-tax gain, respectively.

Results from our NGL and Other business decreased \$81 million in 2020, compared with 2019. The decrease was mainly due to lower results from our trading activities and decreased margins, partially offset by higher export cargos and increased fractionation volumes from the startup of Frac 2 and Frac 3 in late 2020, as well as the startup of a new isomerization unit at our Lake Charles Refinery in the second half of 2019.

Results from our investment in DCP Midstream decreased \$174 million in 2020, compared with 2019. The decrease was primarily due to higher impairment charges, partially offset by the recognition of a larger benefit to our equity earnings from the amortization of the basis difference associated with the impairments and DCP Midstream’s cost reduction initiatives in response to the challenging business environment. See Note 6—Investments, Loans and Long-Term Receivables, and Note 9—Impairments, in the Notes to Consolidated Financial Statements, for additional information regarding the impairments and the associated basis difference amortization related to our investment in DCP Midstream.

Chemicals

	Year Ended December 31		
	2021	2020	2019
	Millions of Dollars		
Income Before Income Taxes	\$ 1,844	635	879
CPChem Externally Marketed Sales Volumes*	Millions of Pounds		
	2021	2020	2019
Olefins and Polyolefins	19,332	20,993	20,237
Specialties, Aromatics and Styrenics	4,735	4,367	4,281
	24,067	25,360	24,518
Olefins and Polyolefins Capacity Utilization (percent)	95 %	99	97

* Represents 100% of CPChem's outside sales of produced petrochemical products, as well as commission sales from equity affiliates.

The Chemicals segment consists of our 50% interest in CPChem, which we account for under the equity method. CPChem uses NGL and other feedstocks to produce petrochemicals. These products are then marketed and sold or used as feedstocks to produce plastics and other chemicals. We structure our reporting of CPChem's operations around two primary business lines: Olefins and Polyolefins (O&P) and Specialties, Aromatics and Styrenics (SA&S). The O&P business line produces and markets ethylene and other olefin products. Ethylene produced is primarily consumed within CPChem for the production of polyethylene, normal alpha olefins and polyethylene pipe. The SA&S business line manufactures and markets aromatics and styrenics products, such as benzene, cyclohexane, styrene and polystyrene. SA&S also manufactures and/or markets a variety of specialty chemical products. Unless otherwise noted, amounts referenced below reflect our net 50% interest in CPChem.

2021 vs. 2020

Before-tax income from the Chemicals segment increased \$1,209 million in 2021, compared with 2020. The increase was primarily due to improved margins driven by increased sale prices reflecting strong demand and tight supply, partially offset by higher utility, turnaround, maintenance and repair costs.

See the "Executive Overview and Business Environment" section for information on market factors impacting CPChem's 2021 results.

2020 vs. 2019

Before-tax income from the Chemicals segment decreased \$244 million in 2020, compared with 2019. The decrease was mainly due to lower margins and decreased earnings from CPChem's equity affiliates, partially offset by higher sales volumes and a favorable impact from lower-of-cost-or-market adjustments of inventories valued on the last-in-first-out (LIFO) basis attributable to petrochemical product price recovery in 2020.

Refining

	Year Ended December 31		
	2021	2020	2019
	Millions of Dollars		
Income (Loss) Before Income Taxes			
Atlantic Basin/Europe	\$ (36)	(1,224)	608
Gulf Coast	(1,889)	(2,077)	364
Central Corridor	70	(641)	1,338
West Coast	(694)	(2,213)	(324)
Worldwide	\$ (2,549)	(6,155)	1,986

	Dollars Per Barrel		
Income (Loss) Before Income Taxes			
Atlantic Basin/Europe	\$ (0.19)	(7.18)	3.11
Gulf Coast	(7.84)	(9.71)	1.24
Central Corridor	0.73	(6.96)	12.95
West Coast	(6.14)	(20.01)	(2.49)
Worldwide	(3.99)	(10.48)	2.75

Realized Refining Margins*			
Atlantic Basin/Europe	\$ 7.48	2.17	9.33
Gulf Coast	4.92	1.85	7.42
Central Corridor	9.65	7.17	14.91
West Coast	7.49	3.43	9.18
Worldwide	7.15	3.51	9.91

* See the "Non-GAAP Reconciliations" section for a reconciliation of this non-GAAP measure to the most directly comparable measure under generally accepted accounting principles in the United States (GAAP), income (loss) before income taxes per barrel.

	Thousands of Barrels Daily		
	Year Ended December 31		
	2021	2020	2019
Operating Statistics			
Refining operations*			
Atlantic Basin/Europe			
Crude oil capacity	537	537	537
Crude oil processed	479	434	497
Capacity utilization (percent)	89 %	81	92
Refinery production	522	470	541
Gulf Coast**			
Crude oil capacity	720	769	764
Crude oil processed	592	533	725
Capacity utilization (percent)	82 %	69	95
Refinery production	662	586	804
Central Corridor			
Crude oil capacity	531	530	515
Crude oil processed	461	431	498
Capacity utilization (percent)	87 %	81	97
Refinery production	476	446	518
West Coast			
Crude oil capacity	364	364	364
Crude oil processed	284	279	323
Capacity utilization (percent)	78 %	77	89
Refinery production	308	301	354
Worldwide			
Crude oil capacity	2,152	2,200	2,180
Crude oil processed	1,816	1,677	2,043
Capacity utilization (percent)	84 %	76	94
Refinery production	1,968	1,803	2,217

* Includes our share of equity affiliates.

** Excludes operating statistics of the Alliance Refinery beginning on October 1, 2021.

The Refining segment refines crude oil and other feedstocks into petroleum products, such as gasoline, distillates and aviation fuels, as well as renewable fuels, at 12 refineries in the United States and Europe. Our Alliance Refinery sustained significant impacts from Hurricane Ida in August 2021, and in the fourth quarter of 2021, we announced the shutdown of the refinery in connection with plans to convert it to a terminal.

2021 vs. 2020

Results from the Refining segment increased \$3,606 million in 2021, compared with 2020. The improved results in 2021 were primarily due to higher realized refining margins and lower asset impairments, partially offset by increased utility expenses and higher costs related to the shutdown of our Alliance Refinery. The improved realized refining margins in 2021 were mainly attributable to increased market crack spreads, partially offset by higher RIN costs, lower clean product differentials and decreased secondary products margins.

Our worldwide refining crude oil capacity utilization rate was 84% and 76% in 2021 and 2020, respectively. The increase in 2021 was primarily driven by improved market demand for refined petroleum products following the administration of COVID-19 vaccines and the easing of pandemic restrictions.

See Note 9—Impairments, in the Notes to Consolidated Financial Statements, for additional information regarding impairments recorded in our Refining segment during 2021 and 2020.

See the “Executive Overview and Business Environment” section for information on industry crack spreads and other market factors impacting this year’s results.

2020 vs. 2019

Results from the Refining segment decreased \$8,141 million in 2020, compared with 2019. The decreased results in 2020 were due to:

- Lower realized refining margins and decreased refinery production. A sharp decline in demand for refined petroleum products resulting from global economic disruption caused by the COVID-19 pandemic led to lower market crack spreads and reduced refinery production in 2020. In addition, hurricane impacts contributed to the lower refinery production in the Gulf Coast region in 2020.
- A before-tax long-lived asset impairment of \$910 million in the third quarter of 2020 associated with our plan to reconfigure the San Francisco Refinery into a renewable fuels production facility.
- A before-tax goodwill impairment of \$1,845 million in the first quarter of 2020.

Our worldwide refining crude oil capacity utilization rate was 76% and 94% in 2020 and 2019, respectively. The lower utilization rate in 2020 was primarily due to reduced refining runs driven by lower demand for refined petroleum products as a result of the COVID-19 pandemic, as well as hurricane impacts in the Gulf Coast region.

See Note 9—Impairments, in the Notes to Consolidated Financial Statements, for additional information regarding impairments recorded in our Refining segment during 2020.

Marketing and Specialties

	Year Ended December 31		
	2021	2020	2019
	Millions of Dollars		
Income Before Income Taxes			
Marketing and Other	\$ 1,453	1,271	1,199
Specialties	356	175	234
Total Marketing and Specialties	\$ 1,809	1,446	1,433

	Dollars Per Barrel		
Income Before Income Taxes			
U.S.	\$ 1.74	1.42	1.22
International	4.13	4.84	3.58
Realized Marketing Fuel Margins*			
U.S.	\$ 2.19	1.87	1.57
International	5.96	6.34	4.90

* See the "Non-GAAP Reconciliations" section for a reconciliation of this non-GAAP measure to the most directly comparable GAAP measure, income before income taxes per barrel.

	Dollars Per Gallon		
U.S. Average Wholesale Prices*			
Gasoline	\$ 2.46	1.56	2.12
Distillates	2.36	1.47	2.12

* On third-party branded refined petroleum product sales, excluding excise taxes.

	Thousands of Barrels Daily		
Marketing Refined Petroleum Product Sales			
Gasoline	1,154	1,021	1,230
Distillates	959	895	1,104
Other	17	17	18
	2,130	1,933	2,352

The M&S segment purchases for resale and markets refined petroleum products, such as gasoline, distillates and aviation fuels, as well as renewable fuels, mainly in the United States and Europe. In addition, this segment includes the manufacturing and marketing of specialty products, such as base oils and lubricants.

2021 vs. 2020

Before-tax income from the M&S segment increased \$363 million in 2021, compared with 2020. The increase in 2021 was primarily driven by higher realized U.S. marketing fuel margins and increased equity earnings from Excel due to improved base oil margins, partially offset by lower realized international marketing fuel margins.

See the "Executive Overview and Business Environment" section for information on marketing fuel margins and other market factors impacting 2021 results.

2020 vs. 2019

Before-tax income from the M&S segment increased \$13 million in 2020, compared with 2019. The increase was primarily attributable to higher realized marketing fuel margins, partially offset by lower sales volumes for refined petroleum and specialty products driven by decreased demand.

Corporate and Other

	Millions of Dollars		
	Year Ended December 31		
	2021	2020	2019
Loss Before Income Taxes			
Net interest expense	\$ (583)	(485)	(415)
Corporate overhead and other	(391)	(396)	(389)
Total Corporate and Other	\$ (974)	(881)	(804)

Net interest expense consists of interest and financing expense, net of interest income and capitalized interest. Corporate overhead and other includes general and administrative expenses, technology costs, environmental costs associated with sites no longer in operation, foreign currency transaction gains and losses, and other costs not directly associated with an operating segment.

2021 vs. 2020

Net interest expense increased \$98 million in 2021, compared with 2020, primarily driven by lower capitalized interest due to the completion of capital projects and the placement of assets into service, and higher average debt principal balances reflecting debt issuances in the second and fourth quarters of 2020, as well as costs associated with early debt retirement in 2021. See Note 12—Debt, in the Notes to Consolidated Financial Statements, for additional information on the debt issuances in 2020 and debt repayment in 2021.

Corporate overhead and other decreased \$5 million in 2021, compared with 2020.

2020 vs. 2019

Net interest expense increased \$70 million in 2020, compared with 2019, primarily due to higher average debt principal balances, reflecting new debt issuances during 2020, along with decreased interest income driven by lower interest rates in 2020. See Note 12—Debt, in the Notes to Consolidated Financial Statements, for additional information on the debt issuances in 2020.

Corporate overhead and other increased \$7 million in 2020, compared with 2019.

CAPITAL RESOURCES AND LIQUIDITY

Financial Indicators

	Millions of Dollars, Except as Indicated		
	2021	2020	2019
Cash and cash equivalents	\$ 3,147	2,514	1,614
Net cash provided by operating activities	6,017	2,111	4,808
Short-term debt	1,489	987	547
Total debt	14,448	15,893	11,763
Total equity	21,637	21,523	27,169
Percent of total debt to capital*	40 %	42	30
Percent of floating-rate debt to total debt	3 %	12	9

* Capital includes total debt and total equity.

To meet our short- and long-term liquidity requirements, we use a variety of funding sources but rely primarily on cash generated from operating activities and debt financing. During 2021, we generated \$6.0 billion in cash from operations. We used available cash to fund capital expenditures and investments of \$1.9 billion, pay dividends on our common stock of \$1.6 billion, pay down \$1.5 billion in debt, and fund an additional member loan to an equity affiliate of \$310 million. During 2021, cash and cash equivalents increased \$633 million to \$3.1 billion.

Significant Sources of Capital

Operating Activities

During 2021, cash generated by operating activities was \$6.0 billion, a \$3.9 billion increase compared with 2020. The increase was primarily due to improved realized refining margins, a U.S. federal income tax refund of \$1.1 billion received in the second quarter of 2021, and higher cash distributions from our equity affiliates, partially offset by higher operating expenses.

During 2020, cash generated by operating activities was \$2.1 billion, a 56% decrease compared with 2019. The decrease was primarily due to lower realized refining margins, driven by the global economic disruption caused by the COVID-19 pandemic, partially offset by lower cash income taxes paid.

Our short- and long-term operating cash flows are highly dependent upon refining and marketing margins, NGL prices and chemicals margins. Prices and margins in our industry are typically volatile, and are driven by market conditions over which we have little or no control. Absent other mitigating factors, as these prices and margins fluctuate, we would expect a corresponding change in our operating cash flows.

The level and quality of output from our refineries also impact our cash flows. Factors such as operating efficiency, maintenance turnarounds, market conditions, feedstock availability, and weather conditions can affect output. We actively manage the operations of our refineries, and any variability in their operations typically has not been as significant to cash flows as that caused by margins and prices. Our worldwide refining crude oil capacity utilization was 84%, 76% and 94% in 2021, 2020 and 2019, respectively. Our worldwide refining clean product yield was 83%, 84% and 84% in 2021, 2020 and 2019, respectively.

Equity Affiliate Operating Distributions

Our operating cash flows are also impacted by distribution decisions made by our equity affiliates, including CPChem. Over the three years ended December 31, 2021, our operating cash flows included aggregate distributions from our equity affiliates of \$6,285 million, including \$3,101 million from CPChem. We cannot control the amount or timing of future distributions from equity affiliates; therefore, future distributions are not assured.

Tax Refunds

We received a U.S. federal income tax refund of \$1.1 billion in the second quarter of 2021.

Revolving Credit Facilities and Commercial Paper

Phillips 66 has a \$5 billion revolving credit facility which may be used for direct bank borrowings, as support for issuances of letters of credit, and as support for our commercial paper program. We have an option to increase the overall capacity to \$6 billion, subject to certain conditions. We also have the option to extend the scheduled maturity of the facility for up to two additional one-year terms after its July 30, 2024, maturity date, subject to, among other things, the consent of the lenders holding the majority of the commitments and of each lender extending its commitment. The facility is with a broad syndicate of financial institutions and contains covenants that are usual and customary for an agreement of this type, including a maximum consolidated net debt-to-capitalization ratio of 65% as of the last day of each fiscal quarter. The facility has customary events of default, such as nonpayment of principal when due; nonpayment of interest, fees or other amounts; and violation of covenants. Outstanding borrowings under the facility bear interest, at our option, at either: (a) the Eurodollar rate in effect from time to time plus the applicable margin; or (b) the reference rate (as described in the facility) plus the applicable margin. The facility also provides for customary fees, including commitment fees. The pricing levels for the commitment fees and interest-rate margins are determined based on the ratings in effect for Phillips 66's senior unsecured long-term debt from time to time. Phillips 66 may at any time prepay outstanding borrowings under the facility, in whole or in part, without premium or penalty. At December 31, 2021 and 2020, no amount had been drawn under the facility.

Phillips 66 also has a \$5 billion uncommitted commercial paper program for short-term working capital needs that is supported by our revolving credit facility. Commercial paper maturities are contractually limited to 365 days. At December 31, 2021 and 2020, no borrowings were outstanding under the program.

Phillips 66 Partners has a \$750 million revolving credit facility which may be used for direct bank borrowings and as support for issuances of letters of credit. Phillips 66 Partners has an option to increase the overall capacity to \$1 billion, subject to certain conditions. Phillips 66 Partners also has the option to extend the facility for two additional one-year terms after its July 30, 2024, maturity date, subject to, among other things, the consent of the lenders holding the majority of the commitments and of each lender extending its commitment. The facility is with a broad syndicate of financial institutions and contains covenants that are usual and customary for an agreement of this type. The facility has customary events of default, such as nonpayment of principal when due; nonpayment of interest, fees or other amounts; and violation of covenants. Outstanding revolving borrowings under the facility bear interest, at Phillips 66 Partners' option, at either: (a) the Eurodollar rate in effect from time to time plus the applicable margin; or (b) the reference rate (as described in the facility) plus the applicable margin. The facility also provides for customary fees, including commitment fees. The pricing levels for the commitment fees and interest-rate margins are determined based on Phillips 66 Partners' credit ratings in effect from time to time. Borrowings under this facility may be short-term or long-term in duration, and Phillips 66 Partners may at any time prepay outstanding borrowings under the facility, in whole or in part, without premium or penalty. At December 31, 2021, no borrowings were outstanding under this facility, compared with borrowings of \$415 million at December 31, 2020. At both December 31, 2021 and 2020, \$1 million in letters of credit had been issued that were supported by this facility.

We had approximately \$5.7 billion and \$5.3 billion of total committed capacity available under our revolving credit facilities at December 31, 2021 and 2020, respectively.

Other Debt Issuances and Financings

Senior Unsecured Notes

In November 2021, Phillips 66 closed its public offering of \$1 billion aggregate principal amount of 3.300% senior unsecured notes due 2052. Interest on the Senior Notes due 2052 is payable semiannually on March 15 and September 15 of each year, commencing on March 15, 2022. Proceeds received from the public offering were \$982 million, net of underwriters' discounts and commissions, as well as debt issuance costs. In December 2021, Phillips 66 used the proceeds from this offering, together with cash on hand, to repay \$1 billion in aggregate principal amount of its \$2 billion 4.300% Senior Notes due April 2022.

In November 2020, Phillips 66 closed its public offering of \$1.75 billion aggregate principal amount of senior unsecured notes consisting of:

- \$450 million aggregate principal amount of Floating Rate Senior Notes due 2024.
- \$800 million aggregate principal amount of 0.900% Senior Notes due 2024.
- \$500 million aggregate principal amount of 1.300% Senior Notes due 2026.

The Floating Rate Senior Notes bear interest at a floating rate, reset quarterly, equal to the three-month London Interbank Offered Rate plus 0.62% per year, subject to adjustment. In December 2021, we used cash on hand to repay the \$450 million Floating Rate Senior Notes due 2024. Interest on the Senior Notes due 2024 and 2026 is payable semiannually on February 15 and August 15 of each year, commencing on February 15, 2021. Proceeds received from the public offering of senior unsecured notes in November 2020 were \$1.74 billion, net of underwriters' discounts and commissions, as well as debt issuance costs.

In June 2020, Phillips 66 closed its public offering of \$1 billion aggregate principal amount of senior unsecured notes consisting of:

- \$150 million aggregate principal amount of 3.850% Senior Notes due 2025.
- \$850 million aggregate principal amount of 2.150% Senior Notes due 2030.

In April 2020, Phillips 66 closed its public offering of \$1 billion aggregate principal amount of senior unsecured notes consisting of:

- \$500 million aggregate principal amount of 3.700% Senior Notes due 2023.
- \$500 million aggregate principal amount of 3.850% Senior Notes due 2025.

Interest on the Senior Notes due 2023 is payable semiannually on April 6 and October 6 of each year, commencing on October 6, 2020. The Senior Notes due 2025 issued in June 2020 constitute a further issuance of the Senior Notes due 2025 originally issued in April 2020. The \$650 million in aggregate principal amount of Senior Notes due 2025 is treated as a single class of debt securities. Interest on the Senior Notes due 2025 is payable semiannually on April 9 and October 9 of each year, commencing on October 9, 2020. Interest on the Senior Notes due 2030 is payable semiannually on June 15 and December 15 of each year, commencing on December 15, 2020. Proceeds received from the public offerings of senior unsecured notes in June and April of 2020 were \$1,008 million exclusive of accrued interest received, and \$993 million, respectively, net of underwriters' discounts or premiums and commissions, as well as debt issuance costs.

Term Loan Facility

In March 2020, we entered into a \$1 billion 364-day delayed draw term loan agreement (the Facility) and borrowed \$1 billion under the Facility shortly thereafter. In November 2020, we repaid \$500 million of borrowings outstanding under the Facility, and the Facility was amended to extend the maturity date of the remaining \$500 million to November 20, 2023. In September 2021, we repaid the outstanding borrowings of \$500 million.

Availability of Debt Financing

We have an A3 credit rating, with a stable outlook, from Moody's Investors Service and a BBB+ credit rating, with a stable outlook, from Standard & Poor's. In the fourth quarter of 2021, both rating agencies updated their outlooks on our credit ratings from negative to stable. These investment grade ratings have served to lower our borrowing costs and facilitate access to a variety of lenders. We do not have any ratings triggers on any of our corporate debt that would cause an automatic default, and thereby impact our access to liquidity, in the event of a rating downgrade by one or both rating agencies. Failure to maintain investment grade ratings could prohibit us from accessing the commercial paper market, although we would expect to be able to access funds under our liquidity facilities mentioned above.

Phillips 66 Partners' Debt and Equity Financings

In 2013, we formed Phillips 66 Partners, a publicly traded MLP, which owns and operates primarily fee-based midstream assets. At December 31, 2021, we owned 170 million Phillips 66 Partners common units, representing a 74% limited partner interest, while the public owned a 26% limited partner interest and 13.5 million perpetual convertible preferred units. We consolidate Phillips 66 Partners as a variable interest entity for financial reporting purposes. As a result of this consolidation, the public common and preferred unitholders' interests in Phillips 66 Partners are reflected as noncontrolling interests of \$2,169 million in our consolidated balance sheet at December 31, 2021.

During the three years ended December 31, 2021, Phillips 66 Partners raised proceeds, primarily used for its capital spending and investments, from the following third-party debt and equity offerings:

- In April 2021, Phillips 66 Partners entered into a \$450 million term loan agreement and borrowed the full amount. Proceeds from this term loan were primarily used to repay the outstanding borrowings under its \$750 million revolving credit facility.
- In September 2019, Phillips 66 Partners received net proceeds of \$892 million from the issuance of \$300 million of 2.450% Senior Notes due December 2024 and \$600 million of 3.150% Senior Notes due December 2029.
- In March 2019, Phillips 66 Partners entered into a senior unsecured term loan facility with a borrowing capacity of \$400 million due March 20, 2020. Phillips 66 Partners borrowed an aggregate amount of \$400 million under the facility during the first half of 2019, which was repaid in full in September 2019.
- Phillips 66 Partners has authorized an aggregate of \$750 million under three \$250 million continuous offerings of common units, or at-the-market (ATM) programs. Phillips 66 Partners completed the first two programs in June 2018 and December 2019, respectively. For the three years ended December 31, 2021, net proceeds of \$175 million have been received under these programs.

See Note 27—Phillips 66 Partners LP, in the Notes to Consolidated Financial Statements, for additional information regarding Phillips 66 Partners.

Off-Balance Sheet Arrangements

Lease Residual Value Guarantees

Under the operating lease agreement for our headquarters facility in Houston, Texas, we have the option, at the end of the lease term in September 2025, to request to renew the lease, purchase the facility or assist the lessor in marketing it for resale. We have a residual value guarantee associated with the operating lease agreement with a maximum potential future exposure of \$514 million at December 31, 2021. We also have residual value guarantees associated with railcar and airplane leases with maximum potential future exposures totaling \$221 million. These leases have remaining terms of up to ten years.

Dakota Access, LLC (Dakota Access) and Energy Transfer Crude Oil Company, LLC (ETCO)

In 2020, the trial court presiding over litigation regarding the Dakota Access Pipeline ordered the U.S. Army Corps of Engineers (USACE) to prepare an Environmental Impact Statement (EIS) relating to an easement under Lake Oahe in North Dakota and later vacated the easement. Although the easement has been vacated, the USACE has indicated that it will not take action to stop pipeline operations while it proceeds with the EIS, which is expected to be completed in the second half of 2022. In May 2021, the court denied a request for an injunction to shut down the pipeline while the EIS is being prepared and, in June 2021, dismissed the litigation. It is possible that the litigation could be reopened or new litigation challenging the EIS, once completed, could be filed. In September 2021, Dakota Access filed a writ of certiorari, requesting the U.S. Supreme Court to review the lower court's judgment that ordered the EIS and vacated the easement.

In March 2019, a wholly owned subsidiary of Dakota Access closed an offering of \$2.5 billion aggregate principal amount of senior unsecured notes consisting of:

- \$650 million aggregate principal amount of 3.625% Senior Notes due 2022.
- \$1.0 billion aggregate principal amount of 3.900% Senior Notes due 2024.
- \$850 million aggregate principal amount of 4.625% Senior Notes due 2029.

Dakota Access and ETCO have guaranteed repayment of the notes. In addition, Phillips 66 Partners and its co-venturers in Dakota Access provided a Contingent Equity Contribution Undertaking (CECU) in conjunction with the notes offering. Under the CECU, the co-venturers may be severally required to make proportionate equity contributions to Dakota Access if there is an unfavorable final judgment in the above mentioned ongoing litigation. Contributions may be required if Dakota Access determines that the issues included in any such final judgment cannot be remediated and Dakota Access has or is projected to have insufficient funds to satisfy repayment of the notes. If Dakota Access undertakes remediation to cure issues raised in a final judgment, contributions may be required if any series of the notes become due, whether by acceleration or at maturity, during such time, to the extent Dakota Access has or is projected to have insufficient funds to pay such amounts. At December 31, 2021, Phillips 66 Partners' share of the maximum potential equity contributions under the CECU was approximately \$631 million.

If the pipeline is required to cease operations, and should Dakota Access and ETCO not have sufficient funds to pay ongoing expenses, Phillips 66 Partners also could be required to support its share of the ongoing expenses, including scheduled interest payments on the notes of approximately \$25 million annually, in addition to the potential obligations under the CECU.

See Note 13—Guarantees, in the Notes to Consolidated Financial Statements, for additional information on our guarantees.

Capital Requirements

Capital Expenditures and Investments

For information about our capital expenditures and investments, see the “Capital Spending” section below.

Debt Financing

Our debt balance at December 31, 2021, was \$14.4 billion and our total debt-to-capital ratio was 40%. In 2021, we paid down \$1.5 billion in debt and will continue to prioritize debt reduction in 2022. As our operating cash flows improve further, we expect to reduce our debt to pre-COVID-19 pandemic levels over the next couple of years.

See Note 12—Debt, in the Notes to Consolidated Financial Statements, for our annual debt maturities over the next five years and more information on debt repayments.

Joint Venture Loans

During 2020 and 2021, we and our co-venturer provided member loans to WRB. At December 31, 2021, our share of the outstanding member loan balance, including accrued interest, was \$595 million. The need for additional loans to WRB in 2022, as well as WRB’s repayment schedule, will depend on market conditions.

Dividends

On February 9, 2022, our Board of Directors declared a quarterly cash dividend of \$0.92 per common share, payable March 1, 2022, to holders of record at the close of business on February 22, 2022. We expect that our Board of Directors will continue to declare a competitive and growing dividend in 2022.

Share Repurchases

Since July 2012, our board of directors has authorized an aggregate of \$15 billion of repurchases of our outstanding common stock. The authorizations do not have expiration dates. The share repurchases are expected to be funded primarily through available cash. We are not obligated to repurchase any shares of common stock pursuant to these authorizations and may commence, suspend or terminate repurchases at any time. Since the inception of our share repurchase program in 2012, we have repurchased 159 million shares at an aggregate cost of \$12.5 billion. Shares of stock repurchased are held as treasury shares. We suspended our share repurchase program in March 2020 to preserve liquidity. As operating cash flows improve further, we will prioritize shareholder returns and debt repayment.

Pending Merger with Phillips 66 Partners

On October 26, 2021, we entered into a definitive merger agreement with Phillips 66 Partners to acquire all of the limited partner interests in Phillips 66 Partners not already owned by us on the closing date of the transaction. The agreement provides for an all-stock transaction in which each outstanding Phillips 66 Partners common unitholder would receive 0.50 shares of Phillips 66 common stock for each Phillips 66 Partners common unit. Phillips 66 Partners’ perpetual convertible preferred units would be converted into common units at a premium to the original issuance price prior to exchange for Phillips 66 common stock. This merger is expected to close in March 2022, subject to customary closing conditions.

Based on the closing market prices of Phillips 66 common stock and Phillips 66 Partners common units on December 31, 2021, we would issue approximately 44 million shares of our common stock with a value of approximately \$3.2 billion on the closing date of this transaction. The number of shares of common stock we will issue and the value of those shares are subject to change until the merger is closed.

See Note 27—Phillips 66 Partners LP, in the Notes to Consolidated Financial Statements, for additional information on the pending merger.

Contractual Obligations

Our contractual obligations primarily consist of purchase obligations, outstanding debt principal and interest obligations, operating and finance lease obligations, and asset retirement and environmental obligations.

Purchase Obligations

Our purchase obligations represent agreements to purchase goods or services that are enforceable, legally binding and specify all significant terms. We expect these purchase obligations will be fulfilled with operating cash flows in the period when due. As of December 31, 2021, our purchase obligations totaled \$113.9 billion, with \$43.0 billion due within one year.

The majority of our purchase obligations are market-based contracts, including exchanges and futures, for the purchase of products such as crude oil and raw NGL. The products are used to supply our refineries and fractionators and optimize our supply chain. At December 31, 2021, product purchase commitments with third parties and related parties were \$44.8 billion and \$51.3 billion, respectively. The remaining purchase obligations mainly represent agreements to access and utilize the capacity of third-party equipment and facilities, including pipelines and product terminals, to transport, process, treat, and store products, and our net share of purchase commitments for materials and services for jointly owned facilities where we are the operator.

Debt Principal and Interest Obligations

As of December 31, 2021, our aggregate principal amount of outstanding debt was \$14.3 billion, with \$1.5 billion due within one year. Our obligations for interest on the debt totaled \$7.5 billion, with \$513 million due within one year. See Note 12—Debt, in the Notes to Consolidated Financial Statements, for additional information regarding our outstanding debt principal and interest obligations.

Finance and Operating Lease Obligations

See Note 18—Leases, in the Notes to Consolidated Financial Statements, for information regarding our lease obligations and timing of our expected lease payments.

Asset Retirement and Environmental Obligations

See Note 10—Asset Retirement Obligations and Accrued Environmental Costs, in the Notes to Consolidated Financial Statements, for information regarding asset retirement and environmental obligations.

Capital Spending

Our capital expenditures and investments represent consolidated capital spending. Our adjusted capital spending is a non-GAAP financial measure that demonstrates our net share of capital spending, and reflects an adjustment for the portion of our consolidated capital spending funded by certain joint venture partners.

	Millions of Dollars			
	2022 Budget	2021	2020	2019
Capital Expenditures and Investments				
Midstream	\$ 703	738	1,747	2,292
Chemicals	—	—	—	—
Refining	896	779	816	1,001
Marketing and Specialties	144	202	173	374
Corporate and Other	165	141	184	206
Total Capital Expenditures and Investments	1,908	1,860	2,920	3,873
Less: capital spending funded by certain joint venture partners*	2	—	61	423
Adjusted Capital Spending	\$ 1,906	1,860	2,859	3,450
Selected Equity Affiliates**				
DCP Midstream	\$ 128	55	119	472
CPChem	717	367	284	382
WRB	220	229	175	175
	\$ 1,065	651	578	1,029

* Included in the Midstream segment.

** Our share of joint venture's capital spending.

Midstream

Capital spending in our Midstream segment was \$4.8 billion for the three-year period ended December 31, 2021, including:

- Continued development and expansion of Gulf Coast fractionation capacity at our Sweeny Hub. We completed two NGL fractionators (Sweeny Fracs 2 and 3) which commenced operations in 2020. In 2021, we resumed the construction of Sweeny Frac 4.
- Contributions by Phillips 66 Partners to fund the Gray Oak Pipeline project and South Texas Gateway Terminal development activities.
- Completion of construction activities on Phillips 66 Partners' C2G Pipeline, a new 16 inch ethane pipeline that connects Phillips 66 Partners' Clemens Caverns storage facility to petrochemical facilities in Gregory, Texas, near Corpus Christi.
- Investments in NOVONIX and a renewable feedstock processing plant.
- Construction of Phillips 66 Partners' Sweeny to Pasadena refined petroleum product pipeline.
- Construction activities to increase storage and export capacity at our Beaumont Terminal.
- Contributions to Dakota Access by Phillips 66 Partners for a pipeline optimization project.
- Construction of Phillips 66 Partners' new isomerization unit at the Lake Charles Refinery.

- Contributions to Bayou Bridge Pipeline, LLC, a Phillips 66 Partners' 40 percent-owned joint venture, for the construction of a pipeline from Nederland, Texas, to Lake Charles, Louisiana, and a pipeline segment from Lake Charles to St. James, Louisiana.
- Spending associated with other return, reliability, and maintenance projects in our Transportation and NGL businesses.

During the three-year period ended December 31, 2021, DCP Midstream's self-funded capital expenditures and investments were \$1.3 billion on a 100% basis. Capital spending during this period was primarily for expansion projects and maintenance capital expenditures for existing assets. Expansion projects included construction of the Latham II offload facilities, the Cheyenne Connector, and the O'Connor 2 plant, as well as investments in the Sand Hills, Southern Hills and Gulf Coast Express pipeline joint ventures.

Chemicals

During the three-year period ended December 31, 2021, CPChem had a self-funded capital program that totaled \$2.1 billion on a 100% basis. Capital spending was primarily for the development of petrochemical projects on the U.S. Gulf Coast and in the Middle East, as well as sustaining, debottlenecking and optimization projects on existing assets.

Refining

Capital spending for the Refining segment during the three-year period ended December 31, 2021, was \$2.6 billion, primarily for refinery upgrade projects to enhance the yield of high-value products, renewable diesel projects, improvements to the operating integrity of key processing units, and safety-related projects.

Key projects completed during the three-year period included:

- Installation of facilities to improve product value at our Ponca City Refinery and facilities to provide flexibility to produce renewable diesel at our San Francisco Refinery.
- Installation of facilities to improve clean product yield at the Ponca City and Lake Charles refineries, as well as the jointly owned Borger Refinery.
- Installation of facilities to improve product value at the Sweeny, Humber and Los Angeles refineries.
- Installation of facilities to improve processing of advantaged crude at the Humber refinery.
- Installation of facilities to comply with the EPA Tier 3 gasoline regulations at the Ferndale Refinery.

Marketing and Specialties

Capital spending for the M&S segment during the three-year period ended December 31, 2021, was primarily for investment in retail marketing joint ventures in the U.S. West Coast and Central regions; the continued acquisition, development and enhancement of retail sites in Europe; and acquisition of a commercial fleet fueling business in California, which will provide further placement opportunities for renewable diesel production to end-use customers.

Corporate and Other

Capital spending for Corporate and Other during the three-year period ended December 31, 2021, was primarily for information technology and facilities.

2022 Budget

Our 2022 capital budget is \$1.9 billion, including \$992 million for sustaining capital and \$916 million for growth capital. Approximately 45% of growth capital supports lower-carbon opportunities. Our projected \$1.9 billion capital budget excludes our portion of planned capital spending by our major joint ventures CPChem, WRB and DCP Midstream totaling \$1.1 billion.

The Midstream capital budget of \$703 million includes a growth capital budget of \$426 million which will be directed toward completing construction of Sweeny Frac 4, repayment of Phillips 66 Partners' 25% share of Dakota Access' debt due in 2022, and investment opportunities to advance our lower-carbon efforts. The Midstream capital budget also includes \$277 million for sustaining projects. In Refining, the total capital budget of \$896 million consists of \$488 million for reliability, safety and environmental projects and \$408 million of growth capital primarily for the reconfiguration of our San Francisco Refinery as part of the Rodeo Renewed project. The M&S capital budget of \$144 million reflects the continued development and enhancement of our retail network, including energy transition opportunities. The Corporate and Other capital budget is \$165 million primarily for digital transformation projects.

Contingencies

A number of lawsuits involving a variety of claims that arose in the ordinary course of business have been filed against us or are subject to indemnifications provided by us. We also may be required to remove or mitigate the effects on the environment of the placement, storage, disposal or release of certain chemical, mineral and petroleum substances at various active and inactive sites. We regularly assess the need for financial recognition or disclosure of these contingencies. In the case of all known contingencies (other than those related to income taxes), we accrue a liability when the loss is probable and the amount is reasonably estimable. If a range of amounts can be reasonably estimated and no amount within the range is a better estimate than any other amount, then the minimum of the range is accrued. We do not reduce these liabilities for potential insurance or third-party recoveries. If applicable, we accrue receivables for probable insurance or other third-party recoveries. In the case of income tax-related contingencies, we use a cumulative probability-weighted loss accrual in cases where sustaining a tax position is uncertain.

Based on currently available information, we believe it is remote that future costs related to known contingent liability exposures will exceed current accruals by an amount that would have a material adverse impact on our consolidated financial statements. As we learn new facts concerning contingencies, we reassess our position both with respect to accrued liabilities and other potential exposures. Estimates particularly sensitive to future changes include contingent liabilities recorded for environmental remediation, tax and legal matters. Estimated future environmental remediation costs are subject to change due to such factors as the uncertain magnitude of cleanup costs, the unknown time and extent of such remedial actions that may be required, and the determination of our liability in proportion to that of other potentially responsible parties. Estimated future costs related to tax and legal matters are subject to change as events evolve and as additional information becomes available during the administrative and litigation processes.

Legal and Tax Matters

Our legal and tax matters are handled by our legal and tax organizations. These organizations apply their knowledge, experience and professional judgment to the specific characteristics of our cases and uncertain tax positions. We employ a litigation management process to manage and monitor the legal proceedings. Our process facilitates the early evaluation and quantification of potential exposures in individual cases and enables the tracking of those cases that have been scheduled for trial and/or mediation. Based on professional judgment and experience in using these litigation management tools and available information about current developments in all our cases, our legal organization regularly assesses the adequacy of current accruals and determines if adjustment of existing accruals, or establishment of new accruals, is required. In the case of income tax-related contingencies, we monitor tax legislation and court decisions, the status of tax audits and the statute of limitations within which a taxing authority can assert a liability. See Note 21—Income Taxes, in the Notes to Consolidated Financial Statements, for additional information about income tax-related contingencies.

Environmental

We are subject to numerous international, federal, state and local environmental laws and regulations. Among the most significant of these international and federal environmental laws and regulations are the:

- U.S. Federal Clean Air Act, which governs air emissions.
- U.S. Federal Clean Water Act, which governs discharges into water bodies.
- European Union Regulation for Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), which governs production, marketing and use of chemicals.
- U.S. Federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), which imposes liability on generators, transporters and arrangers of hazardous substances at sites where hazardous substance releases have occurred or are threatening to occur.
- U.S. Federal Resource Conservation and Recovery Act (RCRA), which governs the treatment, storage and disposal of solid waste.
- U.S. Federal Emergency Planning and Community Right-to-Know Act (EPCRA), which requires facilities to report toxic chemical inventories to local emergency planning committees and response departments.
- U.S. Federal Oil Pollution Act of 1990 (OPA90), under which owners and operators of onshore facilities and pipelines as well as owners and operators of vessels are liable for removal costs and damages that result from a discharge of crude oil into navigable waters of the United States.
- European Union Trading Directive resulting in the European Union Emissions Trading Scheme (EU ETS), which uses a market-based mechanism to incentivize the reduction of greenhouse gas (GHG) emissions, as well as the United Kingdom Emissions Trading Scheme (UK ETS), which replaced the EU ETS in the United Kingdom on January 1, 2021, but the United Kingdom had the obligation and retained the ability to enforce the EU ETS obligations until April 30, 2021.

These laws and their implementing regulations set limits on emissions and, in the case of discharges to water, establish water quality limits. They also, in most cases, require permits in association with new or modified operations. These permits can require an applicant to collect substantial information in connection with the application process, which can be expensive and time consuming. In addition, there can be delays associated with notice and comment periods and the agency's processing of the application. Many of the delays associated with the permitting process are beyond the control of the applicant.

Other foreign countries and many states where we operate also have, or are developing, similar environmental laws and regulations governing these same types of activities. While similar, in some cases these regulations may impose additional, or more stringent, requirements that can add to the cost and difficulty of developing infrastructure and marketing and transporting products across state and international borders. For example, in California the South Coast Air Quality Management District (SCAQMD) approved amendments to the Regional Clean Air Incentives Market (RECLAIM) that became effective in 2016, which require a phased reduction of nitrogen oxide emissions through 2022, affecting refineries in the Los Angeles metropolitan area. In 2017, SCAQMD required additional nitrogen dioxide emissions reductions through 2025 and, on November 5, 2021, promulgated new regulations to replace the RECLAIM program with a traditional command and control regulatory regime.

The ultimate financial impact arising from environmental laws and regulations is neither clearly known nor easily determinable as new standards, such as air emission standards, water quality standards and stricter fuel regulations, continue to evolve. However, environmental laws and regulations, including those that may arise to address concerns about global climate change, are expected to continue to have an increasing impact on our operations in the United States and in other countries in which we operate. Notable areas of potential impacts include air emissions compliance and remediation obligations in the United States.

An example of this in the fuels area is the Energy Independence and Security Act of 2007 (EISA). It requires fuel producers and importers to provide additional renewable fuels for transportation motor fuels and stipulates a mix of various types. RINs form the mechanism used by the EPA to record compliance with the Renewable Fuel Standard (RFS). If an obligated party has more RINs than it needs to meet its obligation, it may sell or trade the extra RINs, or instead choose to “bank” them for use the following year. We have met the requirements to date while establishing implementation, operating and capital strategies, along with advanced technology development, to address projected future renewable volume obligation (RVO) requirements. On December 7, 2021, the EPA proposed RVO for the 2021 and 2022 compliance years, which essentially holds the 2021 RVO to actual volumes of biofuel consumption, while increasing the volumes in 2022. The EPA also re-proposed the compliance year 2020 RVO, also holding them to actual volumes. It is uncertain how various future RVO requirements contained in EISA, and the regulations promulgated thereunder, may be implemented and what their full impact may be on our operations. Additionally, we may experience a decrease in demand for refined petroleum products due to the regulatory program as currently promulgated. This program continues to be the subject of possible Congressional review and re-promulgation in revised form, and the EPA’s final regulations establishing RVO requirements have been and continue to be subject to legal challenge, further creating uncertainty regarding RVO requirements. Compliance with the regulation has been further complicated as the market for RINs has been the subject of fraudulent third-party activity, and it is possible that some RINs that we have purchased may be determined to be invalid. Should that occur, we could incur costs to replace those fraudulent RINs. Although the cost for replacing any fraudulently marketed RINs is not reasonably estimable at this time, we would not expect such costs to have a material impact on our results of operations or financial condition.

We are required to purchase RINs in the open market to satisfy the portion of our obligation under the RFS that is not fulfilled by blending renewable fuels into the motor fuels we produce. For the years ended December 31, 2021, 2020 and 2019, we incurred expenses of \$441 million, \$342 million and \$111 million, respectively, associated with our obligation to purchase RINs in the open market to comply with the RFS for our wholly owned refineries. These expenses are included in the “Purchased crude oil and products” line item on our consolidated statement of operations. Our jointly owned refineries also incurred expenses associated with the purchase of RINs in the open market, of which our share was \$351 million, \$133 million and \$74 million for the years ended December 31, 2021, 2020 and 2019, respectively. These expenses are included in the “Equity in earnings of affiliates” line item on our consolidated statement of operations. The amount of these expenses and fluctuations between periods is primarily driven by the market price of RINs, refinery production, blending activities, and RVO requirements.

We also are subject to certain laws and regulations relating to environmental remediation obligations associated with current and past operations. Such laws and regulations include CERCLA and RCRA and their state equivalents. Remediation obligations include cleanup responsibility arising from petroleum releases from underground storage tanks located at numerous previously and currently owned and/or operated petroleum-marketing outlets throughout the United States. Federal and state laws require contamination caused by such underground storage tank releases be assessed and remediated to meet applicable standards. In addition to other cleanup standards, many states have adopted cleanup criteria for methyl tertiary-butyl ether (MTBE) for both soil and groundwater and both the EPA and many states may adopt cleanup standards for per- and polyfluoroalkyl substances (PFAS), which may have been a constituent in certain firefighting foams used or stored at or near some of our facilities.

At RCRA-permitted facilities, we are required to assess environmental conditions. If conditions warrant, we may be required to remediate contamination caused by prior operations. In contrast to CERCLA, which is often referred to as “Superfund,” the cost of corrective action activities under RCRA corrective action programs typically is borne solely by us. We anticipate increased expenditures for RCRA remediation activities may be required, but such annual expenditures for the near term are not expected to vary significantly from the range of such expenditures we have experienced over the past few years. Longer-term expenditures are subject to considerable uncertainty and may fluctuate significantly.

We occasionally receive requests for information or notices of potential liability from the EPA and state environmental agencies alleging that we are a potentially responsible party under CERCLA or an equivalent state statute. On occasion, we also have been made a party to cost recovery litigation by those agencies or by private parties. These requests, notices and lawsuits assert potential liability for remediation costs at various sites that typically are not owned by us, but allegedly contain wastes attributable to our past operations. As of December 31, 2020, we reported that we had been notified of potential liability under CERCLA and comparable state laws at 25 sites within the United States. During 2021, there were no new sites for which we received notice of potential liability nor were any existing sites deemed resolved and closed, leaving 25 unresolved sites with potential liability at December 31, 2021.

For the majority of Superfund sites, our potential liability will be less than the total site remediation costs because the percentage of waste attributable to us, versus that attributable to all other potentially responsible parties, is relatively low. Although liability of those potentially responsible is generally joint and several for federal sites and frequently so for state sites, other potentially responsible parties at sites where we are a party typically have had the financial strength to meet their obligations, and where they have not, or where potentially responsible parties could not be located, our share of liability has not increased materially. Many of the sites for which we are potentially responsible are still under investigation by the EPA or the state agencies concerned. Prior to actual cleanup, those potentially responsible normally assess site conditions, apportion responsibility and determine the appropriate remediation. In some instances, we may have no liability or attain a settlement of liability. Actual cleanup costs generally occur after the parties obtain the EPA or equivalent state agency approval of a remediation plan. There are relatively few sites where we are a major participant, and given the timing and amounts of anticipated expenditures, neither the cost of remediation at those sites nor such costs at all CERCLA sites, in the aggregate, is expected to have a material adverse effect on our competitive or financial condition.

We incur costs related to the prevention, control, abatement or elimination of environmental pollution. Expensed environmental costs were \$726 million in 2021 and are expected to be approximately \$725 million and \$775 million in 2022 and 2023, respectively. Capitalized environmental costs were \$96 million in 2021 and are expected to be approximately \$115 million and \$165 million, in 2022 and 2023, respectively. These amounts do not include capital expenditures made for other purposes that have an indirect benefit on environmental compliance.

Accrued liabilities for remediation activities are not reduced for potential recoveries from insurers or other third parties and are not discounted (except those assumed in a business combination, which we record on a discounted basis).

Many of these liabilities result from CERCLA, RCRA and similar state laws that require us to undertake certain investigative and remedial activities at sites where we conduct, or once conducted, operations or at sites where our generated waste was disposed. We also have accrued for a number of sites we identified that may require environmental remediation, but which are not currently the subject of CERCLA, RCRA or state enforcement activities. If applicable, we accrue receivables for probable insurance or other third-party recoveries. In the future, we may incur significant costs under both CERCLA and RCRA. Remediation activities vary substantially in duration and cost from site to site, depending on the mix of unique site characteristics, evolving remediation technologies, diverse regulatory agencies and enforcement policies, and the presence or absence of potentially liable third parties. Therefore, it is difficult to develop reasonable estimates of future site remediation costs.

Notwithstanding any of the foregoing, and as with other companies engaged in similar businesses, environmental costs and liabilities are inherent concerns in certain of our operations and products, and there can be no assurance that those costs and liabilities will not be material. However, we currently do not expect any material adverse effect on our results of operations or financial position as a result of compliance with current environmental laws and regulations.

Climate Change

There has been a broad range of proposed or promulgated state, national and international laws focusing on GHG emissions reduction, including various regulations proposed or issued by the EPA. These proposed or promulgated laws apply or could apply in states and/or countries where we have interests or may have interests in the future. Laws regulating GHG emissions continue to evolve, and while it is not possible to accurately estimate either a timetable for implementation or our future compliance costs relating to implementation, such laws potentially could have a material impact on our results of operations and financial condition as a result of increasing costs of compliance, lengthening project implementation and agency reviews, or reducing demand for certain hydrocarbon products. Examples of legislation or precursors for possible regulation that do or could affect our operations include:

- EU ETS, which is part of the European Union's policy to combat climate change and is a key tool for reducing industrial GHG emissions. EU ETS impacts factories, power stations and other installations across all EU member states. As a result of the United Kingdom's exit from the European Union (BREXIT), those types of entities in the United Kingdom became subject to the UK ETS, rather than the EU ETS, after the EU ETS 2020 scheme year ended on April 30, 2021.

- California's Senate Bill No. 32, which requires reduction of California's GHG emissions to 40% below the 1990 emission level by 2030, and Assembly Bill 398, which extends the California GHG emission cap and trade program through 2030. Other GHG emissions programs in the western U.S. states have been enacted or are under consideration or development, including amendments to California's Low Carbon Fuel Standard, Oregon's Low Carbon Fuel Standard and Climate Protection Plan, and Washington's carbon reduction programs.
- The U.S. Supreme Court decision in Massachusetts v. EPA, 549 U.S. 497, 127 S. Ct. 1438 (2007), confirming that the EPA has the authority to regulate carbon dioxide as an "air pollutant" under the Federal Clean Air Act.
- The EPA's announcement on March 29, 2010 (published as "Interpretation of Regulations that Determine Pollutants Covered by Clean Air Act Permitting Programs," 75 Fed. Reg. 17004 (April 2, 2010)), and the EPA's and U.S. Department of Transportation's joint promulgation of a Final Rule on April 1, 2010, that triggers regulation of GHGs under the Clean Air Act. These collectively may lead to more climate-based claims for damages, and may result in longer agency review time for development projects to determine the extent of potential climate change.
- The EPA's 2015 Final Rule regulating GHG emissions from existing fossil fuel-fired electrical generating units under the Federal Clean Air Act, commonly referred to as the Clean Power Plan. The EPA commenced rulemaking in 2017 to rescind the Clean Power Plan and, in August 2018, the EPA proposed the Affordable Clean Energy (ACE) rule as its replacement. On January 19, 2021, the U.S. Court of Appeals for the District of Columbia invalidated the ACE rule and remanded the matter to the EPA, essentially restarting this rulemaking process.
- Carbon taxes in certain jurisdictions.
- GHG emission cap and trade programs in certain jurisdictions.

In the EU, the first phase of the EU ETS completed at the end of 2007. Phase II was undertaken from 2008 through 2012, and Phase III ran from 2013 through to 2020. Phase IV runs from January 1, 2021 through 2030 and sectors covered under the ETS must reduce their GHG emissions by 43% compared to 2005 levels. Since January 1, 2021, the United Kingdom is no longer part of the EU ETS and, instead, has been under the UK ETS. However, the United Kingdom had the obligation and retained the ability to enforce the EU ETS obligations until April 30, 2021. Phillips 66 has assets that are subject to the EU ETS and assets that are subject to the UK ETS.

From November 30 to December 12, 2015, more than 190 countries, including the United States, participated in the United Nations Climate Change Conference in Paris, France. The conference culminated in what is known as the "Paris Agreement," which, upon certain conditions being met, entered into force on November 4, 2016. The Paris Agreement establishes a commitment by signatory parties to pursue domestic GHG emission reductions. In 2017, President Trump announced his intention to withdraw the United States from the Paris Agreement and that withdrawal became effective on November 4, 2020. On January 20, 2021, President Biden signed the "Acceptance on Behalf of the United States of America," which allows the United States to rejoin the Paris Agreement. The United States officially rejoined the Paris Agreement in February 2021, which could lead to additional GHG emission reduction requirements for sources in the United States.

In the United States, some additional form of regulation is likely to be forthcoming at the state or federal levels with respect to GHG emissions. Such regulation could take any of several forms that may result in additional financial burden in the form of taxes, the restriction of output, investments of capital to maintain compliance with laws and regulations, or required acquisition or trading of emission allowances.

Compliance with changes in laws and regulations that create a GHG emission trading program, GHG reduction requirements or carbon taxes could significantly increase our costs, reduce demand for fossil energy derived products, impact the cost and availability of capital and increase our exposure to litigation. Such laws and regulations could also increase demand for less carbon intensive energy sources.

An example of one such program is California's cap and trade program, which was promulgated pursuant to the State's Global Warming Solutions Act. The program had been limited to certain stationary sources, which include our refineries in California, but beginning in January 2015 was expanded to include emissions from transportation fuels distributed in California. Inclusion of transportation fuels in California's cap and trade program as currently promulgated has increased our cap and trade program compliance costs. The ultimate impact on our financial performance, either positive or negative, from this and similar programs, will depend on a number of factors, including, but not limited to:

- Whether and to what extent legislation or regulation is enacted.
- The nature of the legislation or regulation, such as a cap and trade system or a tax on emissions.
- The GHG reductions required.
- The price and availability of offsets.
- The demand for, and amount and allocation of allowances.
- Technological and scientific developments leading to new products or services.
- Any potential significant physical effects of climate change, such as increased severe weather events, changes in sea levels and changes in temperature.
- Whether, and the extent to which, increased compliance costs are ultimately reflected in the prices of our products and services.

We consider and take into account anticipated future GHG emissions in designing and developing major facilities and projects, and implement energy efficiency initiatives to reduce GHG emissions. Data on our GHG emissions, legal requirements regulating such emissions, and the possible physical effects of climate change on our coastal assets are incorporated into our planning, investment, and risk management decision-making. We are working to continuously improve operational and energy efficiency through resource and energy conservation throughout our operations.

In September 2021, we announced a set of company-wide GHG emission intensity reduction targets that we consider to be impactful, attainable and measurable. By 2030, we expect to reduce GHG emission intensity by 30% for Scope 1 and 2 emissions from our operations and by 15% for Scope 3 emissions from our energy products, below 2019 levels.

In addition to the disclosures above, we have issued our 2021 Sustainability Report that is accessible on our website and provides more detailed information on our Environmental, Social and Corporate Governance (ESG) initiatives, including detailed information on environmental metrics.

CRITICAL ACCOUNTING ESTIMATES

The preparation of financial statements in conformity with GAAP requires management to select appropriate accounting policies and to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses. See Note 1—Summary of Significant Accounting Policies, in the Notes to Consolidated Financial Statements, for descriptions of our major accounting policies. Some of these accounting policies involve judgments and uncertainties to such an extent that there is a reasonable likelihood that materially different amounts would have been reported under different conditions, or if different assumptions had been used. The following discussion of critical accounting estimates, along with the discussion of contingencies in this report, addresses all important accounting areas where the nature of accounting estimates or assumptions could be material due to the levels of subjectivity and judgment necessary to account for highly uncertain matters or the susceptibility of such matters to change.

Impairment of Long-Lived Assets and Equity Method Investments

Long-lived assets used in operations are assessed for impairment whenever changes in facts and circumstances indicate a possible significant deterioration in future expected cash flows. If the sum of the undiscounted expected future before-tax cash flows of an asset group is less than the carrying value, including applicable liabilities, the carrying value is written down to estimated fair value. Individual assets are grouped for impairment purposes based on a judgmental assessment of the lowest level for which there are identifiable cash flows that are largely independent of the cash flows of other assets. Because there usually is a lack of quoted market prices for long-lived assets, the fair value of impaired assets is typically determined using one or more of the following methods: the present value of expected future cash flows using discount rates and other assumptions believed to be consistent with those used by principal market participants; a market multiple for similar assets; historical market transactions including similar assets, adjusted using principal market participant assumptions when necessary; or replacement cost adjusted for physical deterioration and economic obsolescence. The expected future cash flows used for impairment reviews and related fair value calculations are based on judgmental assessments, including future volumes, commodity prices, operating costs, margins, discount rates and capital project decisions, considering all available information at the date of review.

Investments in nonconsolidated entities accounted for under the equity method are assessed for impairment when there are indicators of a loss in value, such as a lack of sustained earnings capacity or a current fair value less than the investment's carrying amount. When it is determined that an indicated impairment is other than temporary, a charge is recognized for the difference between the investment's carrying value and its estimated fair value. When determining whether a decline in value is other than temporary, management considers factors such as the duration and extent of the decline, the investee's financial condition and near-term prospects, and our ability and intention to retain our investment for a period that allows for recovery. When quoted market prices are not available, the fair value is usually based on the present value of expected future cash flows using discount rates and other assumptions believed to be consistent with those used by principal market participants and observed market earnings multiples of comparable companies, if appropriate. Different assumptions could affect the timing and the amount of an impairment of an investment in any period.

See Note 9—Impairments, in the Notes to Consolidated Financial Statements, for information about significant impairments recorded in 2021, 2020 and 2019.

Asset Retirement Obligations

Under various contracts, permits and regulations, we have legal obligations to remove tangible long-lived assets and restore the land at the end of operations at certain operational sites. Estimating the timing and cost of future asset removals is difficult. Our recognized asset retirement obligations primarily involve asbestos abatement at our refineries; decommissioning, removal or dismantlement of certain assets at refineries that have or will be shut down; and dismantlement or removal of assets at certain leased international marketing sites. Many of these removal obligations are many years, or decades, in the future, and the contracts and regulations often have vague descriptions of what removal practices and criteria must be met when the removal event actually occurs. Asset removal technologies and costs, regulatory and other compliance considerations, expenditure timing, and other inputs into valuation of the obligation, including discount and inflation rates, are also subject to change.

Environmental Costs

In addition to asset retirement obligations discussed above, we have certain obligations to complete environmental-related projects. These projects are primarily related to cleanup at domestic refineries, underground storage sites and nonoperated sites. Future environmental remediation costs are difficult to estimate because they are subject to change due to such factors as the uncertain magnitude of cleanup costs, timing and extent of such remedial actions that may be required, and the determination of our liability in proportion to that of other responsible parties.

Intangible Assets and Goodwill

At December 31, 2021, we had \$715 million of intangible assets that we have determined to have indefinite useful lives, and therefore do not amortize. The judgmental determination that an intangible asset has an indefinite useful life is continuously evaluated. If, due to changes in facts and circumstances, management determines these intangible assets have finite useful lives, amortization will commence at that time on a prospective basis. As long as these intangible assets are determined to have indefinite lives, they will be subject to at least annual impairment tests that require management's judgment of their estimated fair value.

At December 31, 2021, we had \$1.5 billion of goodwill primarily related to past business combinations. Goodwill is not amortized. Instead, goodwill is subject to at least annual tests for impairment at a reporting unit level. A reporting unit is an operating segment or a component that is one level below an operating segment, and it is determined primarily based on the manner in which the business is managed.

We perform our annual goodwill impairment test using a qualitative assessment and a quantitative assessment, if one is deemed necessary. As part of our qualitative assessment, we evaluate relevant events and circumstances that could affect the fair value of our reporting units, including macroeconomic conditions, overall industry and market considerations and regulatory changes, as well as company-specific market metrics, performance and events. The evaluation of company-specific events and circumstances includes evaluating changes in our stock price and cost of capital, actual and forecasted financial performance, as well as the effect of significant asset dispositions. If our qualitative assessment indicates it is likely the fair value of a reporting unit has declined below its carrying value (including goodwill), a quantitative assessment is performed.

When a quantitative assessment is performed, management applies judgment in determining the estimated fair values of the reporting units because quoted market prices for our reporting units are not available. Management uses available information to make this fair value determination, including estimated future cash flows, cost of capital, observed market earnings multiples of comparable companies, our common stock price and associated total company market capitalization.

We completed our annual qualitative assessment of goodwill as of October 1, 2021, and concluded that the fair values of our reporting units exceeded their respective carrying values (including goodwill). A decline in the estimated fair value of one or more of our reporting units in the future could result in an impairment. As such, we continue to monitor for indicators of impairment until our next annual impairment assessment is performed.

See Note 9—Impairments, and Note 16—Fair Value Measurements, in the Notes to Consolidated Financial Statements, for additional information regarding the goodwill impairment we recorded in the first quarter of 2020.

Tax Assets and Liabilities

Our operations are subject to various taxes, including federal, state and foreign income taxes, property taxes, and transactional taxes such as excise, sales and use, value-added and payroll taxes. We record tax liabilities based on our assessment of existing tax laws and regulations. The recording of tax liabilities requires significant judgment and estimates. We recognize the financial statement effects of an income tax position when it is more likely than not that the position will be sustained upon examination by a taxing authority. A contingent liability related to a transactional tax claim is recorded if the loss is both probable and reasonably estimable. Actual incurred tax liabilities can vary from our estimates for a variety of reasons, including different interpretations of tax laws and regulations and different assessments of the amount of tax due.

In determining our income tax expense (benefit), we assess the likelihood our deferred tax assets will be recovered through future taxable income. Valuation allowances reduce deferred tax assets to an amount that will, more likely than not, be realized. Judgment is required in estimating the amount of valuation allowance, if any, that should be recorded against our deferred tax assets. Based on our historical taxable income, our expectations for the future, and available tax-planning strategies, we expect our net deferred tax assets will more likely than not be realized as offsets to reversing deferred tax liabilities and as reductions to future taxable income. If our actual results of operations differ from such estimates or our estimates of future taxable income change, the valuation allowance may need to be revised.

New tax laws and regulations, as well as changes to existing tax laws and regulations, are continuously being proposed or promulgated. The implementation of future legislative and regulatory tax initiatives could result in increased income tax liabilities that cannot be predicted at this time.

Projected Benefit Obligations

Calculation of the projected benefit obligations for our defined benefit pension and postretirement plans impacts the obligations on the balance sheet and the amount of benefit expense in the statement of operations. The actuarial calculation of projected benefit obligations and company contribution requirements involves judgment about uncertain future events, including estimated retirement dates, salary levels at retirement, mortality rates, lump-sum election rates, rates of return on plan assets, future interest rates, future health care cost-trend rates, and rates of utilization of health care services by retirees. We engage outside actuarial firms to assist in the calculation of these projected benefit obligations and company contribution requirements due to the specialized nature of these calculations. As financial accounting rules and the pension plan funding regulations promulgated by governmental agencies have different objectives and requirements, the actuarial methods and assumptions for the two purposes differ in certain important respects. Ultimately, we will be required to fund all promised benefits under pension and postretirement benefit plans not funded by plan assets or investment returns, but the judgmental assumptions used in the actuarial calculations significantly affect periodic financial statements and funding patterns over time. Benefit expense is particularly sensitive to the discount rate and return on plan assets assumptions. A one percentage-point decrease in the discount rate assumption used for the plan obligation would increase annual benefit expense by an estimated \$60 million, while a one percentage-point decrease in the return on plan assets assumption would increase annual benefit expense by an estimated \$40 million. In determining the discount rate, we use yields on high-quality fixed income investments with payments matched to the estimated distributions of benefits from our plans.

The expected weighted-average long-term rate of return for worldwide pension plan assets was approximately 6% for both 2021 and 2020, while the actual weighted-average rate of return was 10% in 2021 and 12% in 2020. For the past ten years, our actual weighted-average rate of return for worldwide pension plan assets was 10%.

GUARANTOR FINANCIAL INFORMATION

At December 31, 2021, Phillips 66 had \$10.3 billion of senior unsecured notes outstanding guaranteed by Phillips 66 Company, a direct, wholly owned operating subsidiary of Phillips 66. Phillips 66 conducts substantially all of its operations through subsidiaries, including Phillips 66 Company, and those subsidiaries generate substantially all of its operating income and cash flows. The guarantees (1) are unsecured obligations of Phillips 66 Company, (2) rank equally with all of Phillips 66 Company's other unsecured and unsubordinated indebtedness, and (3) are full and unconditional.

Summarized financial information of Phillips 66 and Phillips 66 Company (the Obligor Group) is presented on a combined basis. Intercompany transactions among the members of the Obligor Group have been eliminated. The financial information of non-guarantor subsidiaries has been excluded from the summarized financial information. Significant intercompany transactions and receivable/payable balances between the Obligor Group and non-guarantor subsidiaries are presented separately in the summarized financial information.

The summarized results of operations for the year ended December 31, 2021, and the summarized financial position at December 31, 2021, of the Obligor Group on a combined basis were:

Summarized Combined Statement of Operations

	Millions of Dollars
Sales and other operating revenues	\$ 86,935
Revenues and other income—non-guarantor subsidiaries	4,421
Purchased crude oil and products—third parties	52,921
Purchased crude oil and products—related parties	14,476
Purchased crude oil and products—non-guarantor subsidiaries	17,457
Impairments	1,290
Income before income taxes	397
Net income	428

Summarized Combined Balance Sheet

	Millions of Dollars
Accounts and notes receivable—third parties	\$ 3,772
Accounts and notes receivable—related parties	1,289
Due from non-guarantor subsidiaries, current	456
Total current assets	10,080
Investments and long-term receivables	10,324
Net properties, plants and equipment	11,541
Goodwill	1,047
Due from non-guarantor subsidiaries, noncurrent	5,699
Other assets associated with non-guarantor subsidiaries	2,565
Total noncurrent assets	32,935
Total assets	43,015
Due to non-guarantor subsidiaries, current	\$ 2,227
Total current liabilities	10,551
Long-term debt	9,364
Due to non-guarantor subsidiaries, noncurrent	9,341
Total noncurrent liabilities	24,094
Total liabilities	34,645
Total equity	8,370
Total liabilities and equity	43,015

NON-GAAP RECONCILIATIONS

Refining

Our realized refining margins measure the difference between (a) sales and other operating revenues derived from the sale of petroleum products manufactured at our refineries and (b) costs of feedstocks, primarily crude oil, used to produce the petroleum products. The realized refining margins are adjusted to include our proportional share of our joint venture refineries' realized margins, as well as to exclude those items that are not representative of the underlying operating performance of a period, which we call "special items." The realized refining margins are converted to a per-barrel basis by dividing them by total refinery processed inputs (primarily crude oil) measured on a barrel basis, including our share of inputs processed by our joint venture refineries. Our realized refining margin per barrel is intended to be comparable with industry refining margins, which are known as "crack spreads." As discussed in "Executive Overview and Business Environment—Business Environment," industry crack spreads measure the difference between market prices for refined petroleum products and crude oil. We believe realized refining margin per barrel calculated on a similar basis as industry crack spreads provides a useful measure of how well we performed relative to benchmark industry refining margins.

The GAAP performance measure most directly comparable to realized refining margin per barrel is the Refining segment's "income (loss) before income taxes per barrel." Realized refining margin per barrel excludes items that are typically included in a manufacturer's gross margin, such as depreciation and operating expenses, and other items used to determine income (loss) before income taxes, such as general and administrative expenses. It also includes our proportional share of joint venture refineries' realized refining margins and excludes special items. Because realized refining margin per barrel is calculated in this manner, and because realized refining margin per barrel may be defined differently by other companies in our industry, it has limitations as an analytical tool. Following are reconciliations of income (loss) before income taxes to realized refining margins:

Realized Refining Margins	Millions of Dollars, Except as Indicated				
	Atlantic Basin/Europe	Gulf Coast	Central Corridor	West Coast	Worldwide
Year Ended December 31, 2021					
Income (loss) before income taxes	\$ (36)	(1,889)	70	(694)	(2,549)
Plus:					
Taxes other than income taxes	69	73	51	49	242
Depreciation, amortization and impairments	210	1,665	139	240	2,254
Selling, general and administrative expenses	70	50	32	41	193
Operating expenses	981	1,309	647	1,220	4,157
Equity in losses of affiliates	9	11	164	—	184
Other segment (income) expense, net	9	(7)	(11)	4	(5)
Proportional share of refining gross margins contributed by equity affiliates	123	—	609	—	732
Special items:					
Certain tax impacts	(4)	—	—	—	(4)
Regulatory compliance costs	(20)	(28)	(27)	(13)	(88)
Realized refining margins	\$ 1,411	1,184	1,674	847	5,116
Total processed inputs (<i>thousands of barrels</i>)	188,697	240,859	95,595	112,994	638,145
Adjusted total processed inputs (<i>thousands of barrels</i>)*	188,697	240,859	173,230	112,994	715,780
Income (loss) before income taxes per barrel (<i>dollars per barrel</i>)**	\$ (0.19)	(7.84)	0.73	(6.14)	(3.99)
Realized refining margins (<i>dollars per barrel</i>)***	7.48	4.92	9.65	7.49	7.15
Year Ended December 31, 2020					
Loss before income taxes	\$ (1,224)	(2,077)	(641)	(2,213)	(6,155)
Plus:					
Taxes other than income taxes	61	107	51	89	308
Depreciation, amortization and impairments	643	968	571	1,460	3,642
Selling, general and administrative expenses	44	39	28	38	149
Operating expenses	774	1,354	498	1,000	3,626
Equity in losses of affiliates	10	3	363	—	376
Other segment (income) expense, net	1	1	(2)	5	5
Proportional share of refining gross margins contributed by equity affiliates	67	—	298	—	365
Special items:					
Certain tax impacts	(6)	—	—	—	(6)
Realized refining margins	\$ 370	395	1,166	379	2,310
Total processed inputs (<i>thousands of barrels</i>)	170,536	213,871	92,050	110,602	587,059
Adjusted total processed inputs (<i>thousands of barrels</i>)*	170,536	213,871	162,693	110,602	657,702
Loss before income taxes per barrel (<i>dollars per barrel</i>)**	\$ (7.18)	(9.71)	(6.96)	(20.01)	(10.48)
Realized refining margins (<i>dollars per barrel</i>)***	2.17	1.85	7.17	3.43	3.51

* Adjusted total processed inputs include our proportional share of processed inputs of an equity affiliate.

** Income (loss) before income taxes divided by total processed inputs.

*** Realized refining margins per barrel, as presented, are calculated using the underlying realized refining margin amounts, in dollars, divided by adjusted total processed inputs, in barrels. As such, recalculated per barrel amounts using the rounded margins and barrels presented may differ from the presented per barrel amounts.

Realized Refining Margins	Millions of Dollars, Except as Indicated				
	Atlantic Basin/Europe	Gulf Coast	Central Corridor	West Coast	Worldwide
Year Ended December 31, 2019					
Income (loss) before income taxes	\$ 608	364	1,338	(324)	1,986
<i>Plus:</i>					
Taxes other than income taxes	52	73	40	85	250
Depreciation, amortization and impairments	198	271	135	253	857
Selling, general and administrative expenses	39	23	22	31	115
Operating expenses	863	1,449	550	1,143	4,005
Equity in (earnings) losses of affiliates	11	2	(331)	—	(318)
Other segment (income) expense, net	(16)	(3)	—	5	(14)
Proportional share of refining gross margins contributed by equity affiliates	69	—	1,073	—	1,142
<i>Special items:</i>					
Pending claims and settlements	—	—	(21)	—	(21)
Realized refining margins	\$ 1,824	2,179	2,806	1,193	8,002
Total processed inputs (<i>thousands of barrels</i>)	195,506	293,666	103,294	130,014	722,480
Adjusted total processed inputs (<i>thousands of barrels</i>)*	195,506	293,666	188,045	130,014	807,231
Income (loss) before income taxes per barrel (<i>dollars per barrel</i>)**	\$ 3.11	1.24	12.95	(2.49)	2.75
Realized refining margins (<i>dollars per barrel</i>)***	9.33	7.42	14.91	9.18	9.91

* Adjusted total processed inputs include our proportional share of processed inputs of an equity affiliate.

** Income (loss) before income taxes divided by total processed inputs.

*** Realized refining margins per barrel, as presented, are calculated using the underlying realized refining margin amounts, in dollars, divided by adjusted total processed inputs, in barrels. As such, recalculated per barrel amounts using the rounded margins and barrels presented may differ from the presented per barrel amounts.

Marketing

Our realized marketing fuel margins measure the difference between (a) sales and other operating revenues derived from the sale of fuels in our M&S segment and (b) costs of those fuels. The realized marketing fuel margins are adjusted to exclude those items that are not representative of the underlying operating performance of a period, which we call “special items.” The realized marketing fuel margins are converted to a per-barrel basis by dividing them by sales volumes measured on a barrel basis. We believe realized marketing fuel margin per barrel demonstrates the value uplift our marketing operations provide by optimizing the placement and ultimate sale of our refineries’ fuel production.

Within the M&S segment, the GAAP performance measure most directly comparable to realized marketing fuel margin per barrel is the marketing business’ “income before income taxes per barrel.” Realized marketing fuel margin per barrel excludes items that are typically included in gross margin, such as depreciation and operating expenses, and other items used to determine income before income taxes, such as general and administrative expenses. Because realized marketing fuel margin per barrel excludes these items, and because realized marketing fuel margin per barrel may be defined differently by other companies in our industry, it has limitations as an analytical tool. Following are reconciliations of income before income taxes to realized marketing fuel margins:

	Millions of Dollars, Except as Indicated					
	U.S.			International		
	2021	2020	2019	2021	2020	2019
Realized Marketing Fuel Margins						
Income before income taxes	\$ 1,180	870	916	403	454	380
Plus:						
Taxes other than income taxes	9	1	5	6	5	6
Depreciation, amortization and impairment	14	12	10	76	70	65
Selling, general and administrative expenses	758	623	743	253	246	249
Equity in earnings of affiliates	(48)	(31)	(27)	(113)	(108)	(99)
Other operating (revenues) expenses*	(424)	(327)	(379)	8	(27)	(37)
Other segment expense, net	—	—	—	1	1	1
Special items:						
Certain tax impacts	—	—	(90)	—	—	—
Marketing margins	1,489	1,148	1,178	634	641	565
Less: margin for nonfuel related sales	—	—	—	53	46	44
Realized marketing fuel margins	\$ 1,489	1,148	1,178	581	595	521
Total fuel sales volumes (<i>thousands of barrels</i>)	680,102	613,869	752,064	97,529	93,773	106,263
Income before income taxes per barrel (<i>dollars per barrel</i>)	\$ 1.74	1.42	1.22	4.13	4.84	3.58
Realized marketing fuel margins (<i>dollars per barrel</i>)**	2.19	1.87	1.57	5.96	6.34	4.90

* Includes other nonfuel revenues and expenses.

** Realized marketing fuel margins per barrel, as presented, are calculated using the underlying realized marketing fuel margin amounts, in dollars, divided by sales volumes, in barrels. As such, recalculated per barrel amounts using the rounded margins and barrels presented may differ from the presented per barrel amounts.

Item 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Financial Instrument Market Risk

We and certain of our subsidiaries are exposed to market risks produced by changes in the prices of crude oil, refined petroleum product, NGL, natural gas, renewable feedstock and electric power, as well as fluctuations in interest rates and foreign currency exchange rates. We and certain of our subsidiaries may hold and use derivative contracts to manage these risks.

Commodity Price Risk

Generally, our policy is to remain exposed to the market prices of commodities. Consistent with this policy, we use derivative contracts to convert our exposure from fixed-price sales or purchase contracts, often specified in contracts with refined petroleum product customers, back to floating market prices. We also use futures, forwards, swaps and options in various markets to accomplish the following objectives:

- Balance physical systems or meet our refinery requirements and market demand. In addition to cash settlement prior to contract expiration, certain exchange-traded futures may be settled by physical delivery of the underlying commodity.
- Enable us to use the market knowledge gained from our physical commodity market activities to capture market opportunities, such as moving physical commodities to more profitable locations, storing commodities to capture seasonal or time premiums, and blending commodities to capture quality upgrades. Derivatives may be utilized to optimize these activities.
- Manage the risk to our cash flows from price exposures on specific crude oil, refined petroleum product, NGL, renewable feedstock and natural gas transactions.

These objectives optimize the value of our supply chain and may reduce our exposure to fluctuations in market prices.

Our use of derivative instruments is governed by an “Authority Limitations” document approved by our Board of Directors. This document prohibits the use of highly leveraged derivatives or derivative instruments without sufficient market liquidity for comparable valuations, and establishes Value at Risk (VaR) limits. Compliance with these limits is monitored daily by our global risk group.

We use a VaR model to estimate the loss in fair value that could potentially result on a single day from the effect of adverse changes in market conditions on the derivative commodity instruments held or issued. Using Monte Carlo simulation, a 95% confidence level and a one-day holding period, the VaR for derivative commodity instruments issued or held at December 31, 2021 and 2020, was immaterial to our cash flows and results of operations.

Interest Rate Risk

Our use of fixed- or variable-rate debt directly exposes us to interest rate risk. Fixed-rate debt, such as our senior notes, exposes us to changes in the fair value of our debt due to changes in market interest rates. Fixed-rate debt also exposes us to the risk that we may need to refinance maturing debt with new debt at higher rates, or that we may be obligated to pay rates higher than the current market. Variable-rate debt, such as our floating-rate notes or borrowings under our revolving credit facility, exposes us to short-term changes in market rates that impact our interest expense. The following tables provide information about our debt instruments that are sensitive to changes in U.S. interest rates. These tables present principal cash flows and related weighted-average interest rates by expected maturity dates. Weighted-average variable rates are based on effective rates at each reporting date. The carrying amount of our floating-rate debt approximates its fair value. The fair value of the fixed-rate financial instruments is estimated based on observable market prices.

Expected Maturity Date	Millions of Dollars, Except as Indicated			
	Fixed Rate Maturity	Average Interest Rate	Floating Rate Maturity	Average Interest Rate
Year-End 2021				
2022	\$ 1,000	4.30 %	\$ 450	0.98 %
2023	500	3.70	—	—
2024	1,100	1.32	—	—
2025	1,150	3.74	—	—
2026	1,000	2.43	—	—
Remaining years	9,026	4.31	25	0.70
Total	\$ 13,776		\$ 475	
Fair value	\$ 15,353		\$ 475	

Expected Maturity Date	Millions of Dollars, Except as Indicated			
	Fixed Rate Maturity	Average Interest Rate	Floating Rate Maturity	Average Interest Rate
Year-End 2020				
2021	\$ —	— %	\$ 965	1.05 %
2022	2,000	4.30	—	—
2023	500	3.70	500	1.40
2024	1,100	1.32	450	0.84
2025	1,150	3.74	—	—
Remaining years	9,026	4.22	25	0.76
Total	\$ 13,776		\$ 1,940	
Fair value	\$ 15,597		\$ 1,940	

Foreign Currency Risk

We are exposed to foreign currency exchange rate fluctuations related to our international operations. Generally, we do not enter into any derivative contracts to hedge our foreign currency risk.

Our Chief Executive Officer and Chief Financial Officer monitor risks resulting from commodity prices, interest rates and foreign currency exchange rates.

For additional information about our use of derivative instruments, see Note 15—Derivatives and Financial Instruments, in the Notes to Consolidated Financial Statements.

CAUTIONARY STATEMENT FOR THE PURPOSES OF THE “SAFE HARBOR” PROVISIONS OF THE PRIVATE SECURITIES LITIGATION REFORM ACT OF 1995

This report includes forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. You can normally identify our forward-looking statements by the words “anticipate,” “estimate,” “believe,” “budget,” “continue,” “could,” “intend,” “may,” “plan,” “potential,” “predict,” “seek,” “should,” “will,” “would,” “expect,” “objective,” “projection,” “forecast,” “goal,” “guidance,” “outlook,” “effort,” “target” and similar expressions, but the absence of such words does not mean a statement is not forward-looking.

We based the forward-looking statements on our current expectations, estimates and projections about us, our operations, our joint ventures and entities in which we have equity interests, as well as the industries in which we and they operate in general. We caution you these statements are not guarantees of future performance as they involve assumptions that, while made in good faith, may prove to be incorrect, and involve risks and uncertainties we cannot predict. In addition, we based many of these forward-looking statements on assumptions about future events that may prove to be inaccurate. Accordingly, our actual outcomes and results may differ materially from what we have expressed or forecast in the forward-looking statements. Any differences could result from a variety of factors, including the following:

- The continuing effects of the COVID-19 pandemic and its negative impact on commercial activity and demand for refined petroleum products, as well as the extent and duration of recovery of economies and demand for our products after the pandemic subsides.
- Fluctuations in NGL, crude oil, refined petroleum product and natural gas prices and refining, marketing and petrochemical margins.
- Changes in governmental policies relating to NGL, crude oil, natural gas or refined petroleum products pricing, regulation or taxation, including exports.
- Actions taken by OPEC and other countries impacting supply and demand and correspondingly, commodity prices.
- Unexpected changes in costs or technical requirements for constructing, modifying or operating our facilities or transporting our products.
- Unexpected technological or commercial difficulties in manufacturing, refining or transporting our products, including chemical products.
- Lack of, or disruptions in, adequate and reliable transportation for our NGL, crude oil, natural gas and refined petroleum products.
- The level and success of drilling and quality of production volumes around our Midstream assets.
- The inability to timely obtain or maintain permits, including those necessary for capital projects.
- The inability to comply with government regulations or make capital expenditures required to maintain compliance.
- Changes to worldwide government policies relating to renewable fuels and greenhouse gas emissions that adversely affect programs like the renewable fuel standards program, low carbon fuel standards and tax credits for biofuels.
- Failure to complete definitive agreements and feasibility studies for, and to complete construction of, announced and future capital projects on time and within budget.
- Potential disruption or interruption of our operations due to accidents, weather events, civil unrest, insurrections, political events, terrorism or cyberattacks.
- Potential disruption or damage to our facilities as a result of significant storms or other destructive climate events.
- The inability to meet our sustainability goals, including reducing our emissions intensity, developing and protecting new technologies, and commercializing lower-carbon opportunities.

- General domestic and international economic and political developments including armed hostilities, expropriation of assets, and other political, economic or diplomatic developments, including those caused by public health issues, outbreaks of diseases and pandemics.
- Failure of new products and services to achieve market acceptance.
- International monetary conditions and exchange controls.
- Substantial investments required, or reduced demand for products, as a result of existing or future environmental rules and regulations, including reduced consumer demand for refined petroleum products.
- Liability resulting from litigation or for remedial actions, including removal and reclamation obligations under environmental regulations.
- Changes in tax, environmental and other laws and regulations (including alternative energy mandates) applicable to our business.
- Political and societal concerns about climate change that could result in changes to our business or increase expenditures, including litigation-related expenses.
- Changes in estimates or projections used to assess fair value of intangible assets, goodwill and property and equipment and/or strategic decisions or other developments with respect to our asset portfolio that cause impairment charges.
- The timing and completion of the agreement to acquire all of the limited partner interests in Phillips 66 Partners not already owned by us, as well as any lawsuits that may be brought as a result of the acquisition.
- Limited access to capital or significantly higher cost of capital related to changes to our credit profile or illiquidity or uncertainty in the domestic or international financial markets.
- The operation, financing and distribution decisions of our joint ventures that we do not control.
- The factors generally described in “Item 1A. Risk Factors” in this report.

Item 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

PHILLIPS 66

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Report of Management

Management prepared, and is responsible for, the consolidated financial statements and the other information appearing in this Annual Report. The consolidated financial statements present fairly the company's financial position, results of operations and cash flows in conformity with generally accepted accounting principles in the United States. In preparing its consolidated financial statements, the company includes amounts that are based on estimates and judgments management believes are reasonable under the circumstances. The company's financial statements have been audited by Ernst & Young LLP, an independent registered public accounting firm appointed by the Audit and Finance Committee of the Board of Directors. Management has made available to Ernst & Young LLP all of the company's financial records and related data, as well as the minutes of stockholders' and directors' meetings.

Assessment of Internal Control Over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting. Phillips 66's internal control system was designed to provide reasonable assurance to the company's management and directors regarding the preparation and fair presentation of published financial statements.

All internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation.

Management assessed the effectiveness of the company's internal control over financial reporting as of December 31, 2021. In making this assessment, it used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in *Internal Control—Integrated Framework* (2013). Based on this assessment, management concluded the company's internal control over financial reporting was effective as of December 31, 2021.

Ernst & Young LLP has issued an audit report on the company's internal control over financial reporting as of December 31, 2021, and their report is included herein.

/s/ Greg C. Garland

Greg C. Garland
Chairman of the Board of Directors and
Chief Executive Officer

/s/ Kevin J. Mitchell

Kevin J. Mitchell
Executive Vice President, Finance and
Chief Financial Officer

Date: February 18, 2022

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Phillips 66

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Phillips 66 (the Company) as of December 31, 2021 and 2020, the related consolidated statements of operations, comprehensive income (loss), changes in equity, and cash flows, for each of the three years in the period ended December 31, 2021, and the related notes (collectively referred to as the financial statements). In our opinion, the financial statements present fairly, in all material respects, the consolidated financial position of the Company as of December 31, 2021 and 2020, and the consolidated results of its operations and its cash flows for each of the three years in the 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* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 18, 2022 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's 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 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 financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the 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 financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit and finance committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of the critical audit matter 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 matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

<i>Description of the Matter</i>	<i>Assessment of Equity Method Investment Impairment</i> As discussed in Note 6 to the consolidated financial statements, the Company has investments in nonconsolidated entities accounted for using the equity method, totaling \$12.8 billion as of December 31, 2021. The carrying value of each equity method investment is evaluated for impairment when indicators of a loss in value below the carrying value exist, including a lack of sustained earnings or a deterioration of market conditions, among others. Auditing the Company's impairment assessments of whether an impairment indicator for its equity method investments exists was complex and judgmental due to the estimation required in determining whether an investment had an indicator of impairment.
<i>How We Addressed the Matter in Our Audit</i>	We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's equity method impairment review process, including controls over the identification of factors that may indicate an equity method investment is impaired. In order to test whether an impairment was indicated, we tested the Company's qualitative evaluation of the presence, or lack of, impairment indicators for its equity method investments. This included, but was not limited to, an evaluation of the investments' earnings history and sustainability under current and expected market conditions. We exercised professional judgment based on our knowledge of the industry and the investee's business to assess the appropriateness of the management's qualitative evaluation. For example, we performed inquiries of management, considered historical operating results of the investments being analyzed, their projected recovery periods, and current and expected market conditions affecting their results. We performed an independent assessment using both internally and externally available information, such as public share prices (where available), throughputs, refining margins as well as future price and demand forecasts. In addition to that, we evaluated management's ability to accurately forecast future operating income by comparing actual results to management's historical forecasts.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2011.

Houston, Texas
February 18, 2022

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Phillips 66

Opinion on Internal Control over Financial Reporting

We have audited Phillips 66's internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Phillips 66 (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021, based on the COSO criteria.

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 (loss), changes in equity and cash flows for each of the three years in the period ended December 31, 2021, and the related notes and our report dated February 18, 2022, expressed an unqualified opinion thereon.

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 under the heading "Assessment of Internal Control Over Financial Reporting" in the accompanying "Report of Management." 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 included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and 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/ Ernst & Young LLP

Houston, Texas
February 18, 2022

Consolidated Statement of Operations

Phillips 66

Years Ended December 31	Millions of Dollars		
	2021	2020	2019
Revenues and Other Income			
Sales and other operating revenues	\$ 111,476	64,129	107,293
Equity in earnings of affiliates	2,904	1,191	2,127
Net gain on dispositions	18	108	20
Other income	454	66	119
Total Revenues and Other Income	114,852	65,494	109,559
Costs and Expenses			
Purchased crude oil and products	102,102	57,707	95,529
Operating expenses	5,147	4,563	5,074
Selling, general and administrative expenses	1,744	1,544	1,681
Depreciation and amortization	1,605	1,395	1,341
Impairments	1,498	4,252	861
Taxes other than income taxes	410	464	409
Accretion on discounted liabilities	24	22	23
Interest and debt expense	581	499	458
Foreign currency transaction losses	1	12	5
Total Costs and Expenses	113,112	70,458	105,381
Income (loss) before income taxes	1,740	(4,964)	4,178
Income tax expense (benefit)	146	(1,250)	801
Net Income (Loss)	1,594	(3,714)	3,377
Less: net income attributable to noncontrolling interests	277	261	301
Net Income (Loss) Attributable to Phillips 66	\$ 1,317	(3,975)	3,076
Net Income (Loss) Attributable to Phillips 66 Per Share of Common Stock (dollars)			
Basic	\$ 2.97	(9.06)	6.80
Diluted	2.97	(9.06)	6.77
Weighted-Average Common Shares Outstanding (thousands)			
Basic	440,028	439,530	451,364
Diluted	440,364	439,530	453,888

See Notes to Consolidated Financial Statements.

Consolidated Statement of Comprehensive Income (Loss)

Phillips 66

Years Ended December 31	Millions of Dollars		
	2021	2020	2019
Net Income (Loss)	\$ 1,594	(3,714)	3,377
Other comprehensive income (loss)			
Defined benefit plans			
Net actuarial gain (loss) arising during the period	320	(261)	(156)
Prior service credit arising during the period	—	—	2
Amortization of net actuarial loss, prior service credit and settlements	122	144	63
Plans sponsored by equity affiliates	96	(77)	(21)
Income taxes on defined benefit plans	(127)	41	21
Defined benefit plans, net of income taxes	411	(153)	(91)
Foreign currency translation adjustments	(74)	156	94
Income taxes on foreign currency translation adjustments	4	(5)	1
Foreign currency translation adjustments, net of income taxes	(70)	151	95
Cash flow hedges	3	(5)	(15)
Income taxes on hedging activities	—	1	4
Hedging activities, net of income taxes	3	(4)	(11)
Other Comprehensive Income (Loss), Net of Income Taxes	344	(6)	(7)
Comprehensive Income (Loss)	1,938	(3,720)	3,370
Less: comprehensive income attributable to noncontrolling interests	277	261	301
Comprehensive Income (Loss) Attributable to Phillips 66	\$ 1,661	(3,981)	3,069

See Notes to Consolidated Financial Statements.

Consolidated Balance Sheet

Phillips 66

At December 31	Millions of Dollars	
	2021	2020
Assets		
Cash and cash equivalents	\$ 3,147	2,514
Accounts and notes receivable (net of allowances of \$44 million in 2021 and \$37 million in 2020)	6,138	5,688
Accounts and notes receivable—related parties	1,332	834
Inventories	3,394	3,893
Prepaid expenses and other current assets	686	347
Total Current Assets	14,697	13,276
Investments and long-term receivables	14,471	13,624
Net properties, plants and equipment	22,435	23,716
Goodwill	1,484	1,425
Intangibles	813	843
Other assets	1,694	1,837
Total Assets	\$ 55,594	54,721
Liabilities		
Accounts payable	\$ 7,629	5,171
Accounts payable—related parties	832	378
Short-term debt	1,489	987
Accrued income and other taxes	1,254	1,351
Employee benefit obligations	638	573
Other accruals	959	1,058
Total Current Liabilities	12,801	9,518
Long-term debt	12,959	14,906
Asset retirement obligations and accrued environmental costs	727	657
Deferred income taxes	5,475	5,644
Employee benefit obligations	1,055	1,341
Other liabilities and deferred credits	940	1,132
Total Liabilities	33,957	33,198
Equity		
Common stock (2,500,000,000 shares authorized at \$0.01 par value)		
Issued (2021—650,026,318 shares; 2020—648,643,223 shares)		
Par value	7	6
Capital in excess of par	20,504	20,383
Treasury stock (at cost: 2021 and 2020—211,771,827 shares)	(17,116)	(17,116)
Retained earnings	16,216	16,500
Accumulated other comprehensive loss	(445)	(789)
Total Stockholders' Equity	19,166	18,984
Noncontrolling interests	2,471	2,539
Total Equity	21,637	21,523
Total Liabilities and Equity	\$ 55,594	54,721

See Notes to Consolidated Financial Statements.

Consolidated Statement of Cash Flows

Phillips 66

Years Ended December 31	Millions of Dollars		
	2021	2020	2019
Cash Flows From Operating Activities			
Net income (loss)	\$ 1,594	(3,714)	3,377
Adjustments to reconcile net income (loss) to net cash provided by operating activities			
Depreciation and amortization	1,605	1,395	1,341
Impairments	1,498	4,252	861
Accretion on discounted liabilities	24	22	23
Deferred income taxes	(272)	126	183
Undistributed equity earnings	(128)	334	(143)
Net gain on dispositions	(7)	(108)	(20)
Unrealized investment gain	(365)	—	—
Other	(51)	130	16
Working capital adjustments			
Accounts and notes receivable	(922)	2,023	(2,308)
Inventories	511	(71)	(204)
Prepaid expenses and other current assets	(339)	92	(14)
Accounts payable	2,925	(2,887)	1,941
Taxes and other accruals	(56)	517	(245)
Net Cash Provided by Operating Activities	6,017	2,111	4,808
Cash Flows From Investing Activities			
Capital expenditures and investments	(1,860)	(2,920)	(3,873)
Return of investments in equity affiliates	267	192	71
Proceeds from asset dispositions	27	51	86
Advances/loans—related parties	(310)	(316)	(98)
Collection of advances/loans—related parties	2	44	95
Other	2	(130)	31
Net Cash Used in Investing Activities	(1,872)	(3,079)	(3,688)
Cash Flows From Financing Activities			
Issuance of debt	1,443	5,178	1,783
Repayment of debt	(2,954)	(1,051)	(1,307)
Issuance of common stock	26	8	32
Repurchase of common stock	—	(443)	(1,650)
Dividends paid on common stock	(1,585)	(1,575)	(1,570)
Distributions to noncontrolling interests	(324)	(289)	(241)
Repurchase of noncontrolling interests	(24)	—	—
Net proceeds from issuance of Phillips 66 Partners LP common and preferred units	—	2	173
Other	(52)	(39)	269
Net Cash Provided by (Used in) Financing Activities	(3,470)	1,791	(2,511)
Effect of Exchange Rate Changes on Cash and Cash Equivalents	(42)	77	(14)
Net Change in Cash and Cash Equivalents	633	900	(1,405)
Cash and cash equivalents at beginning of year	2,514	1,614	3,019
Cash and Cash Equivalents at End of Year	\$ 3,147	2,514	1,614

See Notes to Consolidated Financial Statements.

Consolidated Statement of Changes in Equity

Phillips 66

	Millions of Dollars						
	Attributable to Phillips 66						
	Common Stock						
	Par Value	Capital in Excess of Par	Treasury Stock	Retained Earnings	Accum. Other Comprehensive Loss	Noncontrolling Interests	Total
December 31, 2018	\$ 6	19,873	(15,023)	20,489	(692)	2,500	27,153
Cumulative effect of accounting changes	—	—	—	81	(89)	(1)	(9)
Net income	—	—	—	3,076	—	301	3,377
Other comprehensive loss	—	—	—	—	(7)	—	(7)
Dividends paid on common stock	—	—	—	(1,570)	—	—	(1,570)
Repurchase of common stock	—	—	(1,650)	—	—	—	(1,650)
Benefit plan activity	—	85	—	(12)	—	—	73
Issuance of Phillips 66 Partners LP common units	—	68	—	—	—	73	141
Impacts from Phillips 66 Partners LP GP/IDR restructuring transaction	—	275	—	—	—	(373)	(98)
Distributions to noncontrolling interests	—	—	—	—	—	(241)	(241)
December 31, 2019	6	20,301	(16,673)	22,064	(788)	2,259	27,169
Net income (loss)	—	—	—	(3,975)	—	261	(3,714)
Other comprehensive loss	—	—	—	—	(6)	—	(6)
Dividends paid on common stock	—	—	—	(1,575)	—	—	(1,575)
Repurchase of common stock	—	—	(443)	—	—	—	(443)
Benefit plan activity	—	80	—	(12)	—	—	68
Transfer of equity interest	—	2	—	—	—	305	307
Net distributions to noncontrolling interests	—	—	—	—	—	(285)	(285)
Other	—	—	—	(2)	5	(1)	2
December 31, 2020	6	20,383	(17,116)	16,500	(789)	2,539	21,523
Net income	—	—	—	1,317	—	277	1,594
Other comprehensive income	—	—	—	—	344	—	344
Dividends paid on common stock	—	—	—	(1,585)	—	—	(1,585)
Benefit plan activity	1	121	—	(14)	—	—	108
Distributions to noncontrolling interests	—	—	—	—	—	(324)	(324)
Repurchase of noncontrolling interests	—	—	—	(2)	—	(21)	(23)
December 31, 2021	\$ 7	20,504	(17,116)	16,216	(445)	2,471	21,637

	Shares	
	Common Stock Issued	Treasury Stock
December 31, 2018	645,691,761	189,526,331
Repurchase of common stock	—	16,864,475
Shares issued—share-based compensation	1,724,872	—
December 31, 2019	647,416,633	206,390,806
Repurchase of common stock	—	5,381,021
Shares issued—share-based compensation	1,226,590	—
December 31, 2020	648,643,223	211,771,827
Repurchase of common stock	—	—
Shares issued—share-based compensation	1,383,095	—
December 31, 2021	650,026,318	211,771,827

Years Ended December 31	Dollars	
	Dividends Paid Per Share of Common Stock	
2019	\$	3.50
2020		3.60
2021		3.62

See Notes to Consolidated Financial Statements.

Note 1—Summary of Significant Accounting Policies

Consolidation Principles and Investments

Our consolidated financial statements include the accounts of majority-owned, controlled subsidiaries and variable interest entities (VIEs) where we are the primary beneficiary. Undivided interests in pipelines, natural gas plants and terminals are consolidated on a proportionate basis. See Note 27—Phillips 66 Partners LP, for further discussion on our significant consolidated VIE.

The equity method is used to account for investments in affiliates in which we have the ability to exert significant influence over the affiliates' operating and financial policies, including VIEs, of which we are not the primary beneficiary. Other securities and investments are generally carried at fair value, or cost less impairments, if any, adjusted up or down for price changes in similar financial instruments issued by the investee, when and if observed. See Note 6—Investments, Loans and Long-Term Receivables, for further discussion on our significant unconsolidated VIEs.

Use of Estimates

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

Foreign Currency

Adjustments resulting from the process of translating financial statements with foreign functional currencies into U.S. dollars are included in accumulated other comprehensive income (loss) in stockholders' equity. Foreign currency transaction gains and losses result from remeasuring monetary assets and liabilities denominated in a foreign currency into the functional currency of our subsidiary holding the asset or liability. We include these transaction gains and losses in current earnings (loss). Most of our foreign operations use their local currency as the functional currency.

Cash Equivalents

Cash equivalents are highly liquid, short-term investments that are readily convertible to known amounts of cash and will mature within 90 days or less from the date of acquisition. We carry these investments at cost plus accrued interest.

Inventories

We have several valuation methods for our various types of inventories and consistently use the following methods for each type of inventory. Crude oil and refined petroleum products inventories are valued at the lower of cost or market in the aggregate, primarily on the last-in, first-out (LIFO) basis. Any necessary lower-of-cost-or-market write-downs at year end are recorded as permanent adjustments to the LIFO cost basis. LIFO is used to better match current inventory costs with current revenues and to meet tax-conformity requirements. Costs include both direct and indirect expenditures incurred in bringing an item or product to its existing condition and location. Materials and supplies inventories are valued using the weighted-average-cost method.

Fair Value Measurements

We categorize assets and liabilities measured at fair value into one of three different levels depending on the observability of the inputs employed in the measurement. Level 1 inputs are quoted prices in active markets for identical assets or liabilities. Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly, through market-corroborated inputs. Level 3 inputs are unobservable inputs for the asset or liability that are used to measure fair value to the extent that relevant observable inputs are not available, and that reflect the assumptions we believe market participants would use when pricing an asset or liability for which there is little, if any, market activity at the measurement date.

Derivative Instruments

Derivative instruments are recorded on the balance sheet at fair value. We have master netting agreements with our exchange-cleared instrument counterparties and certain of our counterparties to other commodity instrument contracts (e.g., physical commodity forward contracts). We have elected to net derivative assets and liabilities with the same counterparty on the balance sheet if the legal right of offset exists and certain other criteria are met. We also net collateral payables and receivables against derivative assets and derivative liabilities, respectively.

Recognition and classification of the gain or loss that results from recording and adjusting a derivative to fair value depends on the purpose for issuing or holding the derivative. All realized and unrealized gains and losses from derivative instruments for which we do not apply hedge accounting are immediately recognized in our consolidated statement of operations. Unrealized gains or losses from derivative instruments that qualify for and are designated as cash flow hedges are recognized in other comprehensive income (loss) and appear on the balance sheet in accumulated other comprehensive income (loss) until the hedged transactions are recognized in earnings. However, to the extent the change in the fair value of a derivative instrument exceeds the change in the anticipated cash flows of the hedged transaction, the excess gain or loss is recognized immediately in earnings.

Loans and Long-Term Receivables

We enter into agreements with other parties to pursue business opportunities, which may require us to provide loans or advances to certain affiliated and nonaffiliated companies. Loans are recorded when cash is transferred or seller financing is provided to the affiliated or nonaffiliated company pursuant to a loan agreement. The loan balance will increase as interest is earned on the outstanding loan balance and will decrease as interest and principal payments are received. Interest is earned at the loan agreement's stated interest rate. Loans and long-term receivables are evaluated for impairment based on an expected credit loss assessment.

Impairment of Investments in Nonconsolidated Entities

Investments in nonconsolidated entities accounted for under the equity method are assessed for impairment whenever changes in the facts and circumstances indicate a loss in value has occurred. When indicators exist, the fair value is estimated and compared to the investment carrying value. If any impairment is judgmentally determined to be other than temporary, the carrying value of the investment is written down to fair value. The fair value of the impaired investment is determined based on quoted market prices, if available, or upon the present value of expected future cash flows using discount rates and other assumptions believed to be consistent with those used by principal market participants and observed market earnings multiples of comparable companies.

Depreciation and Amortization

Depreciation and amortization of properties, plants and equipment (PP&E) are determined by either the individual-unit-straight-line method or the group-straight-line method (for those individual units that are highly integrated with other units).

Capitalized Interest

A portion of interest from external borrowings is capitalized on major projects with an expected construction period of one year or longer. Capitalized interest is added to the cost of the related asset, and is amortized over the useful life of the related asset.

Impairment of Properties, Plants and Equipment

PP&E used in operations are assessed for impairment whenever changes in facts and circumstances indicate a possible significant deterioration in the future cash flows expected to be generated by an asset group. If indicators of potential impairment exist, an undiscounted cash flow test is performed. If the sum of the undiscounted expected future before-tax cash flows of an asset group is less than the carrying value of the asset group, including applicable liabilities, the carrying value of the PP&E included in the asset group is written down to estimated fair value and the write down is reported in the “Impairments” line item on our consolidated statement of operations in the period in which the impairment determination is made. Individual assets are grouped for impairment purposes at the lowest level for which identifiable cash flows are available. Because there is usually a lack of quoted market prices for long-lived assets, the fair value of impaired assets is typically determined using one or more of the following methods: the present values of expected future cash flows using discount rates and other assumptions believed to be consistent with those used by principal market participants; a market multiple of earnings for similar assets; historical market transactions including similar assets, adjusted using principal market participant assumptions when necessary; or replacement cost adjusted for physical deterioration and economic obsolescence. Long-lived assets held for sale are accounted for at the lower of amortized cost or fair value, less cost to sell, with fair value determined using a binding negotiated price, if available, estimated replacement cost, or present value of expected future cash flows as previously described.

The expected future cash flows used for impairment reviews and related fair value calculations are based on estimated future volumes, prices, costs, margins and capital project decisions, considering all available evidence at the date of review.

Property Dispositions

When complete units of depreciable property are sold, the asset cost and related accumulated depreciation are eliminated, with any gain or loss reflected in the “Net gain on dispositions” line item on our consolidated statement of operations. When less than complete units of depreciable property are disposed of or retired, the difference between asset cost and salvage value is charged or credited to accumulated depreciation.

Goodwill

Goodwill represents the excess of the purchase price over the estimated fair value of the net assets acquired in a business combination. Goodwill is not amortized, but is assessed for impairment annually and when events or changes in circumstance indicate that the fair value of a reporting unit with goodwill is below its carrying value. The impairment assessment requires allocating goodwill and other assets and liabilities to reporting units. The fair value of each reporting unit is determined and compared to the book value of the reporting unit. If the fair value of the reporting unit is less than the book value, an impairment is recognized for the amount by which the book value exceeds the reporting unit’s fair value. A goodwill impairment cannot exceed the total amount of goodwill allocated to that reporting unit. For purposes of assessing goodwill for impairment, we have two reporting units with goodwill balances at the 2021 testing date: Transportation and Marketing and Specialties (M&S).

Intangible Assets Other Than Goodwill

Intangible assets with finite useful lives are amortized using the straight-line method over their useful lives. Intangible assets with indefinite useful lives are not amortized, but are tested at least annually for impairment. Each reporting period, we evaluate intangible assets with indefinite useful lives to determine whether events and circumstances continue to support this classification. Indefinite-lived intangible assets are considered impaired if their fair value is lower than their net book value. The fair value of intangible assets is determined based on quoted market prices in active markets, if available. If quoted market prices are not available, the fair value of intangible assets is determined based upon the present values of expected future cash flows using discount rates and other assumptions believed to be consistent with those used by principal market participants, or upon estimated replacement cost, if expected future cash flows from the intangible asset are not determinable.

Asset Retirement Obligations

When we have a legal obligation to incur costs to retire an asset, we record a liability in the period in which the obligation was incurred provided that a reasonable estimate of fair value can be made. If a reasonable estimate of fair value cannot be made at the time the obligation arises, we record the liability when sufficient information is available to estimate its fair value. When a liability is initially recorded, we capitalize the costs by increasing the carrying amount of the related PP&E. Over time, the liability is increased for changes in present value, and the capitalized costs in PP&E are depreciated over the useful life of the related assets. If our estimate of the liability changes after initial recognition, we record an adjustment to the liability and PP&E.

Our practice is to keep our refining and other processing assets in good operating condition through routine repair and maintenance of component parts in the ordinary course of business and by continuing to make improvements based on technological advances. As a result, we believe that generally these assets have no expected retirement dates for purposes of estimating asset retirement obligations since the dates or ranges of dates upon which we would retire these assets cannot be reasonably estimated at this time. We will recognize liabilities for these obligations in the period when sufficient information becomes available to estimate a date or range of potential retirement dates.

Environmental Costs

Environmental expenditures are expensed or capitalized, depending upon their future economic benefit. Expenditures relating to an existing condition caused by past operations, and those having no future economic benefit, are expensed. When environmental assessments or cleanups are probable and the costs can be reasonably estimated, environmental expenditures are accrued on an undiscounted basis (unless acquired in a business combination). Recoveries of environmental remediation costs from other parties, such as state reimbursement funds, are recorded as a reduction to environmental expenditures.

Guarantees

The fair value of a guarantee is determined and recorded as a liability at the time the guarantee is given. The initial liability is subsequently reduced as we are released from exposure under the guarantee. We amortize the guarantee liability over the relevant time period, if one exists, based on the facts and circumstances surrounding each type of guarantee. We amortize the guarantee liability to the related statement of operations line item based on the nature of the guarantee. In cases where the guarantee term is indefinite, we reverse the liability when we have information to support the reversal. When the performance on the guarantee becomes probable and the liability can be reasonably estimated, we accrue a separate liability for the excess amount above the guarantee's book value based on the facts and circumstances at that time. We reverse the fair value liability only when there is no further exposure under the guarantee.

Treasury Stock

We record treasury stock purchases at cost, which includes incremental direct transaction costs. Amounts are recorded as reductions of stockholders' equity on the consolidated balance sheet.

Revenue Recognition

Our revenues are primarily associated with sales of refined petroleum products, crude oil and natural gas liquids (NGL). Each gallon, or other unit of measure of product, is separately identifiable and represents a distinct performance obligation to which a transaction price is allocated. The transaction prices of our contracts with customers are either fixed or variable, with variable pricing based upon various market indices. For our contracts that include variable consideration, we utilize the variable consideration allocation exception, whereby the variable consideration is only allocated to the performance obligations that are satisfied during the period. The related revenue is recognized at a point in time when control passes to the customer, which is when title and the risk of ownership passes to the customer and physical delivery of goods occurs, either immediately or within a fixed delivery schedule that is reasonable and customary in the industry. The payment terms with our customers vary based on the product or service provided, but usually are 30 days or less.

Revenues associated with pipeline transportation services are recognized at a point in time when the volumes are delivered based on contractual rates. Revenues associated with terminaling and storage services are recognized over time as the services are performed based on throughput volume or capacity utilization at contractual rates.

Revenues associated with transactions commonly called buy/sell contracts, in which the purchase and sale of inventory with the same counterparty are entered into in contemplation of one another, are combined and reported in the “Purchased crude oil and products” line item on our consolidated statement of operations (i.e., these transactions are recorded net).

Taxes Collected from Customers and Remitted to Governmental Authorities

Excise taxes on sales of refined petroleum products charged to our customers are presented net of taxes on sales of refined petroleum products payable to governmental authorities in the “Taxes other than income taxes” line item on our consolidated statement of operations. Other sales and value-added taxes are recorded net in the “Taxes other than income taxes” line item on our consolidated statement of operations.

Shipping and Handling Costs

We have elected to account for shipping and handling costs as fulfillment activities and include these activities in the “Purchased crude oil and products” line item on our consolidated statement of operations. Freight costs billed to customers are recorded in “Sales and other operating revenues.”

Maintenance and Repairs

Costs of maintenance and repairs, which are not significant improvements, are expensed when incurred. Major refinery maintenance turnarounds are expensed as incurred.

Share-Based Compensation

We recognize share-based compensation expense over the shorter of: (1) the service period (i.e., the stated period of time required to earn the award); or (2) the period beginning at the start of the service period and ending when an employee first becomes eligible for retirement, but not less than six months as this is the minimum period of time required for an award not to be subject to forfeiture. Our equity-classified programs generally provide accelerated vesting (i.e., a waiver of the remaining period of service required to earn an award) for awards held by employees at the time they become eligible for retirement (at age 55 with 5 years of service). We have elected to recognize expense on a straight-line basis over the service period for the entire award, irrespective of whether the award was granted with ratable or cliff vesting, and have elected to recognize forfeitures of awards when they occur.

Income Taxes

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to temporary differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income (loss) in the period that includes the enactment date. Interest related to unrecognized income tax benefits is reflected in the “Interest and debt expense” line item, and penalties in the “Operating expenses” or “Selling, general and administrative expenses” line items on our consolidated statement of operations.

Note 2—Changes in Accounting Principles

Effective October 1, 2021, we adopted ASU No. 2020-04, “Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting” and ASU 2021-01, “Reference Rate Reform (Topic 848): Scope.” These pronouncements provide temporary optional expedients and exceptions to the current guidance on contracts, hedge relationships, and other transactions that reference the London Interbank Offered Rate (LIBOR) or another reference rate expected to be discontinued because of reference rate reform. Amendments in ASU 2021-01 further clarify that certain optional expedients and exceptions in Topic 848 for contract modifications and hedge accounting apply to derivatives that are affected by the discounting transition. These pronouncements were effective upon issuance and generally can be applied to applicable contract modifications through December 31, 2022. The adoption of these pronouncements did not impact our consolidated financial statements.

Effective January 1, 2019, we elected to adopt ASU No. 2018-02, “Income Statement—Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income.” This ASU permits the deferred income tax effects stranded in accumulated other comprehensive income (AOCI) resulting from the U.S. Tax Cuts and Jobs Act (the Tax Act) enacted in December 2017 to be reclassified to retained earnings. As of January 1, 2019, we recorded a cumulative effect adjustment to our opening consolidated balance sheet to reclassify an aggregate income tax benefit of \$89 million, primarily related to our pension plans, from accumulated other comprehensive loss to retained earnings.

Effective January 1, 2019, we early adopted ASU 2016-13, “Financial Instruments—Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments,” using the modified retrospective transition method. This ASU amends the impairment model to utilize an expected loss methodology in place of the incurred loss methodology for financial instruments, including trade receivables, and off-balance sheet credit exposures. The amendment requires entities to consider a broader range of information to estimate expected credit losses, which may result in earlier recognition of losses. We recorded a noncash cumulative effect adjustment to retained earnings of \$9 million, net of \$3 million of income taxes, on our opening consolidated balance sheet as of January 1, 2019. See Note 4—Credit Losses, for more information on our presentation of credit losses.

Effective January 1, 2019, we adopted ASU No. 2016-02, “Leases (Topic 842),” using the modified retrospective transition method. The new standard establishes a right-of-use (ROU) model that requires a lessee to record a ROU asset and a lease liability on the consolidated balance sheet for all leases with terms longer than 12 months. Leases will continue to be classified as either finance or operating, with classification affecting the pattern of expense recognition in the consolidated statement of operations.

We elected the package of practical expedients that allowed us to carry forward our determination of whether an arrangement contained a lease and lease classification, as well as our accounting for initial direct costs for existing contracts. We recorded a noncash cumulative effect adjustment, reflecting an aggregate operating lease ROU asset and corresponding lease liability of \$1,415 million and immaterial adjustments to retained earnings and noncontrolling interests, on our opening consolidated balance sheet as of January 1, 2019. See Note 18—Leases, for the new lease disclosures required by this ASU.

Note 3—Sales and Other Operating Revenues

Disaggregated Revenues

The following tables present our disaggregated sales and other operating revenues:

	Millions of Dollars		
	2021	2020	2019
Product Line and Services			
Refined petroleum products	\$ 89,020	49,768	87,902
Crude oil resales	12,801	9,114	14,125
NGL	9,074	4,084	4,814
Services and other*	581	1,163	452
Consolidated sales and other operating revenues	\$ 111,476	64,129	107,293
Geographic Location**			
United States	\$ 87,973	48,711	83,512
United Kingdom	11,132	7,031	9,863
Germany	4,290	3,034	4,053
Other foreign countries	8,081	5,353	9,865
Consolidated sales and other operating revenues	\$ 111,476	64,129	107,293

* Includes derivatives-related activities. See Note 15—Derivatives and Financial Instruments, for additional information.

** Sales and other operating revenues are attributable to countries based on the location of the operations generating the revenues.

Contract-Related Assets and Liabilities

At December 31, 2021 and 2020, receivables from contracts with customers were \$6,140 million and \$3,911 million, respectively. Significant noncustomer balances, such as buy/sell receivables and excise tax receivables, were excluded from these amounts.

Our contract-related assets also include payments we make to our marketing customers related to incentive programs. An incentive payment is initially recognized as an asset and subsequently amortized as a reduction to revenue over the contract term, which generally ranges from 5 to 15 years. At December 31, 2021 and 2020, our asset balances related to such payments were \$466 million and \$404 million, respectively.

Our contract liabilities represent advances from our customers prior to product or service delivery. At December 31, 2021 and 2020, contract liabilities were not material.

Remaining Performance Obligations

Most of our contracts with customers are spot contracts or term contracts with only variable consideration. We do not disclose remaining performance obligations for these contracts as the expected duration is one year or less or because the variable consideration has been allocated entirely to an unsatisfied performance obligation. We also have certain contracts in our Midstream segment that include minimum volume commitments with fixed pricing, which mostly expire by 2022. At December 31, 2021, the remaining performance obligations related to these minimum volume commitment contracts were not material.

Note 4—Credit Losses

We are exposed to credit losses primarily through our sales of refined petroleum products, crude oil and NGL. We assess each counterparty's ability to pay for the products we sell by conducting a credit review. The credit review considers our expected billing exposure and timing for payment and the counterparty's established credit rating or our assessment of the counterparty's creditworthiness based on our analysis of their financial statements when a credit rating is not available. We also consider contract terms and conditions, country and political risk, and business strategy in our evaluation. A credit limit is established for each counterparty based on the outcome of this review. We may require collateralized asset support or a prepayment to mitigate credit risk.

We monitor our ongoing credit exposure through active review of counterparty balances against contract terms and due dates. Our activities include timely account reconciliations, dispute resolution and payment confirmations. We may employ collection agencies and legal counsel to pursue recovery of defaulted receivables.

The negative economic impacts associated with Coronavirus Disease 2019 (COVID-19) increase the probability that certain of our counterparties may not be able to completely fulfill their obligations in a timely manner. In response, we have enhanced our credit monitoring, sought collateral to support some transactions, and required prepayments from higher-risk counterparties.

At December 31, 2021 and 2020, we reported \$7,470 million and \$6,522 million of accounts and notes receivable, net of allowances of \$44 million and \$37 million, respectively. Based on an aging analysis at December 31, 2021, more than 95% of our accounts receivable were outstanding less than 60 days.

We are also exposed to credit losses from off-balance sheet exposures, such as guarantees of joint venture debt and standby letters of credit. See Note 13—Guarantees, and Note 14—Contingencies and Commitments, for more information on these off-balance sheet exposures.

Note 5—Inventories

Inventories at December 31 consisted of the following:

	Millions of Dollars	
	2021	2020
Crude oil and petroleum products	\$ 3,024	3,536
Materials and supplies	370	357
	\$ 3,394	3,893

Inventories valued on the LIFO basis totaled \$2,792 million and \$3,368 million at December 31, 2021 and 2020, respectively. The estimated excess of current replacement cost over LIFO cost of inventories amounted to approximately \$5.7 billion and \$2.7 billion at December 31, 2021 and 2020, respectively.

During each of the three years ended December 31, 2021, certain volume reductions in inventory caused liquidations of LIFO inventory values. For the year ended December 31, 2021, LIFO inventory liquidations decreased net income by \$101 million. These liquidations did not have a material impact on our results for the years ended December 31, 2020 and 2019.

Note 6—Investments, Loans and Long-Term Receivables

Components of investments and long-term receivables at December 31 were:

	Millions of Dollars	
	2021	2020
Equity investments	\$ 12,832	13,037
Other investments	680	145
Loans and long-term receivables	959	442
	\$ 14,471	13,624

Equity Investments

Significant affiliated companies accounted for under the equity method, including nonconsolidated VIEs, at December 31, 2021 and 2020, included:

- Chevron Phillips Chemical Company LLC (CPChem)—50 percent-owned joint venture that manufactures and markets petrochemicals and plastics. We have multiple long-term supply and purchase agreements in place with CPChem with extension options. These agreements cover sales and purchases of refined petroleum products, solvents, fuel gas, natural gas, NGL, and other petrochemical feedstocks. All products are purchased and sold under specified pricing formulas based on various published pricing indices. At December 31, 2021 and 2020, the book value of our investment in CPChem was \$6,369 million and \$6,126 million, respectively.
- WRB Refining LP (WRB)—50 percent-owned joint venture that owns the Wood River and Borger refineries located in Roxana, Illinois, and Borger, Texas, respectively, for which we are the operator and managing partner. We have a basis difference for our investment in WRB because the carrying value of our investment is lower than our share of WRB's recorded net assets. This basis difference was primarily the result of our contribution of these refineries to WRB. On the contribution closing date, a basis difference was created because the fair value of the contributed assets recorded by WRB exceeded our historical book value. The contribution-related basis difference is primarily being amortized and recognized as a benefit to equity earnings over a period of 26 years, which was the estimated remaining useful life of the refineries' PP&E at the contribution closing date. At December 31, 2021, the aggregate remaining basis difference for this investment was \$2,062 million. Equity earnings for the years ended December 31, 2021, 2020 and 2019, were increased by \$186 million, \$180 million and \$182 million, respectively, due to the amortization of our aggregate basis difference. At December 31, 2021 and 2020, the book value of our investment in WRB was \$1,652 million and \$1,819 million, respectively.

We and our co-venturer provided member loans to WRB. At December 31, 2021 and 2020, our 50% share of the outstanding member loan balance, including accrued interest, was \$595 million and \$277 million, respectively.

- Gray Oak Pipeline, LLC—Phillips 66 Partners LP (Phillips 66 Partners) has a consolidated holding company that owns 65% of Gray Oak Pipeline, LLC. Phillips 66 Partners' effective ownership interest in Gray Oak Pipeline, LLC is 42.25%, after considering a co-venturer's 35% interest in the consolidated holding company. The Gray Oak Pipeline, which commenced full operations in the second quarter of 2020, transports crude oil from the Permian and Eagle Ford to Texas Gulf Coast destinations that include Corpus Christi, Texas, and the Sweeny area, including our Sweeny Refinery.

At December 31, 2021 and 2020, Phillips 66 Partners' investment in the Gray Oak Pipeline had a book value of \$812 million and \$860 million, respectively. See Note 27—Phillips 66 Partners LP, for additional information regarding Phillips 66 Partners' ownership in the consolidated holding company and Gray Oak Pipeline, LLC.

- DCP Sand Hills Pipeline, LLC (Sand Hills)—Phillips 66 Partners' 33 percent-owned joint venture that owns an NGL pipeline system that extends from the Permian Basin and Eagle Ford to facilities on the Texas Gulf Coast and to the Mont Belvieu, Texas, market hub. The Sand Hills Pipeline system is operated by DCP Midstream, LP (DCP Partners). At December 31, 2021 and 2020, the book value of Phillips 66 Partners' investment in Sand Hills was \$577 million and \$582 million, respectively.
- Dakota Access, LLC (Dakota Access) and Energy Transfer Crude Oil Company, LLC (ETCO)—Two Phillips 66 Partners 25 percent-owned joint ventures. Dakota Access owns a pipeline system that transports crude oil from the Bakken/Three Forks production area in North Dakota to Patoka, Illinois, and ETCO owns a connecting crude oil pipeline system from Patoka to Nederland, Texas. These two pipeline systems collectively form the Bakken Pipeline system, which is operated by a co-venturer.

In 2020, the trial court presiding over litigation regarding the Dakota Access Pipeline ordered the U.S. Army Corps of Engineers (USACE) to prepare an Environmental Impact Statement (EIS) relating to an easement under Lake Oahe in North Dakota and later vacated the easement. Although the easement has been vacated, the USACE has indicated that it will not take action to stop pipeline operations while it proceeds with the EIS, which is expected to be completed in the second half of 2022. In May 2021, the court denied a request for an injunction to shut down the pipeline while the EIS is being prepared and, in June 2021, dismissed the litigation. It is possible that the litigation could be reopened or new litigation challenging the EIS, once completed, could be filed. In September 2021, Dakota Access filed a writ of certiorari, requesting the U.S. Supreme Court to review the lower court's judgment that ordered the EIS and vacated the easement.

In March 2019, a wholly owned subsidiary of Dakota Access closed an offering of \$2.5 billion aggregate principal amount of senior unsecured notes consisting of:

- \$650 million aggregate principal amount of 3.625% Senior Notes due 2022.
- \$1.0 billion aggregate principal amount of 3.900% Senior Notes due 2024.
- \$850 million aggregate principal amount of 4.625% Senior Notes due 2029.

Dakota Access and ETCO have guaranteed repayment of the notes. In addition, Phillips 66 Partners and its co-venturers in Dakota Access provided a Contingent Equity Contribution Undertaking (CECU) in conjunction with the notes offering. Under the CECU, the co-venturers may be severally required to make proportionate equity contributions to Dakota Access if there is an unfavorable final judgment in the above mentioned ongoing litigation. Contributions may be required if Dakota Access determines that the issues included in any such final judgment cannot be remediated and Dakota Access has or is projected to have insufficient funds to satisfy repayment of the notes. If Dakota Access undertakes remediation to cure issues raised in a final judgment, contributions may be required if any series of the notes become due, whether by acceleration or at maturity, during such time, to the extent Dakota Access has or is projected to have insufficient funds to pay such amounts. At December 31, 2021, Phillips 66 Partners' share of the maximum potential equity contributions under the CECU was approximately \$631 million.

If the pipeline is required to cease operations, and should Dakota Access and ETCO not have sufficient funds to pay ongoing expenses, Phillips 66 Partners also could be required to support its share of the ongoing expenses, including scheduled interest payments on the notes of approximately \$25 million annually, in addition to the potential obligations under the CECU.

At December 31, 2021 and 2020, the aggregate book value of Phillips 66 Partners' investments in Dakota Access and ETCO was \$574 million and \$577 million, respectively.

- **Rockies Express Pipeline LLC (REX)**—25 percent-owned joint venture that owns a natural gas pipeline system that extends from Wyoming and Colorado to Ohio with a bidirectional section that extends from Ohio to Illinois. The REX Pipeline system is operated by our co-venturer. We have a basis difference for our investment in REX because the carrying value of our investment is lower than our share of REX's recorded net assets. This basis difference was created by historical impairment charges we recorded for this investment and is being amortized and recognized as a benefit to equity earnings over a period of 25 years, which was the estimated remaining useful life of REX's PP&E when the impairment charges were recorded. At December 31, 2021, the remaining basis difference for this investment was \$300 million. Equity earnings for each of the years ended December 31, 2021, 2020 and 2019, were increased by \$19 million due to the amortization of our basis difference. At December 31, 2021 and 2020, the book value of our investment in REX was \$510 million and \$547 million, respectively.
- **DCP Midstream, LLC (DCP Midstream)**—50 percent-owned joint venture that owns and operates NGL and gas pipelines, gas plants, gathering systems, storage facilities and fractionation plants, through its subsidiary DCP Partners. DCP Midstream markets a portion of its NGL to us and our equity affiliates.

We have a basis difference for our investment in DCP Midstream because the carrying value of our investment is lower than our share of DCP Midstream's recorded net assets. This basis difference was the result of impairment charges recorded on our investment in 2020 and 2019. This basis difference is being amortized and recognized as a benefit to equity earnings over a period of 22 years, which was the estimated remaining useful life of DCP Midstream's PP&E when the impairment charges were recorded. At December 31, 2021, the aggregate remaining basis difference for this investment was \$1,646 million. Equity earnings for the years ended December 31, 2021, 2020 and 2019, were increased by \$82 million, \$71 million and \$10 million, respectively, due to the amortization of our basis difference. See Note 9—Impairments, and Note 16—Fair Value Measurements for additional information regarding the impairments and the techniques used to determine the fair value of our investment in DCP Midstream. At December 31, 2021 and 2020, the book value of our investment in DCP Midstream was \$391 million and \$297 million, respectively.

- **Bayou Bridge Pipeline, LLC (Bayou Bridge)**—Phillips 66 Partners' 40 percent-owned joint venture that owns a pipeline that transports crude oil from Nederland, Texas, to St. James, Louisiana. The Bayou Bridge Pipeline is operated by Phillips 66 Partners' co-venturer. At December 31, 2021 and 2020, the book value of Phillips 66 Partners' investment in Bayou Bridge was \$277 million and \$288 million, respectively.
- **CF United LLC (CF United)**—A retail marketing joint venture with operations primarily on the U.S. West Coast. We own a 50% voting interest and a 48% economic interest in this joint venture. CF United is considered a VIE, because our co-venturer has an option to require us to purchase its interest based on a fixed multiple. The put option becomes effective July 1, 2023, and expires on March 31, 2024. The put option is viewed as a variable interest as the purchase price on the exercise date may not represent the then-current fair value of CF United. We have determined that we are not the primary beneficiary because we and our co-venturer jointly direct the activities of CF United that most significantly impact economic performance. At December 31, 2021, our maximum exposure to loss was comprised of our \$277 million investment in CF United, and any potential future loss resulting from the put option, should the purchase price based on a fixed multiple exceed the then-current fair value of CF United. At December 31, 2020, the book value of our investment in CF United was \$332 million.
- **DCP Southern Hills Pipeline, LLC (Southern Hills)**—Phillips 66 Partners' 33 percent-owned joint venture that owns an NGL pipeline system that extends from the Midcontinent region to the Mont Belvieu, Texas, market hub. The Southern Hills Pipeline system is operated by DCP Partners. At both December 31, 2021 and 2020, the book value of Phillips 66 Partners' investment in Southern Hills was \$217 million.

- **OnCue Holdings, LLC (OnCue)**—50 percent-owned joint venture that owns and operates retail convenience stores. We fully guaranteed various debt agreements of OnCue, and our co-venturer did not participate in the guarantees. This entity is considered a VIE because our debt guarantees resulted in OnCue not being exposed to all potential losses. We have determined we are not the primary beneficiary because we do not have the power to direct the activities that most significantly impact economic performance. At December 31, 2021, our maximum exposure to loss was \$183 million, which represented the book value of our investment in OnCue of \$114 million and guaranteed debt obligations of \$69 million. At December 31, 2020, the book value of our investment in OnCue was \$96 million.
- **Liberty Pipeline LLC (Liberty)**—In the first quarter of 2021, Phillips 66 Partners’ decision to exit the Liberty Pipeline project resulted in a \$198 million before-tax impairment of its investment in Liberty. The impairment is included in the “Impairments” line item on our consolidated statement of operations for the year ended December 31, 2021. In April 2021, Phillips 66 Partners transferred its ownership interest in Liberty to its co-venturer for cash and certain pipeline assets with a value that approximated its book value of \$46 million at March 31, 2021. At December 31, 2020, the book value of Phillips 66 Partners’ investment in Liberty was \$241 million. See Note 9—Impairments, and Note 16—Fair Value Measurements, for additional information regarding the impairment and the techniques used to determine the fair value of Phillips 66 Partners’ investment in Liberty.

Other Investments

In September 2021, we acquired 78 million ordinary shares in NOVONIX Limited (NOVONIX), representing a 16% ownership interest, for \$150 million. These ordinary shares are traded on the Australian Securities Exchange. NOVONIX is a Brisbane, Australia-based company that develops technology and supplies materials for lithium-ion batteries. Since we do not have significant influence over the operating and financial policies of NOVONIX and the shares we own have a readily determinable fair value, our investment is recorded at fair value at the end of each reporting period. The fair value of our investment is recorded in the “Investments and long-term receivables” line item on our consolidated balance sheet, and the change in the fair value of our investment, or unrealized gain (loss), is recorded in the “Other income” line item on our consolidated statement of operations. The fair value of our investment in NOVONIX was \$520 million at December 31, 2021. The unrealized investment gain, including foreign exchange impacts, was \$370 million for the year ended December 31, 2021. See Note 16—Fair Value Measurements, for additional information regarding the recurring fair value measurement of our investment in NOVONIX.

Total distributions received from affiliates were \$3,043 million, \$1,717 million, and \$2,055 million for the years ended December 31, 2021, 2020 and 2019, respectively. In addition, at December 31, 2021, retained earnings included approximately \$2.5 billion related to the undistributed earnings of affiliated companies.

Summarized 100% financial information for all affiliated companies accounted for under the equity method, on a combined basis, was:

	Millions of Dollars		
	2021	2020	2019
Revenues	\$ 49,339	30,531	38,156
Income before income taxes	6,346	2,104	4,976
Net income	6,125	1,990	4,787
Current assets	7,866	6,210	6,654
Noncurrent assets	56,040	55,806	56,163
Current liabilities	7,952	5,391	6,094
Noncurrent liabilities	16,906	16,887	15,740
Noncontrolling interests	3,003	2,997	2,145

Note 7—Properties, Plants and Equipment

Our investment in PP&E is recorded at cost. Investments in refining and processing facilities are generally depreciated on a straight-line basis over a 25-year life, pipeline assets over a 45-year life and terminal assets over a 33-year life. The company's investment in PP&E, with the associated accumulated depreciation and amortization (Accum. D&A), at December 31 was:

Millions of Dollars						
	2021			2020		
	Gross PP&E	Accum. D&A	Net PP&E	Gross PP&E	Accum. D&A	Net PP&E
Midstream	\$ 12,524	3,064	9,460	12,313	2,815	9,498
Chemicals	—	—	—	—	—	—
Refining	23,878	12,517	11,361	24,647	12,019	12,628
Marketing and Specialties	1,819	1,035	784	1,815	1,007	808
Corporate and Other	1,576	746	830	1,448	666	782
	\$ 39,797	17,362	22,435	40,223	16,507	23,716

In the fourth quarter of 2021, we announced the shutdown of our Alliance Refinery in connection with plans to convert it to a terminal. We performed an evaluation of assets associated with our Alliance Refinery, and determined that certain Refining and Midstream PP&E had no further utility to us. As a result, we retired these PP&E and recorded depreciation and amortization of \$155 million before-tax, of which \$85 million was recorded in our Refining segment and \$70 million was recorded in our Midstream segment.

See Note 9—Impairments, for information regarding PP&E impairments associated with our Alliance Refinery and San Francisco Refinery asset groups.

Note 8—Goodwill and Intangibles

The carrying amount of goodwill by segment at December 31 was:

	Millions of Dollars			
	Midstream	Refining	Marketing and Specialties	Total
Balance at December 31, 2019	\$ 626	1,805	839	3,270
Asset transfer	—	40	(40)	—
Impairments*	—	(1,845)	—	(1,845)
Balance at December 31, 2020	626	—	799	1,425
Goodwill assigned to acquisitions	—	—	59	59
Balance at December 31, 2021	\$ 626	—	858	1,484

*Represents accumulated impairments at December 31, 2021.

In December 2021, we acquired a commercial fleet fueling business on the West Coast in our M&S segment and recognized goodwill of \$59 million associated with this acquisition.

See Note 9—Impairments, for information regarding the goodwill impairment in the Refining reporting unit during 2020.

Intangible Assets

The gross carrying value of indefinite-lived intangible assets at December 31 consisted of the following:

	Millions of Dollars	
	2021	2020
Trade names and trademarks	\$ 503	503
Refinery air and operating permits	212	222
	\$ 715	725

The net book value of our amortized intangible assets was \$98 million and \$118 million at December 31, 2021 and 2020, respectively. Acquisitions of amortized intangible assets were not material in 2021 and 2020. For the years ended December 31, 2021, 2020 and 2019, amortization expense was \$26 million, \$27 million and \$17 million, respectively, and is expected to be less than \$20 million per year in future years.

See Note 9—Impairments, for information regarding the impairment of intangible assets related to our San Francisco Refinery.

Note 9—Impairments

	Millions of Dollars		
	2021	2020	2019
Midstream	\$ 209	1,464	858
Refining	1,288	2,763	3
Marketing and Specialties	1	—	—
Corporate and Other	—	25	—
Total impairments	\$ 1,498	4,252	861

Equity Investments

Liberty

In the first quarter of 2021, Phillips 66 Partners decided to exit the Liberty Pipeline project, which had previously been deferred due to the challenging business environment caused by the COVID-19 pandemic. As a result, Phillips 66 Partners recorded a \$198 million before-tax impairment to reduce the book value of its investment in Liberty at March 31, 2021, to estimated fair value.

Red Oak Pipeline LLC (Red Oak)

In the third quarter of 2020, the Red Oak Pipeline project was canceled. As a result, we recorded an \$84 million before-tax impairment to reduce the carrying value of our investment to our share of the estimated salvage value of the joint venture's assets at September 30, 2020.

Other

In the fourth quarter of 2020, Phillips 66 Partners assessed for impairment its equity method investments in two crude oil transportation and terminaling joint ventures, and concluded that the carrying values of these investments at December 31, 2020, were greater than their fair values. Phillips 66 Partners concluded these differences were not temporary, based on its projections of future crude oil production. As a result, Phillips 66 Partners recorded before-tax impairments totaling \$96 million.

DCP Midstream

At September 30, 2019, we estimated the fair value of our investment in DCP Midstream was below our book value due to a decline in the market values of DCP Partners common units and its then general partner interest. We concluded this difference was not temporary due to its duration and magnitude, and we recorded an \$853 million before-tax impairment in the third quarter of 2019. After the elimination of its general partner economic interests in November 2019, the fair value of our investment in DCP Midstream depends solely on the market value of DCP Partners common units. In the first quarter of 2020, the market value of DCP Partners common units further declined by approximately 85%. As a result, at March 31, 2020, the fair value of our investment in DCP Midstream was significantly lower than its book value. We concluded this difference was not temporary primarily due to its magnitude, and we recorded a \$1,161 million before-tax impairment of our investment in the first quarter of 2020.

PP&E and Intangible Assets

Alliance Refinery

In the third quarter of 2021, we identified impairment indicators related to our Alliance Refinery as a result of damages sustained from Hurricane Ida and our reassessment of the role this refinery will play in our refining portfolio. Accordingly, we assessed the refinery asset group for impairment by performing an analysis that considered several usage scenarios, including selling or converting the asset group to an alternative use. Based on our analysis, we concluded that the carrying value of the asset group was not recoverable. As a result, we recorded a \$1,298 million before-tax impairment to reduce the carrying value of net PP&E in this asset group to its fair value of approximately \$200 million. \$1,288 million of the impairment charge was recorded in our Refining segment and \$10 million was recorded in our Midstream segment. In the fourth quarter of 2021, we announced the shutdown of our Alliance Refinery in connection with plans to convert it to a terminal. See Note 7—Properties, Plants and Equipment, for additional information related to our Alliance Refinery.

San Francisco Refinery

In the third quarter of 2020, we announced a plan to reconfigure our San Francisco Refinery to produce renewable fuels at the Rodeo refining facility in Rodeo, California, starting in early 2024. Consequently, we plan to cease operation of the Santa Maria refining facility in Arroyo Grande, California, certain assets at the Rodeo refining facility, and associated Midstream assets in 2023. We assessed the San Francisco Refinery asset group for impairment and concluded that the carrying value of the asset group was not recoverable. As a result, we recorded a \$1,030 million before-tax impairment to reduce the carrying value of the net PP&E and intangible assets in this asset group to its fair value of \$940 million. The impairment resulted in a reduction of net PP&E totaling \$1,009 million and intangible assets of \$21 million. This impairment was primarily related to our Refining segment, with the exception of \$120 million that was related to PP&E in our Midstream segment.

Goodwill

Our stock price declined significantly in the first quarter of 2020, mainly due to the disruption in global commodity and equity markets related to the COVID-19 pandemic. We assessed our goodwill for impairment due to the decline in our market capitalization and concluded that the carrying value of our Refining reporting unit at March 31, 2020, was greater than its fair value by an amount in excess of its goodwill balance. Accordingly, we recorded a before-tax goodwill impairment charge of \$1,845 million in our Refining segment during the first quarter of 2020.

These impairment charges are included within the “Impairments” line item on our consolidated statement of operations. See Note 16—Fair Value Measurements, for additional information on the determination of fair value used to record these impairments.

Outlook

During 2021, global refined petroleum product demand steadily recovered due to the easing of COVID-19 pandemic restrictions and the administration of COVID-19 vaccines. Consequently, sales of refined petroleum products, refining margins and volumes through our refineries and logistics systems have improved. However, as some uncertainty remains regarding the impact of the COVID-19 pandemic on global economic activities, we continue to monitor our asset and investment portfolio for indicators of impairment. The consequences of a sustained disruption of economic activities by the pandemic may include additional asset impairments and portfolio rationalization in the future.

Note 10—Asset Retirement Obligations and Accrued Environmental Costs

Asset retirement obligations and accrued environmental costs at December 31 were:

	Millions of Dollars	
	2021	2020
Asset retirement obligations	\$ 395	309
Accrued environmental costs	436	427
Total asset retirement obligations and accrued environmental costs	831	736
Asset retirement obligations and accrued environmental costs due within one year*	(104)	(79)
Long-term asset retirement obligations and accrued environmental costs	\$ 727	657

* Classified as a current liability on the consolidated balance sheet, under the caption "Other accruals."

Asset Retirement Obligations

We have asset retirement obligations that we are required to perform under law or contract once an asset is permanently taken out of service. Our recognized asset retirement obligations primarily involve asbestos abatement at our refineries; decommissioning, removal or dismantlement of certain assets at refineries that have or will be shut down; and dismantlement or removal of assets at certain leased international marketing sites. Most of our asset retirement obligations are not expected to be paid until many years in the future and are expected to be funded from general company resources at the time of removal.

During the years ended December 31, 2021 and 2020, our overall asset retirement obligation changed as follows:

	Millions of Dollars	
	2021	2020
Balance at January 1	\$ 309	280
Accretion of discount	14	15
New obligations	22	10
Changes in estimates of existing obligations	66	14
Spending on existing obligations	(12)	(11)
Foreign currency translation	(4)	1
Balance at December 31	\$ 395	309

During the year ended December 31, 2021, our asset retirement balance increased by \$86 million. This increase was primarily due to changes in estimates of existing obligations related to the planned shutdown of our Santa Maria Refinery in connection with our Rodeo Renewed project, and asbestos abatement, as well as new obligations related to the decommissioning of certain assets at our Alliance Refinery, which was shut down in the fourth quarter of 2021 in connection with plans to convert it to a terminal.

Accrued Environmental Costs

Of our total accrued environmental costs at December 31, 2021, \$260 million was primarily related to cleanup at domestic refineries and underground storage tanks at U.S. service stations; \$123 million was associated with nonoperator sites; and \$53 million was related to sites at which we have been named a potentially responsible party under federal or state laws. A large portion of our expected environmental expenditures have been discounted as these obligations were acquired in various business combinations. Expected expenditures for acquired environmental obligations were discounted using a weighted-average discount rate of approximately 5%. At December 31, 2021, the accrued balance for acquired environmental liabilities was \$239 million. The expected future undiscounted payments related to the portion of the accrued environmental costs that have been discounted are: \$24 million in 2022, \$26 million in 2023, \$20 million in 2024, \$17 million in 2025, \$13 million in 2026, and \$206 million in the aggregate for all years after 2026.

Note 11—Earnings (Loss) Per Share

The numerator of basic earnings (loss) per share (EPS) is net income (loss) attributable to Phillips 66, adjusted for noncancelable dividends paid on unvested share-based employee awards during the vesting period (participating securities) and the premium paid for the repurchase of noncontrolling interests. The denominator of basic EPS is the sum of the daily weighted-average number of common shares outstanding during the periods presented and fully vested stock and unit awards that have not yet been issued as common stock. The numerator of diluted EPS is also based on net income (loss) attributable to Phillips 66, which is reduced by dividend equivalents paid on participating securities for which the dividends are more dilutive than the participation of the awards in the earnings (loss) of the periods presented, and the premium paid for the repurchase of noncontrolling interests. To the extent unvested stock, unit or option awards and vested unexercised stock options are dilutive, they are included with the weighted-average common shares outstanding in the denominator. Treasury stock is excluded from the denominator in both basic and diluted EPS.

	2021		2020		2019	
	Basic	Diluted	Basic	Diluted	Basic	Diluted
Amounts Attributed to Phillips 66 Common Stockholders (<i>millions</i>):						
Net income (loss) attributable to Phillips 66	\$ 1,317	1,317	(3,975)	(3,975)	3,076	3,076
Income allocated to participating securities	(9)	(9)	(8)	(8)	(6)	(2)
Premium paid for the repurchase of noncontrolling interests	(2)	(2)	—	—	—	—
Net income (loss) available to common stockholders	\$ 1,306	1,306	(3,983)	(3,983)	3,070	3,074
Weighted-average common shares outstanding (<i>thousands</i>):						
	437,886	440,028	437,327	439,530	448,787	451,364
Effect of share-based compensation	2,142	336	2,203	—	2,577	2,524
Weighted-average common shares outstanding—EPS	440,028	440,364	439,530	439,530	451,364	453,888
Earnings (Loss) Per Share of Common Stock (<i>dollars</i>)	\$ 2.97	2.97	(9.06)	(9.06)	6.80	6.77

Note 12—Debt

Short-term and long-term debt at December 31 was:

	Millions of Dollars	
	2021	2020
<i>Phillips 66</i>		
4.300% Senior Notes due April 2022	\$ 1,000	2,000
3.700% Senior Notes due April 2023	500	500
0.900% Senior Notes due February 2024	800	800
3.850% Senior Notes due April 2025	650	650
1.300% Senior Notes due February 2026	500	500
3.900% Senior Notes due March 2028	800	800
2.150% Senior Notes due December 2030	850	850
4.650% Senior Notes due November 2034	1,000	1,000
5.875% Senior Notes due May 2042	1,500	1,500
4.875% Senior Notes due November 2044	1,700	1,700
3.300% Senior Notes due March 2052	1,000	—
Term Loan due November 2023 at 1.397% at year-end 2020	—	500
Floating Rate Senior Notes due February 2021 at 0.833% at year-end 2020	—	500
Floating Rate Senior Notes due February 2024 at 0.840% at year-end 2020	—	450
Floating Rate Advance Term Loan due December 2034 at 0.699% and 0.755% at year-end 2021 and 2020, respectively—related party	25	25
Other	1	1
<i>Phillips 66 Partners</i>		
2.450% Senior Notes due December 2024	300	300
3.605% Senior Notes due February 2025	500	500
3.550% Senior Notes due October 2026	500	500
3.750% Senior Notes due March 2028	500	500
3.150% Senior Notes due December 2029	600	600
4.680% Senior Notes due February 2045	450	450
4.900% Senior Notes due October 2046	625	625
Floating Rate Term Loan due April 2022 at 0.978% at year-end 2021	450	—
Tax-Exempt Bonds due April 2021 at weighted-average rate of 0.360% at year-end 2020	—	50
Revolving Credit Facility due January 2021 at weighted-average rate of 1.397% at year-end 2020	—	415
Debt at face value	14,251	15,716
Finance leases	290	264
Software obligations	16	19
Net unamortized discounts and debt issuance costs	(109)	(106)
Total debt	14,448	15,893
Short-term debt	(1,489)	(987)
Long-term debt	\$ 12,959	14,906

Maturities of borrowings outstanding at December 31, 2021, inclusive of net unamortized discounts and debt issuance costs, for each of the years from 2022 through 2026 are \$1,489 million, \$524 million, \$1,121 million, \$1,179 million and \$1,013 million, respectively.

2021 Activities

In December 2021, Phillips 66 used cash on hand to repay the \$450 million outstanding principal balance of its Floating Rate Senior Notes due February 2024. The redemption price of the senior notes was equal to 100% of the principal amount of the senior notes outstanding, plus accrued and unpaid interest.

In November 2021, Phillips 66 closed its public offering of \$1 billion aggregate principal amount of 3.300% senior unsecured notes due 2052. Interest on the Senior Notes due 2052 is payable semiannually on March 15 and September 15 of each year, commencing on March 15, 2022. Proceeds received from the public offering were \$982 million, net of underwriters' discounts and commissions, as well as debt issuance costs. In December 2021, Phillips 66 used the proceeds from this offering, together with cash on hand, to repay \$1 billion in aggregate principal amount of its \$2 billion 4.300% Senior Notes due April 2022.

In September 2021, Phillips 66 repaid the \$500 million of outstanding borrowings under the delayed draw term loan facility due November 2023 described below under "Term Loan Facility."

In April 2021, Phillips 66 Partners entered into a \$450 million term loan agreement and borrowed the full amount. The term loan agreement has a maturity date of April 5, 2022, and the outstanding borrowings can be repaid at any time and from time to time, in whole or in part, without premium or penalty. Borrowings bear interest at a floating rate based on either a Eurodollar rate or a reference rate, plus a margin of 0.875%. Proceeds were primarily used to repay amounts borrowed under Phillips 66 Partners' \$750 million revolving credit facility.

In April 2021, Phillips 66 Partners repaid \$50 million of its tax-exempt bonds upon maturity.

In February 2021, Phillips 66 repaid \$500 million outstanding principal balance of its floating-rate senior notes upon maturity.

2020 Activities

Senior Unsecured Notes

In November 2020, Phillips 66 closed its public offering of \$1.75 billion aggregate principal amount of senior unsecured notes consisting of:

- \$450 million aggregate principal amount of Floating Rate Senior Notes due 2024 (the Floating Rate Notes).
- \$800 million aggregate principal amount of 0.900% Senior Notes due 2024.
- \$500 million aggregate principal amount of 1.300% Senior Notes due 2026.

The Floating Rate Notes bear interest at a floating rate, reset quarterly, equal to the three-month LIBOR plus 0.62% per year, subject to adjustment. Interest on the Senior Notes due 2024 and 2026 is payable semiannually on February 15 and August 15 of each year, commencing on February 15, 2021.

Proceeds received from the public offering of senior unsecured notes in November 2020 were \$1.74 billion, net of underwriters' discounts and commissions, as well as debt issuance costs. On November 19, 2020, a portion of these proceeds was used to repay \$500 million of outstanding borrowings under the term loan facility that Phillips 66 entered into in March 2020 (see the "Term Loan Facility" section below for a full description of the term loan facility). In addition, a portion of the proceeds was used to repay the \$500 million aggregate principal amount of our outstanding Floating Rate Senior Notes due February 2021. The remainder of the proceeds are being used for general corporate purposes.

In June 2020, Phillips 66 closed its public offering of \$1 billion aggregate principal amount of senior unsecured notes consisting of:

- \$150 million aggregate principal amount of 3.850% Senior Notes due 2025.
- \$850 million aggregate principal amount of 2.150% Senior Notes due 2030.

In April 2020, Phillips 66 closed its public offering of \$1 billion aggregate principal amount of senior unsecured notes consisting of:

- \$500 million aggregate principal amount of 3.700% Senior Notes due 2023.
- \$500 million aggregate principal amount of 3.850% Senior Notes due 2025.

Interest on the Senior Notes due 2023 is payable semiannually on April 6 and October 6 of each year, commencing on October 6, 2020. The Senior Notes due 2025 issued in June 2020 constitute a further issuance of the Senior Notes due 2025 originally issued in April 2020. The \$650 million in aggregate principal amount of Senior Notes due 2025 is treated as a single class of debt securities. Interest on the Senior Notes due 2025 is payable semiannually on April 9 and October 9 of each year, commencing on October 9, 2020. Interest on the Senior Notes due 2030 is payable semiannually on June 15 and December 15 of each year, commencing on December 15, 2020.

Proceeds received from the public offerings of senior unsecured notes in June and April of 2020 were \$1,008 million exclusive of accrued interest received, and \$993 million, respectively, net of underwriters' discounts or premiums and commissions, as well as debt issuance costs. These proceeds were used for general corporate purposes.

Term Loan Facility

In March 2020, Phillips 66 entered into a \$1 billion 364-day delayed draw term loan agreement (the Facility) and borrowed \$1 billion under the Facility shortly thereafter. In November 2020, we repaid \$500 million of borrowings outstanding under the Facility, and the Facility was amended to extend the maturity date of the remaining \$500 million to November 2023. Borrowings under the Facility bear interest at a floating rate based on either a Eurodollar rate or a reference rate, plus a margin determined by the credit rating of Phillips 66's senior unsecured long-term debt.

Other Debt Repayments

In April 2020, Phillips 66 repaid \$300 million outstanding principal balance of its floating-rate notes due April 2020 and the \$200 million outstanding principal balance of its term loan facility due April 2020. Also in April 2020, Phillips 66 Partners repaid \$25 million of its tax-exempt bonds upon maturity.

Revolving Credit Facilities and Commercial Paper

Phillips 66 has a \$5 billion revolving credit facility which may be used for direct bank borrowings, as support for issuances of letters of credit, and as support for our commercial paper program. We have an option to increase the overall capacity to \$6 billion, subject to certain conditions. We also have the option to extend the scheduled maturity of the facility for up to two additional one-year terms after its July 30, 2024, maturity date, subject to, among other things, the consent of the lenders holding the majority of the commitments and of each lender extending its commitment. The facility is with a broad syndicate of financial institutions and contains covenants that are usual and customary for an agreement of this type, including a maximum consolidated net debt-to-capitalization ratio of 65% as of the last day of each fiscal quarter. The facility has customary events of default, such as nonpayment of principal when due; nonpayment of interest, fees or other amounts; and violation of covenants. Outstanding borrowings under the facility bear interest, at our option, at either: (a) the Eurodollar rate in effect from time to time plus the applicable margin; or (b) the reference rate (as described in the facility) plus the applicable margin. The facility also provides for customary fees, including commitment fees. The pricing levels for the commitment fees and interest-rate margins are determined based on the ratings in effect for Phillips 66's senior unsecured long-term debt from time to time. Phillips 66 may at any time prepay outstanding borrowings under the facility, in whole or in part, without premium or penalty. At December 31, 2021 and 2020, no amount had been drawn under the facility.

Phillips 66 also has a \$5 billion uncommitted commercial paper program for short-term working capital needs that is supported by our revolving credit facility. Commercial paper maturities are contractually limited to 365 days. At December 31, 2021 and 2020, no borrowings were outstanding under the program.

Phillips 66 Partners has a \$750 million revolving credit facility which may be used for direct bank borrowings and as support for issuances of letters of credit. Phillips 66 Partners has an option to increase the overall capacity to \$1 billion, subject to certain conditions. Phillips 66 Partners also has the option to extend the facility for two additional one-year terms after its July 30, 2024, maturity date, subject to, among other things, the consent of the lenders holding the majority of the commitments and of each lender extending its commitment. The facility is with a broad syndicate of financial institutions and contains covenants that are usual and customary for an agreement of this type. The facility has customary events of default, such as nonpayment of principal when due; nonpayment of interest, fees or other amounts; and violation of covenants. Outstanding revolving borrowings under the facility bear interest, at Phillips 66 Partners' option, at either: (a) the Eurodollar rate in effect from time to time plus the applicable margin; or (b) the reference rate (as described in the facility) plus the applicable margin. The facility also provides for customary fees, including commitment fees. The pricing levels for the commitment fees and interest-rate margins are determined based on Phillips 66 Partners' credit ratings in effect from time to time. Borrowings under the facility may be short-term or long-term in duration, and Phillips 66 Partners may at any time prepay outstanding borrowings under the facility, in whole or in part, without premium or penalty. At December 31, 2021, no borrowings were outstanding under this facility, compared with borrowings of \$415 million at December 31, 2020. At both December 31, 2021 and 2020, \$1 million in letters of credit had been issued that were supported by this facility.

We had approximately \$5.7 billion and \$5.3 billion of total committed capacity available under our revolving credit facilities at December 31, 2021 and 2020, respectively.

Note 13—Guarantees

At December 31, 2021, we were liable for certain contingent obligations under various contractual arrangements as described below. We recognize a liability for the fair value of our obligation as a guarantor for newly issued or modified guarantees. Unless the carrying amount of the liability is noted below, we have not recognized a liability either because the guarantees were issued prior to December 31, 2002, or because the fair value of the obligation is immaterial. In addition, unless otherwise stated, we are not currently performing with any significance under the guarantees and expect future performance to be either immaterial or have only a remote chance of occurrence.

Lease Residual Value Guarantees

Under the operating lease agreement for our headquarters facility in Houston, Texas, we have the option, at the end of the lease term in September 2025, to request to renew the lease, purchase the facility or assist the lessor in marketing it for resale. We have a residual value guarantee associated with the operating lease agreement with a maximum potential future exposure of \$514 million at December 31, 2021. We also have residual value guarantees associated with railcar and airplane leases with maximum potential future exposures totaling \$221 million. These leases have remaining terms of up to ten years.

Guarantees of Joint Venture Obligations

In March 2019, Phillips 66 Partners and its co-venturers in Dakota Access provided a CECU in conjunction with a senior unsecured notes offering. See Note 6—Investments, Loans and Long-Term Receivables, for additional information on Dakota Access and the CECU.

At December 31, 2021, we also had other guarantees outstanding primarily for our portion of certain joint venture debt, which have remaining terms of up to four years. The maximum potential future exposures under these guarantees were approximately \$146 million. Payment would be required if a joint venture defaults on its obligations.

Indemnifications

Over the years, we have entered into various agreements to sell ownership interests in certain corporations, joint ventures and assets that gave rise to indemnification. Agreements associated with these sales include indemnifications for taxes, litigation, environmental liabilities, permits and licenses, employee claims, and real estate tenant defaults. The provisions of these indemnifications vary greatly. The majority of these indemnifications are related to environmental issues, which generally have indefinite terms and potentially unlimited exposure. At December 31, 2021 and 2020, the carrying amount of recorded indemnifications was \$144 million and \$145 million, respectively.

We amortize the indemnification liability over the relevant time period, if one exists, based on the facts and circumstances surrounding each type of indemnity. In cases where the indemnification term is indefinite, we will reverse the liability when we have information to support the reversal. Although it is reasonably possible future payments may exceed amounts recorded, due to the nature of the indemnifications, it is not possible to make a reasonable estimate of the maximum potential amount of future payments. At December 31, 2021 and 2020, environmental accruals for known contamination of \$106 million and \$104 million, respectively, were included in the carrying amount of the recorded indemnifications noted above. These environmental accruals were primarily included in the “Asset retirement obligations and accrued environmental costs” line item on our consolidated balance sheet. For additional information about environmental liabilities, see Note 10—Asset Retirement Obligations and Accrued Environmental Costs and Note 14—Contingencies and Commitments.

Indemnification and Release Agreement

In 2012, in connection with our separation from ConocoPhillips, we entered into an Indemnification and Release Agreement. This agreement governs the treatment between ConocoPhillips and us of matters relating to indemnification, insurance, litigation responsibility and management, and litigation document sharing and cooperation arising in connection with the separation. Generally, the agreement provides for cross indemnities principally designed to place financial responsibility for the obligations and liabilities of our business with us and financial responsibility for the obligations and liabilities of ConocoPhillips’ business with ConocoPhillips. The agreement also establishes procedures for handling claims subject to indemnification and related matters.

Note 14—Contingencies and Commitments

A number of lawsuits involving a variety of claims that arose in the ordinary course of business have been filed against us or are subject to indemnifications provided by us. We also may be required to remove or mitigate the effects on the environment of the placement, storage, disposal or release of certain chemical, mineral and petroleum substances at various active and inactive sites. We regularly assess the need for financial recognition or disclosure of these contingencies. In the case of all known contingencies (other than those related to income taxes), we accrue a liability when the loss is probable and the amount is reasonably estimable. If a range of amounts can be reasonably estimated and no amount within the range is a better estimate than any other amount, then the minimum of the range is accrued. We do not reduce these liabilities for potential insurance or third-party recoveries. If applicable, we accrue receivables for probable insurance or other third-party recoveries. In the case of income tax-related contingencies, we use a cumulative probability-weighted loss accrual in cases where sustaining a tax position is uncertain. See Note 21—Income Taxes, for additional information about income-tax-related contingencies.

Based on currently available information, we believe it is remote that future costs related to known contingent liability exposures will exceed current accruals by an amount that would have a material adverse impact on our consolidated financial statements. As we learn new facts concerning contingencies, we reassess our position both with respect to accrued liabilities and other potential exposures. Estimates particularly sensitive to future changes include contingent liabilities recorded for environmental remediation, tax and legal matters. Estimated future environmental remediation costs are subject to change due to such factors as the uncertain magnitude of cleanup costs, the unknown time and extent of such remedial actions that may be required, and the determination of our liability in proportion to that of other potentially responsible parties. Estimated future costs related to tax and legal matters are subject to change as events evolve and as additional information becomes available during the administrative and litigation processes.

Environmental

We are subject to international, federal, state and local environmental laws and regulations. When we prepare our consolidated financial statements, we record accruals for environmental liabilities based on management's best estimates, using information available at the time. We measure estimates and base contingent liabilities on currently available facts, existing technology and presently enacted laws and regulations, taking into account stakeholder and business considerations. When measuring contingent environmental liabilities, we also consider our prior experience in remediation of contaminated sites, other companies' cleanup experience, and data released by the EPA or other organizations. We consider unasserted claims in our determination of environmental liabilities, and we accrue them in the period they are both probable and reasonably estimable.

Although liability for environmental remediation costs is generally joint and several for federal sites and frequently so for state sites, we are usually only one of many companies alleged to have liability at a particular site. Due to such joint and several liabilities, we could be responsible for all cleanup costs related to any site at which we have been designated as a potentially responsible party. We have been successful to date in sharing cleanup costs with other financially sound companies. Many of the sites for which we are potentially responsible are still under investigation by the EPA or the state agencies concerned. Prior to actual cleanup, those potentially responsible normally assess the site conditions, apportion responsibility and determine the appropriate remediation. In some instances, we may have no liability or may attain a settlement of liability. Where it appears that other potentially responsible parties may be financially unable to bear their proportional share, we consider this inability in estimating our potential liability, and we adjust our accruals accordingly. As a result of various acquisitions in the past, we assumed certain environmental obligations. Some of these environmental obligations are mitigated by indemnifications made by others for our benefit, although some of the indemnifications are subject to dollar and time limits.

We are currently participating in environmental assessments and cleanups at numerous federal Superfund and comparable state sites. After an assessment of environmental exposures for cleanup and other costs, we make accruals on an undiscounted basis (except those pertaining to sites acquired in a business combination, which we record on a discounted basis) for planned investigation and remediation activities for sites where it is probable future costs will be incurred and these costs can be reasonably estimated. We have not reduced these accruals for possible insurance recoveries. In the future, we may be involved in additional environmental assessments, cleanups and proceedings. See Note 10—Asset Retirement Obligations and Accrued Environmental Costs, for a summary of our accrued environmental liabilities.

Legal Proceedings

Our legal organization applies its knowledge, experience and professional judgment to the specific characteristics of our cases, employing a litigation management process to manage and monitor the legal proceedings against us. Our process facilitates the early evaluation and quantification of potential exposures in individual cases and enables the tracking of those cases that have been scheduled for trial and/or mediation. Based on professional judgment and experience in using these litigation management tools and available information about current developments in all our cases, our legal organization regularly assesses the adequacy of current accruals and determines if adjustment of existing accruals, or establishment of new accruals, is required.

Other Contingencies

We have contingent liabilities resulting from throughput agreements with pipeline and processing companies not associated with financing arrangements. Under these agreements, we may be required to provide any such company with additional funds through advances and penalties for fees related to throughput capacity not utilized.

At December 31, 2021, we had performance obligations secured by letters of credit and bank guarantees of \$856 million related to various purchase and other commitments incident to the ordinary conduct of business.

Long-Term Throughput Agreements and Take-or-Pay Agreements

We have certain throughput agreements and take-or-pay agreements in support of third-party financing arrangements. The agreements typically provide for crude oil transportation to be used in the ordinary course of our business. At December 31, 2021, the estimated aggregate future payments under these agreements were \$325 million per year for each year from 2022 through 2026 and \$1,358 million in aggregate for all years after 2026. For the years ended December 31, 2021, 2020 and 2019, total payments under these agreements were \$327 million, \$320 million and \$321 million, respectively.

Note 15—Derivatives and Financial Instruments

Derivative Instruments

We use financial and commodity-based derivative contracts to manage exposures to fluctuations in commodity prices, interest rates and foreign currency exchange rates, or to capture market opportunities. Because we do not apply hedge accounting for commodity derivative contracts, all realized and unrealized gains and losses from commodity derivative contracts are recognized in our consolidated statement of operations. Gains and losses from derivative contracts held for trading not directly related to our physical business are reported net in the “Other income” line item on our consolidated statement of operations. Cash flows from all our derivative activity for the periods presented appear in the operating section on our consolidated statement of cash flows.

Purchase and sales contracts with firm minimum notional volumes for commodities that are readily convertible to cash are recorded on our consolidated balance sheet as derivatives unless the contracts are eligible for, and we elect, the normal purchases and normal sales exception, whereby the contracts are recorded on an accrual basis. We generally apply the normal purchases and normal sales exception to eligible crude oil, refined petroleum product, NGL, natural gas, renewable feedstock, and power commodity contracts to purchase or sell quantities we expect to use or sell in the normal course of business. All other derivative instruments are recorded at fair value on our consolidated balance sheet. For further information on the fair value of derivatives, see Note 16—Fair Value Measurements.

Commodity Derivative Contracts—We sell into or receive supply from the worldwide crude oil, refined petroleum product, NGL, natural gas, renewable feedstock and electric power markets, exposing our revenues, purchases, cost of operating activities and cash flows to fluctuations in the prices for these commodities. Generally, our policy is to remain exposed to the market prices of commodities; however, we use futures, forwards, swaps and options in various markets to balance physical systems, meet customer needs, manage price exposures on specific transactions, and do a limited amount of trading not directly related to our physical business, all of which may reduce our exposure to fluctuations in market prices. We also use the market knowledge gained from these activities to capture market opportunities such as moving physical commodities to more profitable locations, storing commodities to capture seasonal or time premiums, and blending commodities to capture quality upgrades.

The following table indicates the consolidated balance sheet line items that include the fair values of commodity derivative assets and liabilities. The balances in the following table are presented on a gross basis, before the effects of counterparty and collateral netting. However, we have elected to present our commodity derivative assets and liabilities with the same counterparty on a net basis on our consolidated balance sheet when the legal right of offset exists.

Millions of Dollars								
December 31, 2021					December 31, 2020			
	Commodity Derivatives		Effect of Collateral Netting	Net Carrying Value Presented on the Balance Sheet	Commodity Derivatives		Effect of Collateral Netting	Net Carrying Value Presented on the Balance Sheet
	Assets	Liabilities			Assets	Liabilities		
Assets								
Prepaid expenses and other current assets	\$ 99	(20)	—	79	13	—	—	13
Other assets	3	(1)	—	2	5	(4)	—	1
Liabilities								
Other accruals	758	(855)	49	(48)	665	(721)	46	(10)
Other liabilities and deferred credits	—	(1)	—	(1)	—	—	—	—
Total	\$ 860	(877)	49	32	683	(725)	46	4

At December 31, 2021 and 2020, there was no material cash collateral received or paid that was not offset on our consolidated balance sheet.

The realized and unrealized gains (losses) incurred from commodity derivatives, and the line items where they appear on our consolidated statement of operations, were:

	Millions of Dollars		
	2021	2020	2019
Sales and other operating revenues	\$ (468)	436	(150)
Other income	34	10	33
Purchased crude oil and products	(313)	174	(161)
Net gain (loss) from commodity derivative activity	\$ (747)	620	(278)

The following table summarizes our material net exposures resulting from outstanding commodity derivative contracts. These financial and physical derivative contracts are primarily used to manage price exposure on our underlying operations. The underlying exposures may be from nonderivative positions such as inventory volumes. Financial derivative contracts may also offset physical derivative contracts, such as forward purchase and sales contracts. The percentage of our derivative contract volumes expiring within the next 12 months was more than 95% at December 31, 2021 and 2020.

Commodity	Open Position Long / (Short)	
	2021	2020
Crude oil, refined petroleum products, NGL and renewable feedstocks (<i>millions of barrels</i>)	(18)	(13)

Credit Risk from Derivative and Financial Instruments

Financial instruments potentially exposed to concentrations of credit risk consist primarily of trade receivables and derivative contracts.

Our trade receivables result primarily from the sale of products from, or related to, our refinery operations and reflect a broad national and international customer base, which limits our exposure to concentrations of credit risk. The majority of these receivables have payment terms of 30 days or less. We continually monitor this exposure and the creditworthiness of the counterparties and recognize bad debt expense based on a probability assessment of credit loss. Generally, we do not require collateral to limit the exposure to loss; however, we will sometimes use letters of credit, prepayments or master netting arrangements to mitigate credit risk with counterparties that both buy from and sell to us, as these agreements permit the amounts owed by us to others to be offset against amounts owed to us.

The credit risk from our derivative contracts, such as forwards and swaps, derives from the counterparty to the transaction. Individual counterparty exposure is managed within predetermined credit limits and includes the use of cash-call margins when appropriate, thereby reducing the risk of significant nonperformance. We also use futures, swaps and option contracts that have a negligible credit risk because these trades are cleared with an exchange clearinghouse and subject to mandatory margin requirements, typically on a daily basis, until settled.

Certain of our derivative instruments contain provisions that require us to post collateral if the derivative exposure exceeds a threshold amount. We have contracts with fixed threshold amounts and other contracts with variable threshold amounts that are contingent on our credit rating. The variable threshold amounts typically decline for lower credit ratings, while both the variable and fixed threshold amounts typically revert to zero if our credit ratings fall below investment grade. Cash is the primary collateral in all contracts; however, many contracts also permit us to post letters of credit as collateral.

The aggregate fair values of all derivative instruments with such credit-risk-related contingent features that were in a liability position were immaterial at December 31, 2021 and 2020.

Note 16—Fair Value Measurements

Recurring Fair Value Measurements

We carry certain assets and liabilities at fair value, which we measure at the reporting date using the price that would be received to sell an asset or paid to transfer a liability (i.e., an exit price), and disclose the quality of these fair values based on the valuation inputs used in these measurements under the following hierarchy:

- Level 1: Fair value measured with unadjusted quoted prices from an active market for identical assets or liabilities.
- Level 2: Fair value measured either with: (1) adjusted quoted prices from an active market for similar assets or liabilities; or (2) other valuation inputs that are directly or indirectly observable.
- Level 3: Fair value measured with unobservable inputs that are significant to the measurement.

We classify the fair value of an asset or liability based on the significance of its observable or unobservable inputs to the measurement. However, the fair value of an asset or liability initially reported as Level 3 will be subsequently reported as Level 2 if the unobservable inputs become inconsequential to its measurement or corroborating market data becomes available. Conversely, an asset or liability initially reported as Level 2 will be subsequently reported as Level 3 if corroborating market data becomes unavailable.

We used the following methods and assumptions to estimate the fair value of financial instruments:

- *Cash and cash equivalents*—The carrying amount reported on our consolidated balance sheet approximates fair value.
- *Accounts and notes receivable*—The carrying amount reported on our consolidated balance sheet approximates fair value.
- *Derivative instruments*—We fair value our exchange-traded contracts based on quoted market prices obtained from the New York Mercantile Exchange, the Intercontinental Exchange or other exchanges, and classify them as Level 1 in the fair value hierarchy. When exchange-cleared contracts lack sufficient liquidity, or are valued using either adjusted exchange-provided prices or nonexchange quotes, we classify those contracts as Level 2. Physical commodity forward purchase and sales contracts and over-the-counter (OTC) financial swaps are generally valued using forward quotes provided by brokers and price index developers, such as Platts and Oil Price Information Service. We corroborate these quotes with market data and classify the resulting fair values as Level 2. When forward market prices are not available, we estimate fair value using the forward price of a similar commodity, adjusted for the difference in quality or location. In certain less liquid markets or for longer-term contracts, forward prices are not as readily available. In these circumstances, physical commodity purchase and sales contracts and OTC swaps are valued using internally developed methodologies that consider historical relationships among various commodities that result in management's best estimate of fair value. We classify these contracts as Level 3. Physical and OTC commodity options are valued using industry-standard models that consider various assumptions, including quoted forward prices for commodities, time value, volatility factors and contractual prices for the underlying instruments, as well as other relevant economic measures. The degree to which these inputs are observable in the forward markets determines whether the options are classified as Level 2 or 3. We use a midmarket pricing convention (the midpoint between bid and ask prices). When appropriate, valuations are adjusted to reflect credit considerations, generally based on available market evidence. We determine the fair value of our interest rate swaps based on observable market valuations for interest rate swaps that have notional amounts, terms and pay and reset frequencies similar to ours.
- *Rabbi trust assets*—These deferred compensation investments are measured at fair value using unadjusted quoted prices available from national securities exchanges and are therefore categorized as Level 1 in the fair value hierarchy.
- *Investment in NOVONIX*—Our investment in NOVONIX is measured at fair value using unadjusted quoted prices available from the Australian Securities Exchange and is therefore categorized as Level 1 in the fair value hierarchy.

- *Debt*—The carrying amount of our floating-rate debt approximates fair value. The fair value of our fixed-rate debt is estimated based on observable market prices.

The following tables display the fair value hierarchy for our financial assets and liabilities either accounted for or disclosed at fair value on a recurring basis. These values are determined by treating each contract as the fundamental unit of account; therefore, derivative assets and liabilities with the same counterparty are shown on a gross basis in the hierarchy sections of these tables, before the effects of counterparty and collateral netting. The following tables also reflect the effect of netting derivative assets and liabilities with the same counterparty for which we have the legal right of offset and collateral netting.

The carrying values and fair values by hierarchy of our financial assets and liabilities, either carried or disclosed at fair value, including any effects of counterparty and collateral netting, were:

	Millions of Dollars							
	December 31, 2021							
	Fair Value Hierarchy			Total Fair Value of Gross Assets & Liabilities	Effect of Counterparty Netting	Effect of Collateral Netting	Difference in Carrying Value and Fair Value	Net Carrying Value Presented on the Balance Sheet
	Level 1	Level 2	Level 3					
Commodity Derivative Assets								
Exchange-cleared instruments	\$ 419	368	—	787	(779)	—	—	8
Physical forward contracts	—	73	—	73	—	—	—	73
Rabbi trust assets	158	—	—	158	N/A	N/A	—	158
Investment in NOVONIX	520	—	—	520	N/A	N/A	—	520
	\$ 1,097	441	—	1,538	(779)	—	—	759
Commodity Derivative Liabilities								
Exchange-cleared instruments	\$ 463	362	—	825	(779)	(49)	—	(3)
OTC instruments	—	1	—	1	—	—	—	1
Physical forward contracts	—	51	—	51	—	—	—	51
Floating-rate debt	—	475	—	475	N/A	N/A	—	475
Fixed-rate debt, excluding finance leases and software obligations	—	15,353	—	15,353	N/A	N/A	(1,686)	13,667
	\$ 463	16,242	—	16,705	(779)	(49)	(1,686)	14,191

	Millions of Dollars							
	December 31, 2020							
	Fair Value Hierarchy			Total Fair Value of Gross Assets & Liabilities	Effect of Counterparty Netting	Effect of Collateral Netting	Difference in Carrying Value and Fair Value	Net Carrying Value Presented on the Balance Sheet
	Level 1	Level 2	Level 3					
Commodity Derivative Assets								
Exchange-cleared instruments	\$ 314	356	—	670	(669)	—	—	1
Physical forward contracts	—	13	—	13	—	—	—	13
Rabbi trust assets	143	—	—	143	N/A	N/A	—	143
	\$ 457	369	—	826	(669)	—	—	157
Commodity Derivative Liabilities								
Exchange-cleared instruments	\$ 351	364	—	715	(669)	(46)	—	—
Physical forward contracts	—	10	—	10	—	—	—	10
Interest-rate derivatives	—	3	—	3	—	—	—	3
Floating-rate debt	—	1,940	—	1,940	N/A	N/A	—	1,940
Fixed-rate debt, excluding finance leases and software obligations	—	15,597	—	15,597	N/A	N/A	(1,927)	13,670
	\$ 351	17,914	—	18,265	(669)	(46)	(1,927)	15,623

The rabbi trust assets and investment in NOVONIX are recorded in the “Investments and long-term receivables” line item, and floating-rate and fixed-rate debt are recorded in the “Short-term debt” and “Long-term debt” line items on our consolidated balance sheet. See Note 15—Derivatives and Financial Instruments, for information regarding where the assets and liabilities related to our commodity derivatives are recorded on our consolidated balance sheet.

Nonrecurring Fair Value Measurements

Equity Investments

Liberty

In the first quarter of 2021, Phillips 66 Partners wrote down the book value of its investment in Liberty to estimated fair value using a Level 3 nonrecurring fair value measurement. This nonrecurring measurement was based on the estimated fair value of Phillip 66 Partners’ share of the joint venture’s pipeline assets and net working capital. See Note 6—Investments, Loans and Long-Term Receivables, for more information regarding Phillips 66 Partners’ transfer of its ownership in Liberty to its co-venturer in April 2021.

Other

In the fourth quarter of 2020, the nonrecurring fair value measurements used by Phillips 66 Partners to impair its equity method investments in two crude oil transportation and terminaling joint ventures were calculated by weighting the results of different economic scenarios using the income approach. The income approach uses a discounted cash flow model that requires various observable and nonobservable inputs, including volumes, rates/tariffs, expenses and discount rates. These valuations resulted in a Level 3 nonrecurring fair value measurement.

DCP Midstream

In the third quarter of 2019, the nonrecurring fair value measurement used to record an impairment of our DCP Midstream investment consisted of:

- The fair value of our share of DCP Midstream’s limited partner interest in DCP Partners, which was estimated based on an average market price of DCP Partners common units for a multi-day trading period encompassing September 30, 2019.
- The fair value of our share of DCP Midstream’s general partner interest in DCP Partners, which was estimated using two primary inputs: 1) estimated future cash flows of distributions attributable to the incentive distribution rights from DCP Partners, and 2) a multiple of those cash flows based on internal estimates and observation of IDR conversion transactions by other master limited partnerships.

Overall, we concluded the third-quarter 2019 valuation resulted in a Level 3 nonrecurring fair value measurement.

In the first quarter of 2020, the nonrecurring fair value measurement used to record an impairment of our DCP Midstream investment was the fair value of our share of DCP Midstream’s limited partner interest in DCP Partners, which was estimated based on average market prices of DCP Partners common units for a multi-day trading period encompassing March 31, 2020. This valuation resulted in a Level 2 nonrecurring fair value measurement.

PP&E and Intangible Assets

Alliance Refinery

In the third quarter of 2021, we remeasured the carrying value of the net PP&E of our Alliance Refinery asset group to fair value. The fair value of PP&E was determined using a combination of the income, cost and sales comparison approaches. The income approach used a discounted cash flow model that requires various observable and non-observable inputs, such as commodity prices, margins, operating rates, sales volumes, operating expenses, capital expenditures, terminal-year values and a risk-adjusted discount rate. The cost approach used assumptions for the current replacement costs of similar plant and equipment assets adjusted for estimated physical deterioration, functional obsolescence and economic obsolescence. The sales comparison approach used the value of similar properties recently sold or currently offered for sale. This valuation resulted in a Level 3 nonrecurring fair value measurement.

San Francisco Refinery

In the third quarter of 2020, we remeasured the carrying value of the net PP&E and intangible assets of our San Francisco Refinery asset group to fair value. The estimated fair value of the plants, equipment and intangible assets was determined using a replacement cost approach adjusted, as applicable, for physical deterioration, functional obsolescence and economic obsolescence. The estimated fair value of the properties was determined using a sales comparison approach. This valuation resulted in a Level 3 nonrecurring fair value measurement.

Goodwill

The carrying value of the Refining reporting unit's goodwill was remeasured to fair value on a nonrecurring basis in the first quarter of 2020. The fair value of the Refining reporting unit was calculated by weighting the results from the income approach and the market approach. The income approach used a discounted cash flow model that included various observable and nonobservable inputs, such as prices, volumes, expenses, capital expenditures, discount rates and projected long-term growth rates and terminal values. The market approach used peer company enterprise values relative to current and future net income (loss) before net interest expense, income taxes, depreciation and amortization (EBITDA) projections to arrive at an average multiple. This multiple was applied to the reporting unit's current and projected EBITDA, with consideration for an estimated market participant acquisition premium. The resulting Level 3 fair value estimate was less than the Refining reporting unit's carrying value by an amount that exceeded the existing goodwill balance of the reporting unit. As a result, the Refining reporting unit's goodwill was impaired to zero. As part of our impairment analysis, the fair value of all reporting units was reconciled to the company's market capitalization.

See Note 9—Impairments, for additional information on the above impairments.

Note 17—Equity

Preferred Stock

We have 500 million shares of preferred stock authorized, with a par value of \$0.01 per share, none of which have been issued.

Treasury Stock

Since July 2012, our Board of Directors has authorized an aggregate of \$15 billion of repurchases of our outstanding common stock. The authorizations do not have expiration dates. The share repurchases are expected to be funded primarily through available cash. We are not obligated to repurchase any shares of common stock pursuant to these authorizations and may commence, suspend or terminate repurchases at any time. Since the inception of our share repurchase program in 2012 through December 31, 2021, we have repurchased a total of 159,349,212 shares at an aggregate cost of \$12,486 million. Shares of stock repurchased are held as treasury shares. We suspended share repurchases in mid-March 2020 to preserve liquidity in response to the global economic disruption caused by the COVID-19 pandemic.

Our Board of Directors separately authorized two transactions in 2014 and 2018, which resulted in the repurchase of 52,422,615 shares of Phillips 66 common stock with an aggregate value of \$4,630 million.

Common Stock Dividends

On February 9, 2022, our Board of Directors declared a quarterly cash dividend of \$0.92 per common share, payable March 1, 2022, to holders of record at the close of business on February 22, 2022.

Noncontrolling Interests

Our noncontrolling interests primarily represent issuances of common and preferred units to the public by Phillips 66 Partners. See Note 27—Phillips 66 Partners LP, for information on Phillips 66 Partners.

Note 18—Leases

We lease marine vessels, pipelines, storage tanks, railcars, service station sites, office buildings, corporate aircraft, land and other facilities and equipment. In determining whether an agreement contains a lease, we consider our ability to control the asset and whether third-party participation or vendor substitution rights limit our control. Certain leases include escalation clauses for adjusting rental payments to reflect changes in price indices, as well as renewal options and/or options to purchase the leased property. Renewal options have been included only when reasonably certain of exercise. There are no significant restrictions imposed on us in our lease agreements with regards to dividend payments, asset dispositions or borrowing ability. Certain leases have residual value guarantees, which may require additional payments at the end of the lease term if future fair values decline below contractual lease balances.

In our implementation of ASU No. 2016-02, we elected to discount lease obligations using our incremental borrowing rate. Furthermore, we elected to separate costs for lease and service components for contracts involving marine vessels and consignment service stations. For these contracts, we allocate the consideration payable between the lease and service components using the relative standalone prices of each component. For contracts involving all other asset types, we elected the practical expedient to account for the lease and service components on a combined basis. Our right of way agreements in effect prior to January 1, 2019, were not accounted for as leases as they were not initially determined to be leases at their commencement dates. However, modifications to these agreements or new agreements will be assessed and accounted for accordingly under ASU No. 2016-02. For short-term leases, which are leases that, at the commencement date, have a lease term of 12 months or less and do not include an option to purchase the underlying asset that is reasonably certain to be exercised, we elected to not recognize the ROU asset and corresponding lease liability on our consolidated balance sheet.

The following table indicates the consolidated balance sheet line items that include the ROU assets and lease liabilities for our finance and operating leases at December 31:

	Millions of Dollars			
	2021		2020	
	Finance Leases	Operating Leases	Finance Leases	Operating Leases
Right-of-Use Assets				
Net properties, plants and equipment	\$ 259	—	264	—
Other assets	—	1,050	—	1,211
Total right-of-use assets	\$ 259	1,050	264	1,211
Lease Liabilities				
Short-term debt	\$ 33	—	16	—
Other accruals	—	343	—	369
Long-term debt	257	—	248	—
Other liabilities and deferred credits	—	725	—	853
Total lease liabilities	\$ 290	1,068	264	1,222

Future minimum lease payments at December 31, 2021, for finance and operating lease liabilities were:

	Millions of Dollars	
	Finance Leases	Operating Leases
2022	\$ 42	367
2023	28	234
2024	29	158
2025	29	113
2026	26	85
Remaining years	207	231
Future minimum lease payments	361	1,188
Amount representing interest or discounts	(71)	(120)
Total lease liabilities	\$ 290	1,068

Our finance lease liabilities relate primarily to service station consignment agreements with a marketing joint venture and a crude oil terminal in the United Kingdom. The lease liability for the terminal finance lease is subject to foreign currency translation adjustments each reporting period.

Components of net lease cost for the years ended December 31, 2021, 2020 and 2019, were:

	Millions of Dollars		
	2021	2020	2019
Finance lease cost			
Amortization of right-of-use assets	\$ 23	21	20
Interest on lease liabilities	9	10	6
Total finance lease cost	32	31	26
Operating lease cost	461	527	531
Short-term lease cost	104	108	118
Variable lease cost	3	39	12
Sublease income	(15)	(22)	(16)
Total net lease cost	\$ 585	683	671

Cash paid for amounts included in the measurement of our lease liabilities for the years ended December 31, 2021, 2020 and 2019, was:

	Millions of Dollars		
	2021	2020	2019
Operating cash outflows—finance leases	\$ 9	10	6
Operating cash outflows—operating leases	438	521	553
Financing cash outflows—finance leases	21	17	21

During the years ended December 31, 2021, 2020 and 2019, we recorded additional noncash ROU assets and corresponding operating lease liabilities totaling \$260 million, \$363 million and \$342 million, respectively, related to new and modified lease agreements.

At December 31, 2021 and 2020, the weighted-average remaining lease terms and discount rates for our lease liabilities were:

	2021	2020
Weighted-average remaining lease term—finance leases (years)	13.0	15.1
Weighted-average remaining lease term—operating leases (years)	5.7	5.7
Weighted-average discount rate—finance leases	3.3 %	3.6
Weighted-average discount rate—operating leases	3.2 %	3.6

Note 19—Pension and Postretirement Plans

The following table provides a reconciliation of the projected benefit obligations and plan assets for our pension plans and accumulated benefit obligations for our other postretirement benefit plans:

	Millions of Dollars					
	Pension Benefits				Other Benefits	
	2021		2020		2021	2020
	U.S.	Int'l.	U.S.	Int'l.		
Change in Benefit Obligations						
Benefit obligations at January 1	\$ 3,405	1,480	3,148	1,228	213	226
Service cost	146	36	138	28	5	5
Interest cost	81	19	91	22	5	7
Plan participant contributions	—	2	—	2	6	6
Net actuarial loss (gain)	(82)	(37)	353	168	(13)	(13)
Benefits paid	(517)	(44)	(325)	(34)	(19)	(18)
Foreign currency exchange rate change	—	(47)	—	66	—	—
Benefit obligations at December 31	\$ 3,033	1,409	3,405	1,480	197	213
Change in Fair Value of Plan Assets						
Fair value of plan assets at January 1	\$ 2,738	1,212	2,702	1,046	—	—
Actual return on plan assets	289	114	342	118	—	—
Company contributions	37	27	19	26	13	12
Plan participant contributions	—	2	—	2	6	6
Benefits paid	(517)	(44)	(325)	(34)	(19)	(18)
Foreign currency exchange rate change	—	(31)	—	54	—	—
Fair value of plan assets at December 31	\$ 2,547	1,280	2,738	1,212	—	—
Funded Status at December 31	\$ (486)	(129)	(667)	(268)	(197)	(213)

Amounts recognized in the consolidated balance sheet for our pension and other postretirement benefit plans at December 31 include:

	Millions of Dollars					
	Pension Benefits				Other Benefits	
	2021		2020		2021	2020
	U.S.	Int'l.	U.S.	Int'l.		
Amounts Recognized in the Consolidated Balance Sheet						
Noncurrent assets	\$	—	51	—	—	—
Current liabilities		(25)	—	(25)	(15)	(15)
Noncurrent liabilities		(461)	(180)	(642)	(182)	(198)
Total recognized	\$	(486)	(129)	(667)	(197)	(213)

Included in accumulated other comprehensive loss at December 31 were the following before-tax amounts that had not been recognized in net periodic benefit cost:

	Millions of Dollars					
	Pension Benefits				Other Benefits	
	2021		2020		2021	2020
	U.S.	Int'l.	U.S.	Int'l.		
Unrecognized net actuarial loss (gain)	\$ 251	130	562	253	(24)	(13)
Unrecognized prior service credit	—	(1)	—	(1)	(2)	(4)

Other changes in plan assets and benefit obligations recognized in other comprehensive income (loss):

	Millions of Dollars						
	Pension Benefits				Other Benefits		
	2021		2020		2021	2020	
	U.S.	Int'l.	U.S.	Int'l.			
Sources of Change in Other Comprehensive Income (Loss)							
Net actuarial gain (loss) arising during the period	\$	211	92	(170)	(105)	13	13
Amortization of net actuarial loss (gain) and settlements		101	25	131	16	(1)	—
Amortization of prior service credit		—	(1)	—	(1)	(2)	(2)
Total recognized in other comprehensive income (loss)	\$	312	116	(39)	(90)	10	11

The accumulated benefit obligations for all U.S. and international pension plans were \$2,770 million and \$1,236 million, respectively, at December 31, 2021, and \$3,076 million and \$1,289 million, respectively, at December 31, 2020.

Information for U.S. and international pension plans with an accumulated benefit obligation in excess of plan assets at December 31 was:

	Millions of Dollars			
	Pension Benefits			
	2021		2020	
	U.S.	Int'l.	U.S.	Int'l.
Accumulated benefit obligations	\$ 2,770	410	3,076	447
Fair value of plan assets	2,547	248	2,738	242

Information for U.S. and international pension plans with a projected benefit obligation in excess of plan assets at December 31 was:

	Millions of Dollars			
	Pension Benefits			
	2021		2020	
	U.S.	Int'l.	U.S.	Int'l.
Projected benefit obligations	\$ 3,033	428	3,405	1,480
Fair value of plan assets	2,547	248	2,738	1,212

Components of net periodic benefit cost for all defined benefit plans are presented in the table below:

	Millions of Dollars								
	Pension Benefits						Other Benefits		
	2021		2020		2019		2021	2020	2019
	U.S.	Int'l.	U.S.	Int'l.	U.S.	Int'l.			
Components of Net Periodic Benefit Cost									
Service cost	\$ 146	36	138	28	127	23	5	5	5
Interest cost	81	19	91	22	109	26	5	7	9
Expected return on plan assets	(160)	(59)	(159)	(50)	(143)	(44)	—	—	—
Amortization of prior service credit	—	(1)	—	(1)	—	(1)	(2)	(2)	(2)
Amortization of net actuarial loss (gain)	46	25	70	16	53	6	(1)	—	(1)
Settlements	55	—	61	—	8	—	—	—	—
Total net periodic benefit cost*	\$ 168	20	201	15	154	10	7	10	11

* Included in the "Operating expenses" and "Selling, general and administrative expenses" line items on our consolidated statement of operations.

In determining net periodic benefit cost, we amortize prior service costs on a straight-line basis over the average remaining service period of employees expected to receive benefits under the plan. For net actuarial gains and losses, we amortize 10% of the unamortized balance each year. The amount subject to amortization is determined on a plan-by-plan basis.

The following weighted-average assumptions were used to determine benefit obligations and net periodic benefit costs for years ended December 31:

	Pension Benefits				Other Benefits	
	2021		2020		2021	2020
	U.S.	Int'l.	U.S.	Int'l.		
Assumptions Used to Determine Benefit Obligations:						
Discount rate	2.95 %	1.60	2.50	1.27	2.90	2.30
Rate of compensation increase	4.30	3.05	4.00	3.01	—	—
Interest crediting rate on cash balance plan	2.05	—	2.05	—	—	—
Assumptions Used to Determine Net Periodic Benefit Cost:						
Discount rate	2.70 %	1.27	3.00	1.81	2.30	3.05
Expected return on plan assets	6.50	4.86	6.50	4.86	—	—
Rate of compensation increase	4.27	3.01	4.00	3.34	—	—
Interest crediting rate on cash balance plan	2.05	—	2.22	—	—	—

For both U.S. and international pension plans, the overall expected long-term rate of return is developed from the expected future return of each asset class, weighted by the expected allocation of pension assets to that asset class. We rely on a variety of independent market forecasts in developing the expected rate of return for each class of assets.

For the year ended December 31, 2021, actuarial gains resulted in decreases in our U.S. and international pension benefit obligations of \$82 million and \$37 million, respectively. The primary driver for the actuarial gains in 2021 was increases in the discount rates. For the year ended December 31, 2020, actuarial losses resulted in increases in our U.S. and international pension benefit obligations of \$353 million and \$168 million, respectively. The primary drivers for the actuarial losses in 2020 were decreases in the discount rates and changes to the census data demographics.

For the year ended December 31, 2021, the weighted-average actual return on plan assets for our U.S. pension plans was 11%, which resulted in a \$289 million increase in plan assets. For the year ended December 31, 2020, the weighted-average actual return on plan assets for our U.S. pension plans was 14%, which resulted in a \$342 million increase in plan assets. The primary driver of the return on plan assets in 2021 and 2020 was fluctuations in the equity and fixed income markets.

Our other postretirement benefit plans for health insurance are contributory. Effective December 31, 2012, we terminated the subsidy for retiree medical plans. Since January 1, 2013, eligible employees have been able to utilize notional amounts credited to an account during their period of service with the company to pay all, or a portion, of their cost to participate in postretirement health insurance. In general, employees hired after December 31, 2012, will not receive credits to an account, but will have unsubsidized access to health insurance through the plan. The cost of health insurance will be adjusted annually by the company's actuary to reflect actual experience and expected health care cost trends. The measurement of the accumulated benefit obligation assumes a health care cost trend rate of 6.25% in 2022 that declines to 5.00% by 2027.

Plan Assets

The investment strategy for managing pension plan assets is to seek a reasonable rate of return relative to an appropriate level of risk and provide adequate liquidity for benefit payments and portfolio management. We follow a policy of diversifying pension plan assets across asset classes, investment managers, and individual holdings. As a result, our plan assets have no significant concentrations of credit risk. Asset classes that are considered appropriate include equities, fixed income, cash, real estate and infrastructure investments and insurance contracts. Plan fiduciaries may consider and add other asset classes to the investment program from time to time. The target allocations for plan assets are approximately 46% equity securities, 38% debt securities, 8% real estate investments and 8% in all other types of investments as of December 31, 2021. Generally, the investments in the plans are publicly traded, therefore minimizing the liquidity risk in the portfolio.

The following is a description of the valuation methodologies used for the pension plan assets.

- Fair values of equity securities and government debt securities are based on quoted market prices.
- Fair values of corporate debt securities are estimated using recently executed transactions and market price quotations. If there have been no market transactions in a particular fixed income security, its fair value is calculated by pricing models that benchmark the security against other securities with actual market prices.
- Fair values of cash and cash equivalents approximate their carrying amounts.
- Fair values of insurance contracts are valued at the present value of the future benefit payments owed by the insurance company to the plans' participants.
- Fair values of investments in common/collective trusts and real estate and infrastructure investments are valued at the net asset value (NAV) as a practical expedient. The NAV is based on the underlying net assets owned by the fund and the relative interest of each participating investor in the fair value of the underlying assets. These investments valued at NAV are not classified within the fair value hierarchy, but are presented in the fair value table to permit reconciliation of total plan assets to the amounts presented in the fair value table.

The fair values of our pension plan assets at December 31, by asset class, were:

Millions of Dollars								
	U.S.				International			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
2021								
Equity securities	\$ 385	—	—	385	—	—	—	—
Government debt securities	427	—	—	427	—	—	—	—
Corporate debt securities	—	131	—	131	—	—	—	—
Cash and cash equivalents	20	—	—	20	6	—	—	6
Insurance contracts	—	—	—	—	—	—	13	13
Total assets in the fair value hierarchy	832	131	—	963	6	—	13	19
Common/collective trusts measured at NAV				1,266				1,158
Real estate and infrastructure investments measured at NAV				318				103
Total	\$ 832	131	—	2,547	6	—	13	1,280

	Millions of Dollars							
	U.S.				International			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
2020								
Equity securities	\$ 446	—	—	446	—	—	—	—
Government debt securities	424	—	—	424	—	—	—	—
Corporate debt securities	—	138	—	138	—	—	—	—
Cash and cash equivalents	31	—	—	31	3	—	—	3
Insurance contracts	—	—	—	—	—	—	15	15
Total assets in the fair value hierarchy	901	138	—	1,039	3	—	15	18
Common/collective trusts measured at NAV				1,426				1,103
Real estate and infrastructure investments measured at NAV				273				91
Total	\$ 901	138	—	2,738	3	—	15	1,212

Our funding policy for U.S. plans is to contribute at least the minimum required by the Employee Retirement Income Security Act of 1974 and the Internal Revenue Code of 1986, as amended. Contributions to international plans are subject to local laws and tax regulations. Actual contribution amounts are dependent upon plan asset returns, changes in pension obligations, regulatory environments, and other economic factors. In 2022, we expect to contribute approximately \$45 million to our U.S. pension plans and other postretirement benefit plans and \$25 million to our international pension plans.

The following benefit payments, which reflect expected future service, as appropriate, are expected to be paid to plan participants in the years indicated:

	Millions of Dollars		
	Pension Benefits		Other Benefits
	U.S.	Int'l.	
2022	\$ 310	25	16
2023	293	28	16
2024	279	30	17
2025	265	32	17
2026	268	34	17
2027-2031	1,195	197	79

Defined Contribution Plans

Most U.S. employees are eligible to participate in the Phillips 66 Savings Plan (Savings Plan). Employees can contribute up to 75% of their eligible pay, subject to certain statutory limits, in the Savings Plan to a choice of investment funds. For the three years ended December 31, 2021, Phillips 66 provided a company match of participant contributions up to 6% of eligible pay, with an additional Success Share contribution ranging from 0% to 6% of eligible pay based on management discretion.

For the years ended December 31, 2021, 2020 and 2019, we recorded expense of \$142 million, \$145 million and \$192 million, respectively, related to our contributions to the Savings Plan.

Note 20—Share-Based Compensation Plans

In accordance with the Employee Matters Agreement related to the separation, compensation awards based on ConocoPhillips stock and granted before April 30, 2012 (the Separation Date) were converted to compensation awards based on both ConocoPhillips and Phillips 66 stock if, on the Separation Date, the awards were: (1) options outstanding and exercisable; or (2) restricted stock or restricted stock units (RSUs) awarded for completed performance periods under the ConocoPhillips Performance Share Program. Phillips 66 restricted stock, RSUs and options issued in this conversion became subject to the “Omnibus Stock and Performance Incentive Plan of Phillips 66” (the 2012 Plan) on the Separation Date, whether held by grantees working for Phillips 66 or grantees that remained employees of ConocoPhillips. Some of these awards based on Phillips 66 stock and held by employees of ConocoPhillips are outstanding and appear in the activity tables for the Stock Option and the Performance Share Programs presented later in this note.

In May 2013, shareholders approved the 2013 Omnibus Stock and Performance Incentive Plan of Phillips 66 (the P66 Omnibus Plan). Subsequent to this approval, all new share-based awards are granted under the P66 Omnibus Plan, which authorizes the Human Resources and Compensation Committee (HRCC) of our Board of Directors to grant stock options, stock appreciation rights, stock awards (including restricted stock and RSU awards), cash awards, and performance awards to our employees, nonemployee directors and other plan participants. The number of new shares that may be issued under the P66 Omnibus Plan to settle share-based awards may not exceed 45 million.

We recognize share-based compensation expense over the shorter of: (1) the service period (i.e., the stated period of time required to earn the award); or (2) the period beginning at the start of the service period and ending when an employee first becomes eligible for retirement, but not less than six months as this is the minimum period of time required for an award not to be subject to forfeiture. Our equity-classified programs generally provide accelerated vesting (i.e., a waiver of the remaining period of service required to earn an award) for awards held by employees at the time they become eligible for retirement (at age 55 with 5 years of service). We have elected to recognize expense on a straight-line basis over the service period for the entire award, irrespective of whether the award was granted with ratable or cliff vesting, and have elected to recognize forfeitures of awards when they occur.

Total share-based compensation expense recognized in income and the associated income tax benefit for the years ended December 31 were:

	Millions of Dollars		
	2021	2020	2019
Share-based compensation expense	\$ 144	127	169
Income tax benefit	(33)	(35)	(53)

Stock Options

Stock options granted under the provisions of the P66 Omnibus Plan and earlier plans permit purchases of our common stock at exercise prices equivalent to the average of the high and low market price of our stock on the date the options were granted. The options have terms of 10 years and vest ratably, with one-third of the options becoming exercisable on each anniversary date for the three years following the date of grant. Options awarded to employees eligible for retirement are not subject to forfeiture six months after the grant date.

The following table summarizes our stock option activity from January 1, 2021, to December 31, 2021:

	Options	Weighted-Average Exercise Price	Weighted-Average Grant-Date Fair Value	Millions of Dollars Aggregate Intrinsic Value
Outstanding at January 1, 2021	5,433,988	\$ 78.49		
Granted	1,475,100	75.23	\$ 12.06	
Forfeited	(31,670)	81.61		
Exercised	(613,212)	42.26	\$	24
Outstanding at December 31, 2021	6,264,206	\$ 81.25		
Vested at December 31, 2021	4,194,413	\$ 80.46	\$	7
Exercisable at December 31, 2021	3,896,406	\$ 81.19	\$	7

The weighted-average remaining contractual terms of vested options and exercisable options at December 31, 2021, were 5.25 years and 4.91 years, respectively. During 2021, we received \$26 million in cash and realized an income tax benefit of \$3 million from the exercise of options. At December 31, 2021, the remaining unrecognized compensation expense from unvested options was \$4 million, which will be recognized over a weighted-average period of 21 months, the longest period being 25 months. The calculations of realized income tax benefits and weighted-average periods include awards based on both Phillips 66 and ConocoPhillips stock held by Phillips 66 employees.

During 2020 and 2019, we granted options with a weighted-average grant-date fair value of \$15.80 and \$17.58, respectively. During 2020 and 2019, employees exercised options with an aggregate intrinsic value of \$21 million and \$51 million, respectively.

The following table provides the significant assumptions used to calculate the grant-date fair values of options granted over the years shown below, as calculated using the Black-Scholes-Merton option-pricing model:

	2021	2020	2019
Risk-free interest rate	0.93 %	1.58	2.68
Dividend yield	5.30 %	3.20	3.70
Volatility factor	32.11 %	25.23	25.61
Expected life (years)	6.76	6.96	7.06

We calculate the volatility factor using historical Phillips 66 end-of-week closing stock prices. We periodically calculate the average period of time elapsed between grant dates and exercise dates of past grants to estimate the expected life of new option grants.

Restricted Stock Units

Generally, RSUs are granted annually under the provisions of the P66 Omnibus Plan and cliff vest at the end of three years. The grant date fair value is equal to the average of the high and low market price of our stock on the grant date. The recipients receive a quarterly dividend equivalent cash payment until the RSU is settled by issuing one share of our common stock for each RSU at the end of the service period. RSUs granted to retirement-eligible employees are not subject to forfeiture six months after the grant date. Special RSUs are granted to attract or retain key personnel and the terms and conditions may vary by award.

The following table summarizes our RSU activity from January 1, 2021, to December 31, 2021:

				Millions of Dollars
	Stock Units		Weighted-Average Grant-Date Fair Value	Total Fair Value
Outstanding at January 1, 2021	2,786,219	\$	89.95	
Granted	1,466,802		75.91	
Forfeited	(123,567)		79.89	
Issued	(818,864)		93.61	\$ 61
Outstanding at December 31, 2021	3,310,590	\$	83.20	
Not Vested at December 31, 2021	2,281,039	\$	82.48	

At December 31, 2021, the remaining unrecognized compensation cost from unvested RSU awards was \$75 million, which will be recognized over a weighted-average period of 14 months, the longest period being 38 months.

During 2020 and 2019, we granted RSUs with a weighted-average grant-date fair value of \$83.48 and \$95.16, respectively. During 2020 and 2019, we issued shares with an aggregate fair value of \$69 million and \$80 million, respectively, to settle RSUs.

Performance Share Units

Under the P66 Omnibus Plan, we annually grant to senior management restricted performance share units (PSUs) with three-year performance periods that vest when the HRCC approves the three-year performance results on the grant date. PSUs granted under the P66 Omnibus Plan are classified as liability awards and compensation expense is recognized beginning on the authorization date and ending on the vesting date.

PSUs granted under the P66 Omnibus Plan are settled by cash payments equal to the fair value of the awards, which is based on the market prices of our stock near the end of the performance periods. The HRCC must approve the three-year performance results prior to payout. Dividend equivalents are not paid on these awards.

PSUs granted under prior incentive compensation plans were classified as equity awards. These equity awards are settled upon an employee's retirement by issuing one share of our common stock for each PSU held. Dividend equivalents are paid on these awards.

The following table summarizes our PSU activity from January 1, 2021, to December 31, 2021:

			Millions of Dollars	
	Performance Share Units	Weighted-Average Grant-Date Fair Value	Total Fair Value	
Outstanding at January 1, 2021	957,790	\$ 37.28		
Granted	398,935	68.18		
Forfeited	—	—		
Issued	(146,004)	33.82	\$	12
Cash settled	(398,935)	68.18		27
Outstanding at December 31, 2021	811,786	\$ 37.90		
Not Vested at December 31, 2021	1,596	\$ 32.41		

At December 31, 2021, the remaining unrecognized compensation cost from unvested PSU awards was immaterial. The calculations of unamortized expense and weighted-average periods include awards based on both Phillips 66 and ConocoPhillips stock held by Phillips 66 employees.

During 2020 and 2019, we granted PSUs with a weighted-average grant-date fair value of \$112.73 and \$87.42, respectively. During 2020 and 2019, we issued shares with an aggregate fair value of \$41 million and \$44 million, respectively, to settle PSUs. During 2020 and 2019, we cash settled PSUs with an aggregate fair value of \$63 million and \$25 million, respectively.

Note 21—Income Taxes

Components of income tax expense (benefit) were:

	Millions of Dollars		
	2021	2020	2019
Income Tax Expense (Benefit)			
Federal			
Current	\$ 363	(1,324)	354
Deferred	(85)	171	177
Foreign			
Current	50	9	204
Deferred	(39)	67	(50)
State and local			
Current	5	(61)	61
Deferred	(148)	(112)	55
	\$ 146	(1,250)	801

During the year ended December 31, 2020, in accordance with the Coronavirus Aid, Relief, and Economic Security (CARES) Act, we recorded a tax benefit reflecting the carryback of a significant portion of our 2020 net operating loss to a year that had a 35% federal statutory income tax rate. An income tax receivable of \$1.5 billion was included in the “Accounts and notes receivable” line item on our consolidated balance sheet as of December 31, 2020. We received a U.S. federal income tax refund of \$1.1 billion in the second quarter of 2021. As of December 31, 2021, the remaining \$400 million income tax receivable related to 2020 is no longer expected to be received in the next twelve months due to the estimated timing of IRS review procedures and certain elections we made when filing our 2020 income tax return.

During the year ended December 31, 2019, we recorded adjustments to the one-time deemed repatriation tax, which decreased our income tax expense by \$42 million. The adjustments were due to the issuance of additional guidance by the U.S. Internal Revenue Service related to the Tax Act.

Deferred income taxes reflect the net tax effect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for tax purposes. Major components of deferred tax liabilities and assets at December 31 were:

	Millions of Dollars	
	2021	2020
Deferred Tax Liabilities		
Properties, plants and equipment, and intangibles	\$ 3,135	3,487
Investment in joint ventures	2,065	1,859
Investment in subsidiaries	969	940
Inventory	—	77
Other	267	310
Total deferred tax liabilities	6,436	6,673
Deferred Tax Assets		
Benefit plan accruals	431	499
Loss and credit carryforwards	173	148
Asset retirement obligations and accrued environmental costs	120	114
Other financial accruals and deferrals	82	73
Other	262	289
Total deferred tax assets	1,068	1,123
Less: valuation allowance	74	40
Net deferred tax assets	994	1,083
Net deferred tax liabilities	\$ 5,442	5,590

At December 31, 2021, the loss and credit carryforward deferred tax assets were primarily related to a state tax net operating loss carryforward of \$83 million; a foreign tax credit carryforward in the United States of \$67 million; capital loss and net operating loss carryforwards in the United Kingdom of \$11 million; and a German interest deduction carryforward of \$11 million. State net operating loss carryforwards begin to expire in 2040 or have indefinite lives. Foreign tax credit carryforwards, which have a full valuation allowance against them, begin to expire in 2029. The other loss and credit carryforwards, all of which relate to foreign operations, have indefinite lives.

Valuation allowances have been established to reduce deferred tax assets to an amount that will, more likely than not, be realized. During the year ended December 31, 2021, our total valuation allowance balance increased by \$34 million. Based on our historical taxable income, expectations for the future and available tax planning strategies, management expects the remaining net deferred tax assets will be realized as offsets to reversing deferred tax liabilities and the tax consequences of future taxable income.

Earnings of our foreign subsidiaries and foreign joint ventures after December 31, 2017, are generally not subject to incremental income taxes in the United States or withholding taxes in foreign countries upon repatriation. As such, we only assert that the earnings of one of our foreign subsidiaries are permanently reinvested. At December 31, 2021 and 2020, the unrecorded deferred tax liability related to the undistributed earnings of this foreign subsidiary was not material.

We file tax returns in the U.S. federal jurisdiction and in many foreign and state jurisdictions. Unrecognized tax benefits reflect the difference between positions taken on income tax returns and the amounts recognized in the financial statements. The following table is a reconciliation of the changes in our unrecognized income tax benefits balance:

	Millions of Dollars		
	2021	2020	2019
Balance at January 1	\$ 56	40	23
Additions for tax positions of current year	—	—	2
Additions for tax positions of prior years	—	44	29
Reductions for tax positions of prior years	(2)	(28)	(14)
Settlements	—	—	—
Balance at December 31	\$ 54	56	40

Included in the balance of unrecognized income tax benefits at December 31, 2021, 2020 and 2019, were \$35 million, \$37 million and \$15 million, respectively, which, if recognized, would affect our effective income tax rate. With respect to various unrecognized income tax benefits and the related accrued liabilities, we do not expect any to be recognized or paid within the next twelve months.

At December 31, 2021, 2020 and 2019, accrued liabilities for interest and penalties, net of accrued income taxes, totaled \$6 million, \$5 million and \$10 million, respectively. These accruals decreased our results by \$3 million for each of the years ended December 31, 2021, 2020 and 2019.

Audits in significant jurisdictions are generally complete as follows: United Kingdom (2018), Germany (2014) and United States (2013). Certain issues remain in dispute for audited years, and unrecognized income tax benefits for years still subject to or currently undergoing an audit are subject to change. As a consequence, the balance in unrecognized income tax benefits can be expected to fluctuate from period to period. Although it is reasonably possible such changes could be significant when compared with our total unrecognized income tax benefits, the amount of change is not estimable.

The amounts of U.S. and foreign income (loss) before income taxes, with a reconciliation of income tax at the federal statutory rate to the recorded income tax expense (benefit), were:

	Millions of Dollars			Percentage of Income (Loss) Before Income Taxes		
	2021	2020	2019	2021	2020	2019
Income (loss) before income taxes						
United States	\$ 1,737	(5,292)	3,267	99.8 %	106.6	78.2
Foreign	3	328	911	0.2	(6.6)	21.8
	\$ 1,740	(4,964)	4,178	100.0 %	100.0	100.0
Federal statutory income tax	\$ 365	(1,043)	877	21.0 %	21.0	21.0
State income tax, net of federal income tax benefit	(65)	(139)	93	(3.7)	2.8	2.2
Net operating loss carryback	—	(398)	—	—	8.0	—
Goodwill impairment	—	387	—	—	(7.8)	—
Noncontrolling interests	(57)	(54)	(61)	(3.3)	1.1	(1.5)
Non-taxable equity earnings	(53)	(18)	(32)	(3.0)	0.4	(0.7)
Tax law changes	(26)	—	(43)	(1.5)	—	(1.0)
Other*	(18)	15	(33)	(1.1)	(0.3)	(0.8)
	\$ 146	(1,250)	801	8.4 %	25.2	19.2

* Other includes individually immaterial items but is primarily attributable to foreign operations and change in valuation allowance.

For the year ended December 31, 2021, state income tax, net of federal income tax benefit, includes a \$58 million benefit, primarily to reflect the impact of updated apportionment factors.

There is no income tax reflected for the year ended December 31, 2021, in “Capital in Excess of Par” in the consolidated statement of changes in equity. An income tax benefit of \$1 million for the year ended December 31, 2020, and income tax expense of \$123 million for the year ended December 31, 2019, is reflected in “Capital in Excess of Par.”

Note 22—Accumulated Other Comprehensive Loss

Changes in the balances of each component of accumulated other comprehensive loss were as follows:

	Millions of Dollars			
	Defined Benefit Plans	Foreign Currency Translation	Hedging	Accumulated Other Comprehensive Loss
December 31, 2018	\$ (472)	(228)	8	(692)
Other comprehensive income (loss) before reclassifications	(140)	95	(5)	(50)
Amounts reclassified from accumulated other comprehensive loss				
Defined benefit plans*				
Amortization of net actuarial loss, prior service credit and settlements	49	—	—	49
Foreign currency translation	—	—	—	—
Hedging	—	—	(6)	(6)
Net current period other comprehensive income (loss)	(91)	95	(11)	(7)
Income taxes reclassified to retained earnings**	(93)	2	2	(89)
December 31, 2019	(656)	(131)	(1)	(788)
Other comprehensive income (loss) before reclassifications	(262)	151	1	(110)
Amounts reclassified from accumulated other comprehensive loss				
Defined benefit plans*				
Amortization of net actuarial loss, prior service credit and settlements	109	—	—	109
Foreign currency translation	—	—	—	—
Hedging	—	—	(5)	(5)
Net current period other comprehensive income (loss)	(153)	151	(4)	(6)
Other	—	5	—	5
December 31, 2020	(809)	25	(5)	(789)
Other comprehensive income (loss) before reclassifications	318	(70)	2	250
Amounts reclassified from accumulated other comprehensive loss				
Defined benefit plans*				
Amortization of net actuarial loss, prior service credit and settlements	93	—	—	93
Foreign currency translation	—	—	—	—
Hedging	—	—	1	1
Net current period other comprehensive income (loss)	411	(70)	3	344
December 31, 2021	\$ (398)	(45)	(2)	(445)

* Included in the computation of net periodic benefit cost. See Note 19—Pension and Postretirement Plans, for additional information.

** As of January 1, 2019, stranded income taxes related to the enactment of the Tax Act in December 2017 were reclassified to retained earnings upon adoption of ASU No. 2018-02.

Note 23—Cash Flow Information

Supplemental Cash Flow Information

Millions of Dollars			
	2021	2020	2019
Cash Payments (Receipts)			
Interest	\$ 549	478	426
Income taxes*	(1,065)	103	955

* 2021 reflects a net cash refund position. Cash payments for income taxes were \$110 million in 2021.

Note 24—Other Financial Information

Millions of Dollars			
	2021	2020	2019
Interest and Debt Expense			
Incurred			
Debt	\$ 567	550	504
Other	41	24	31
	608	574	535
Capitalized	(27)	(75)	(77)
Expensed	\$ 581	499	458
Other Income			
Interest income	\$ 11	14	43
Unrealized investment gain—NOVONIX	365	—	—
Other, net*	78	52	76
	\$ 454	66	119

* Includes derivatives-related activities. See Note 15—Derivatives and Financial Instruments, for additional information.

Research and Development Expenses	\$ 47	48	54
Advertising Expenses	\$ 52	51	63
Foreign Currency Transaction (Gains) Losses			
Midstream	\$ (5)	—	—
Chemicals	—	—	—
Refining	4	4	—
Marketing and Specialties	—	—	—
Corporate and Other	2	8	5
	\$ 1	12	5

Note 25—Related Party Transactions

Significant transactions with related parties were:

	Millions of Dollars		
	2021	2020	2019
Operating revenues and other income (a)	\$ 3,759	1,932	2,977
Purchases (b)	14,645	6,536	11,726
Operating expenses and selling, general and administrative expenses (c)	284	247	96

- (a) We sold NGL, other petrochemical feedstocks and solvents to CPChem, NGL and certain feedstocks to DCP Midstream, gas oil and hydrogen feedstocks to Excel Paralubes (Excel), and refined petroleum products to several of our equity affiliates in the M&S segment, including OnCue and CF United. We also sold certain feedstocks and intermediate products to WRB and acted as an agent for WRB in supplying crude oil and other feedstocks for a fee. In addition, we charged several of our equity affiliates, including CPChem, for the use of common facilities, such as steam generators, waste and water treaters and warehouse facilities.
- (b) We purchased crude oil, refined petroleum products, NGL and solvents from WRB. We also purchased natural gas and NGL from DCP Midstream and CPChem, as well as other feedstocks from various equity affiliates, for use in our refinery and fractionation processes. In addition, we purchased base oils and fuel products from Excel for use in our specialty and refining businesses. We paid NGL fractionation fees to CPChem. We also paid fees to various pipeline equity affiliates for transporting crude oil, refined petroleum products and NGL.
- (c) We paid consignment fees to CF United, and utility and processing fees to various equity affiliates.

Note 26—Segment Disclosures and Related Information

Our operating segments are:

- 1) **Midstream**—Provides crude oil and refined petroleum product transportation, terminaling and processing services, as well as natural gas and NGL transportation, storage, fractionation, processing and marketing services, mainly in the United States. The Midstream segment includes our master limited partnership (MLP), Phillips 66 Partners, our 50% equity investment in DCP Midstream, and our 16% investment in NOVONIX.
- 2) **Chemicals**—Consists of our 50% equity investment in CPChem, which manufactures and markets petrochemicals and plastics on a worldwide basis.
- 3) **Refining**—Refines crude oil and other feedstocks into petroleum products, such as gasoline, distillates and aviation fuels, as well as renewable fuels, at 12 refineries in the United States and Europe.
- 4) **Marketing and Specialties**—Purchases for resale and markets refined petroleum products and renewable fuels, mainly in the United States and Europe. In addition, this segment includes the manufacturing and marketing of specialty products.

Corporate and Other includes general corporate overhead, interest expense, our investment in new technologies and various other corporate activities. Corporate assets include all cash, cash equivalents and income tax-related assets.

Intersegment sales are at prices that we believe approximate market.

Analysis of Results by Operating Segment

Millions of Dollars			
	2021	2020	2019
Sales and Other Operating Revenues*			
Midstream			
Total sales	\$ 11,937	6,047	7,103
Intersegment eliminations	(3,124)	(1,873)	(2,122)
Total Midstream	8,813	4,174	4,981
Chemicals	3	3	3
Refining			
Total sales	74,871	42,206	76,792
Intersegment eliminations	(46,176)	(24,176)	(45,871)
Total Refining	28,695	18,030	30,921
Marketing and Specialties			
Total sales	75,933	43,164	73,616
Intersegment eliminations	(2,000)	(1,272)	(2,256)
Total Marketing and Specialties	73,933	41,892	71,360
Corporate and Other	32	30	28
Consolidated sales and other operating revenues	\$ 111,476	64,129	107,293

* See Note 3—Sales and Other Operating Revenues, for further details on our disaggregated sales and other operating revenues.

Equity in Earnings (Losses) of Affiliates

Midstream	\$ 877	761	754
Chemicals	1,832	625	870
Refining	(184)	(376)	318
Marketing and Specialties	379	181	185
Corporate and Other	—	—	—
Consolidated equity in earnings of affiliates	\$ 2,904	1,191	2,127

Depreciation, Amortization and Impairments*

Midstream	\$ 652	1,795	1,162
Chemicals	—	—	—
Refining	2,254	3,642	857
Marketing and Specialties	114	103	103
Corporate and Other	83	107	80
Consolidated depreciation, amortization and impairments	\$ 3,103	5,647	2,202

* See Note 9—Impairments, for further details on impairments by segment.

		Millions of Dollars		
		2021	2020	2019
Interest Income and Expense				
Interest income				
Corporate and Other	\$	11	14	43
Interest and debt expense				
Corporate and Other	\$	581	499	458
Income (Loss) Before Income Taxes				
Midstream	\$	1,610	(9)	684
Chemicals		1,844	635	879
Refining		(2,549)	(6,155)	1,986
Marketing and Specialties		1,809	1,446	1,433
Corporate and Other		(974)	(881)	(804)
Consolidated income (loss) before income taxes	\$	1,740	(4,964)	4,178
Investments In and Advances To Affiliates				
Midstream	\$	3,978	4,255	5,131
Chemicals		6,369	6,126	6,229
Refining		2,340	2,202	2,290
Marketing and Specialties		750	744	650
Corporate and Other		2	—	—
Consolidated investments in and advances to affiliates	\$	13,439	13,327	14,300
Total Assets				
Midstream	\$	15,932	15,596	15,716
Chemicals		6,453	6,183	6,249
Refining		19,952	20,404	25,150
Marketing and Specialties		8,505	7,180	8,659
Corporate and Other		4,752	5,358	2,946
Consolidated total assets	\$	55,594	54,721	58,720

	Millions of Dollars		
	2021	2020	2019
Capital Expenditures and Investments			
Midstream	\$ 738	1,747	2,292
Chemicals	—	—	—
Refining	779	816	1,001
Marketing and Specialties	202	173	374
Corporate and Other	141	184	206
Consolidated capital expenditures and investments	\$ 1,860	2,920	3,873

Geographic Information

Long-lived assets, defined as net PP&E plus investments and long-term receivables, by geographic location at December 31 were:

	Millions of Dollars		
	2021	2020	2019
United States	\$ 34,882	35,273	36,407
United Kingdom	1,323	1,313	1,256
Germany	605	653	601
Other foreign countries	96	101	93
Worldwide consolidated	\$ 36,906	37,340	38,357

Note 27—Phillips 66 Partners LP

Phillips 66 Partners, headquartered in Houston, Texas, is a publicly traded MLP formed in 2013, which owns and operates primarily fee-based midstream assets. Phillips 66 Partners' operations consist of crude oil, refined petroleum product and NGL transportation, fractionation, processing, terminaling and storage assets.

On August 1, 2019, Phillips 66 Partners completed a restructuring transaction to eliminate the IDRs held by us and convert our 2% economic general partner interest into a noneconomic general partner interest in exchange for 101 million Phillips 66 Partners common units. As a result of the restructuring transaction, the balance of "Noncontrolling interests" in our consolidated balance sheet decreased \$373 million, with a \$275 million increase to "Capital in excess of par," a \$91 million increase in "Deferred income taxes" and \$7 million of transaction costs. No distributions were made for the general partner interest after August 1, 2019.

At December 31, 2021, we owned 170 million Phillips 66 Partners common units, representing a 74% limited partner interest, while the public owned a 26% limited partner interest and 13.5 million perpetual convertible preferred units. Prior to October 2020, holders of the preferred units received cumulative quarterly distributions equal to \$0.678375 per unit. Beginning in October 2020, holders receive quarterly distributions equal to the greater of \$0.678375 per unit or the per-unit distribution paid to common unitholders. In June 2021, Phillips 66 Partners repurchased 368,528 of its outstanding perpetual convertible preferred units for \$24 million in cash. Upon the repurchase, these preferred units were canceled and are no longer outstanding.

We consolidate Phillips 66 Partners because we determined it is a VIE of which we are the primary beneficiary. As general partner of Phillips 66 Partners, we have the ability to control its financial interests, as well as the ability to direct the activities that most significantly impact its economic performance. As a result of this consolidation, the public common and perpetual convertible preferred unitholders' ownership interests in Phillips 66 Partners are reflected as noncontrolling interests of \$2,169 million and \$2,219 million on our consolidated balance sheet at December 31, 2021 and 2020, respectively.

The most significant assets of Phillips 66 Partners that are available to settle only its obligations, along with its most significant liabilities for which its creditors do not have recourse to Phillips 66's general credit, were:

	Millions of Dollars	
	December 31 2021	December 31 2020
Equity investments*	\$ 2,929	3,244
Net properties, plants and equipment	3,727	3,639
Short-term debt	450	465
Long-term debt	3,447	3,444

* Included in "Investments and long-term receivables" line item on the Phillips 66 consolidated balance sheet.

Phillips 66 Partners has authorized an aggregate of \$750 million under three \$250 million continuous offerings of common units, or at-the-market (ATM) programs. The first two programs concluded in June 2018 and December 2019, respectively. Phillips 66 Partners did not issue any common units under the ATM program for the year ended December 31, 2021. For the years ended December 31, 2020 and 2019, on a settlement-date basis, Phillips 66 Partners generated net proceeds of \$2 million and \$173 million, respectively, from common units issued under the ATM programs.

Gray Oak Pipeline, LLC was formed to develop and construct the Gray Oak Pipeline, which transports crude oil from the Permian and Eagle Ford to Texas Gulf Coast destinations that include Corpus Christi, Texas, and the Sweeny area, including our Sweeny Refinery. Phillips 66 Partners has a consolidated holding company that owns 65% of Gray Oak Pipeline, LLC. In December 2018, a third party acquired a 35% interest in the holding company. Because the holding company's sole asset was its ownership interest in Gray Oak Pipeline, LLC, which was considered a financial asset, and because certain restrictions were placed on the third party's ability to transfer or sell its interest in the holding company during the construction of the Gray Oak Pipeline, the legal sale of the 35% interest did not qualify as a sale under GAAP at that time. The Gray Oak Pipeline commenced full operations in the second quarter of 2020, and the restrictions placed on the co-venturer were lifted on June 30, 2020, resulting in the recognition of the sale under GAAP. Accordingly, at June 30, 2020, the co-venturer's 35% interest in the holding company was recharacterized from a long-term obligation to a noncontrolling interest on our consolidated balance sheet, and the premium of \$84 million previously paid by the co-venturer in 2019 was recharacterized from a long-term obligation to a gain in our consolidated statement of operations. For the year ended December 31, 2020, the co-venturer contributed an aggregate of \$61 million to the holding company to fund its portion of Gray Oak Pipeline, LLC's cash calls. Phillips 66 Partners' effective ownership interest in Gray Oak Pipeline, LLC is 42.25%, after considering the co-venturer's 35% interest in the consolidated holding company. See Note 6—Investments, Loans and Long-Term Receivables, for further discussion regarding Phillips 66 Partners' investment in Gray Oak Pipeline, LLC, as well as certain other joint ventures.

Pending Merger

On October 26, 2021, we entered into a definitive merger agreement with Phillips 66 Partners to acquire all of the limited partner interests in Phillips 66 Partners not already owned by us on the closing date of the transaction. The agreement provides for an all-stock transaction in which each outstanding Phillips 66 Partners common unitholder would receive 0.50 shares of Phillips 66 common stock for each Phillips 66 Partners common unit. Phillips 66 Partners' perpetual convertible preferred units would be converted into common units at a premium to the original issuance price prior to exchange for Phillips 66 common stock. This merger is expected to close in March 2022, subject to customary closing conditions.

If the merger is successfully completed, based on the closing market prices of Phillips 66 common stock and Phillips 66 Partners common units on December 31, 2021, we would issue approximately 44 million shares of Phillips 66 common stock with a value of approximately \$3.2 billion to Phillips 66 Partners' public unitholders following completion of the merger. The number of shares of common stock we will issue and the value of those shares are subject to change until the merger is closed.

Upon closing, Phillips 66 Partners will become a wholly owned subsidiary of Phillips 66 and will no longer be a publicly traded partnership. This transaction will be accounted for as an equity transaction and after the closing we will no longer reflect the ownership interest previously held by Phillips 66 Partners' publicly held common and perpetual convertible preferred unitholders as noncontrolling interests on our consolidated balance sheet nor will we attribute a portion of Phillips 66 Partners' net income to these former unitholders on our consolidated statement of operations.

Item 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

Item 9A. CONTROLS AND PROCEDURES

We maintain disclosure controls and procedures designed to ensure that information required to be disclosed in reports we file or submit under the Securities Exchange Act of 1934, as amended (the Act), is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms, and that such information is accumulated and communicated to management, including our principal executive and principal financial officers, as appropriate, to allow timely decisions regarding required disclosure. As of December 31, 2021, with the participation of management, our Chairman and Chief Executive Officer and our Executive Vice President, Finance and Chief Financial Officer carried out an evaluation, pursuant to Rule 13a-15(b) of the Act, of the effectiveness of our disclosure controls and procedures (as defined in Rule 13a-15(e) of the Act). Based upon that evaluation, our Chairman and Chief Executive Officer and our Executive Vice President, Finance and Chief Financial Officer concluded that our disclosure controls and procedures were operating effectively as of December 31, 2021.

There have been no changes in our internal control over financial reporting, as defined in Rule 13a-15(f) of the Act, in the quarterly period ended December 31, 2021, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management’s Annual Report on Internal Control Over Financial Reporting

This report is included in Item 8 and is incorporated herein by reference.

Report of Independent Registered Public Accounting Firm on Internal Control Over Financial Reporting

This report is included in Item 8 and is incorporated herein by reference.

Item 9B. OTHER INFORMATION

None.

Item 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

PART III

Item 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Information regarding our executive officers appears in Part I of this report.

The remaining information required by Item 10 of Part III is incorporated herein by reference from our Proxy Statement for the Annual Meeting of Stockholders to be held on May 11, 2022, which will be filed within 120 days after December 31, 2021 (2022 Definitive Proxy Statement).*

Item 11. EXECUTIVE COMPENSATION

The information required by Item 11 of Part III is incorporated herein by reference from our 2022 Definitive Proxy Statement.*

Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by Item 12 of Part III is incorporated herein by reference from our 2022 Definitive Proxy Statement.*

Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by Item 13 of Part III is incorporated herein by reference from our 2022 Definitive Proxy Statement.*

Item 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by Item 14 of Part III is incorporated herein by reference from our 2022 Definitive Proxy Statement.*

** Except for information or data specifically incorporated herein by reference under Items 10 through 14, other information and data appearing in our 2022 Definitive Proxy Statement are not deemed to be a part of this Annual Report on Form 10-K or deemed to be filed with the Commission as a part of this report.*

PART IV

Item 15. EXHIBIT AND FINANCIAL STATEMENT SCHEDULES

- (a)
1. Financial Statements and Supplementary Data
The financial statements and supplementary information listed in the Index to Financial Statements, which appears on page 79, are filed as part of this Annual Report on Form 10-K.
 2. Financial Statement Schedules
All financial statement schedules are omitted because they are not required, not significant, not applicable, or the information is shown in the financial statements or notes thereto.
 3. Exhibits
The exhibits listed in the Index to Exhibits, which appears on pages 150 to 153, are filed as part of this Annual Report on Form 10-K.

Item 16. FORM 10-K SUMMARY

None.

PHILLIPS 66

INDEX TO EXHIBITS

Exhibit Number	Exhibit Description	Incorporated by Reference			
		Form	Exhibit Number	Filing Date	SEC File No.
2.1	Separation and Distribution Agreement between ConocoPhillips and Phillips 66, dated April 26, 2012.	8-K	2.1	05/01/2012	001-35349
2.2	Agreement and Plan of Merger, dated as of October 26, 2021, by and among Phillips 66, Phillips 66 Company, Phillips 66 Project Development Inc., Phoenix Sub LLC, Phillips 66 Partners LP, and Phillips 66 Partners GP LLC.	8-K	2.1	10/27/2021	001-35349
3.1	Amended and Restated Certificate of Incorporation of Phillips 66.	8-K	3.1	05/01/2012	001-35349
3.2	Amended and Restated By-Laws of Phillips 66.	8-K	3.1	02/09/2017	001-35349
4.1	Description of Phillips 66's Securities.	10-K	4.1	02/21/2020	001-35349
4.2	Indenture, dated as of March 12, 2012, among Phillips 66, as issuer, Phillips 66 Company, as guarantor, and The Bank of New York Mellon Trust Company, N.A., as trustee, in respect of senior debt securities of Phillips 66.	10-12B/A	4.3	04/05/2012	001-35349
4.3	Form of the terms of 4.300% Senior Notes due 2022.	10-12B/A	4.4	04/05/2012	001-35349
4.4	Form of the terms of 5.875% Senior Notes due 2042.	10-12B/A	4.4	04/05/2012	001-35349
4.5	Form of the terms of 4.650% Senior Notes due November 2034.	8-K	4.2	11/17/2014	001-35349
4.6	Form of the terms of 4.875% Senior Notes due November 2044.	8-K	4.2	11/17/2014	001-35349
4.7	Form of the terms of 3.900% Senior Notes due March 2028.	8-K	4.3	03/01/2018	001-35349
4.8	Indenture, dated as of April 9, 2020, among Phillips 66, as issuer, Phillips 66 Company, as guarantor, and U.S. Bank National Association, as trustee, in respect of senior debt securities of Phillips 66.	8-K	4.1	04/09/2020	001-35349
4.9	Form of the terms of 3.700% Senior Notes due 2023.	8-K	4.2	04/09/2020	001-35349
4.10	Form of the terms of 3.850% Senior Notes due 2025.	8-K	4.3	04/09/2020	001-35349
4.11	Form of the terms of 2.150% Senior Notes due 2030.	8-K	4.3	06/10/2020	001-35349
4.12	Form of the terms of 0.900% Senior Notes due 2024.	8-K	4.3	11/18/2020	001-35349
4.13	Form of the terms of 1.300% Senior Notes due 2026.	8-K	4.4	11/18/2020	001-35349
4.14	Form of the terms of 3.300% Senior Notes due 2052.	8-K	4.2	11/15/2021	001-35349

Exhibit Number	Exhibit Description	Incorporated by Reference		
		Exhibit Form Number	Filing Date	SEC File No.
10.1	Amended and Restated Credit Agreement dated as of July 30, 2019, among Phillips 66, Phillips 66 Company, the lenders party thereto, and JPMorgan Chase Bank, N.A., as administrative agent.	8-K	10.1 08/01/2019	001-35349
10.2	Third Amended and Restated Limited Liability Company Agreement of Chevron Phillips Chemical Company LLC, effective as of May 1, 2012.	10-Q	10.14 08/03/2012	001-35349
10.3	First Amendment to Third Amended and Restated Limited Liability Company Agreement of Chevron Phillips Chemical Company LLC, effective as of December 31, 2017.	10-K	10.6 02/23/2018	001-35349
10.4	Second Amendment to Third Amended and Restated Limited Liability Company Agreement of Chevron Phillips Chemical Company LLC, effective as of June 1, 2018.	10-Q	10.1 07/27/2018	001-35349
10.5	Third Amendment to the Third Amended and Restated Limited Liability Company Agreement of Chevron Phillips Chemical Company LLC.	10-Q	10.1 04/30/2021	001-35349
10.6	Indemnification and Release Agreement between ConocoPhillips and Phillips 66, dated April 26, 2012.	8-K	10.1 05/01/2012	001-35349
10.7	Intellectual Property Assignment and License Agreement between ConocoPhillips and Phillips 66, dated April 26, 2012.	8-K	10.2 05/01/2012	001-35349
10.8	Employee Matters Agreement between ConocoPhillips and Phillips 66, dated April 26, 2012.	8-K	10.4 05/01/2012	001-35349
10.9	Amendment to the Employee Matters Agreement by and between ConocoPhillips and Phillips 66, dated April 26, 2012.	10-Q	10.1 05/02/2013	001-35349
10.10	Transition Services Agreement between ConocoPhillips and Phillips 66, dated April 26, 2012.	8-K	10.5 05/01/2012	001-35349
10.11	2013 Omnibus Stock and Performance Incentive Plan of Phillips 66.**	DEF14A	App. A 03/27/2013	001-35349
10.12	Phillips 66 Key Employee Supplemental Retirement Plan.**	10-Q	10.15 08/03/2012	001-35349
10.13	First Amendment to the Phillips 66 Key Employee Supplemental Retirement Plan.**	10-K	10.18 02/22/2013	001-35349
10.14	Phillips 66 Amended and Restated Executive Severance Plan.**	10-Q	10.1 07/29/2016	001-35349
10.15	Phillips 66 Deferred Compensation Plan for Non-Employee Directors.**	10-Q	10.17 08/03/2012	001-35349

Exhibit Number	Exhibit Description	Incorporated by Reference			
		Form	Exhibit Number	Filing Date	SEC File No.
10.16	Phillips 66 Key Employee Deferred Compensation Plan-Title I. **	10-Q	10.18	08/03/2012	001-35349
10.17	Phillips 66 Key Employee Deferred Compensation Plan-Title II. **	10-Q	10.19	08/03/2012	001-35349
10.18	First Amendment to the Phillips 66 Key Employee Deferred Compensation Plan Title II. **	10-K	10.24	02/22/2013	001-35349
10.19	Phillips 66 Defined Contribution Make-Up Plan Title I. **	10-Q	10.20	08/03/2012	001-35349
10.20	Phillips 66 Defined Contribution Make-Up Plan Title II. **	10-K	10.26	02/22/2013	001-35349
10.21	First Amendment to the Phillips 66 Defined Contribution Make-Up Plan Title II. **	10-Q	10.1	04/30/2019	001-35349
10.22	Phillips 66 Key Employee Change in Control Severance Plan. **	10-K	10.27	02/22/2013	001-35349
10.23	First Amendment to Phillips 66 Key Employee Change in Control Severance Plan, Effective October 2, 2015. **	8-K	10.1	11/08/2013	001-35349
10.24	Annex to the Phillips 66 Nonqualified Deferred Compensation Arrangements. **	10-Q	10.23	08/03/2012	001-35349
10.25	Form of Stock Option Award Agreement under the 2013 Omnibus Stock and Performance Incentive Plan of Phillips 66. **	10-K	10.31	02/21/2020	001-35349
10.26	Form of Restricted Stock or Restricted Stock Unit Award Agreement under the 2013 Omnibus Stock and Performance Incentive Plan of Phillips 66. **	10-K	10.32	02/21/2020	001-35349
10.27	Form of Performance Share Unit Award Agreement under the 2013 Omnibus Stock and Performance Incentive Plan of Phillips 66. **	10-K	10.33	02/21/2020	001-35349
21*	List of Subsidiaries of Phillips 66.				
22*	List of Guarantor Subsidiaries.				
23*	Consent of Ernst & Young LLP, independent registered public accounting firm.				
31.1*	Certification of Chief Executive Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934.				
31.2*	Certification of Chief Financial Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934.				
32*	Certifications pursuant to 18 U.S.C. Section 1350.				

Exhibit Number	Exhibit Description	Incorporated by Reference			
		Form	Exhibit Number	Filing Date	SEC File No.
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 Schema Document.				
101.CAL*	Inline XBRL Calculation Linkbase Document.				
101.LAB*	Inline XBRL Labels Linkbase Document.				
101.PRE*	Inline XBRL Presentation Linkbase Document.				
101.DEF*	Inline XBRL Definition Linkbase Document.				
104*	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).				

* Filed herewith.

** Management contracts and compensatory plans or arrangements.

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.

PHILLIPS 66

Date: February 18, 2022

/s/ Greg C. Garland
Greg C. Garland
Chairman of the Board of Directors
and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below, as of February 18, 2022, by the following persons on behalf of the registrant and in the capacities indicated.

Signature

Title

/s/ Greg C. Garland
Greg C. Garland

Chairman of the Board of Directors
and Chief Executive Officer
(Principal executive officer)

/s/ Kevin J. Mitchell
Kevin J. Mitchell

Executive Vice President, Finance
and Chief Financial Officer
(Principal financial officer)

/s/ J. Scott Pruitt
J. Scott Pruitt

Vice President and Controller
(Principal accounting officer)

/s/ Gary K. Adams <i>Gary K. Adams</i>	Director
/s/ Julie L. Bushman <i>Julie L. Bushman</i>	Director
/s/ Denise R. Cade <i>Denise R. Cade</i>	Director
/s/ Lisa A. Davis <i>Lisa A. Davis</i>	Director
/s/ Charles M. Holley <i>Charles M. Holley</i>	Director
/s/ John E. Lowe <i>John E. Lowe</i>	Director
/s/ Denise L. Ramos <i>Denise L. Ramos</i>	Director
/s/ Douglas T. Terreson <i>Douglas T. Terreson</i>	Director
/s/ Glenn F. Tilton <i>Glenn F. Tilton</i>	Director
/s/ Marna C. Whittington <i>Marna C. Whittington</i>	Director

SUBSIDIARY LISTING OF PHILLIPS 66
At December 31, 2021

Company Name	Incorporation Location
Asamera Oil (US) Inc.	Montana
C.S. Land, Inc.	California
Central Retail Holdings LLC	Delaware
Douglas Oil Company of California	California
eFUEL, LLC	California
Gray Oak Holdings LLC	Delaware
JET Energy Trading GmbH	Germany
JET Petrol Limited	Northern Ireland
JET Petroleum Limited	England
JET Retail UK Limited	England
JET Tankstellen Austria GmbH	Austria
JET Tankstellen Deutschland GmbH	Germany
Kansas City Retail and Convenience LLC	Delaware
Kayo Oil Company	Delaware
KHQ LLC	Delaware
Linden Urban Renewal Limited Partnership	New Jersey
Merey Sweeny LLC	Delaware
OK CNG 5, LLC	Oklahoma
Phillips 66 Alliance Dock LLC	Delaware
Phillips 66 Alliance H2PL LLC	Delaware
Phillips 66 Aviation LLC	Delaware
Phillips 66 Canada Ltd.	Alberta
Phillips 66 Capital Holdings LLC	Delaware
Phillips 66 Carrier LLC	Delaware
Phillips 66 Central Europe Inc.	Delaware
Phillips 66 Communications Inc.	Delaware
Phillips 66 Company	Delaware
Phillips 66 Continental Holding GmbH	Germany
Phillips 66 CS Limited	England
Phillips 66 DAPL Holdings LLC	Delaware
Phillips 66 ETCO Holdings LLC	Delaware
Phillips 66 European Power Limited	England
Phillips 66 Export Terminal LLC	Delaware
Phillips 66 GmbH	Switzerland
Phillips 66 Gulf Coast Pipeline LLC	Delaware
Phillips 66 Gulf Coast Properties LLC	Delaware
Phillips 66 International Holdings Company	Delaware
Phillips 66 International Investments Ltd.	Cayman
Phillips 66 International Trading Pte. Ltd.	Singapore
Phillips 66 Investment Holdings LLC	Delaware

Phillips 66 Ireland Pension Trust Limited	Ireland
Phillips 66 LCR Isomerization LLC	Delaware
Phillips 66 Limited	England
Phillips 66 Partners Finance Corporation	Delaware
Phillips 66 Partners GP LLC	Delaware
Phillips 66 Partners Holdings LLC	Delaware
Phillips 66 Partners LP	Delaware
Phillips 66 Pension Plan Trustee Limited	England
Phillips 66 Pipeline LLC	Delaware
Phillips 66 Project Development Inc.	Delaware
Phillips 66 Sand Hills LLC	Delaware
Phillips 66 Southern Hills LLC	Delaware
Phillips 66 Spectrum Corporation	Delaware
Phillips 66 Stillwater Retail Corporation	Delaware
Phillips 66 Stillwater Retail One LLC	Delaware
Phillips 66 Stillwater Retail Two LLC	Delaware
Phillips 66 Sweeny Crude Export LLC	Delaware
Phillips 66 Sweeny Frac 2 LLC	Delaware
Phillips 66 Sweeny Frac LLC	Delaware
Phillips 66 Sweeny-Freeport 2 Pipeline LLC	Delaware
Phillips 66 Sweeny-Freeport LLC	Delaware
Phillips 66 Treasury Limited	England
Phillips 66 TS Limited	England
Phillips 66 UK Development Limited	England
Phillips 66 UK Funding Limited	England
Phillips 66 UK Holdings Limited	England
Phillips 66 WRB Partner LLC	Delaware
Phillips Chemical Holdings LLC	Delaware
Phillips Gas Company LLC	Delaware
Phillips Gas Company Shareholder, Inc.	Delaware
Phillips Utility Gas Corporation	Delaware
Phoenix Sub LLC	Delaware
Pioneer Investments Corp.	Delaware
Pioneer Pipe Line Company	Delaware
Qingdao Phillips 66 Energy Co. Ltd.	China
Radius Insurance Company	Cayman
Salt Lake Terminal Company	Delaware
Sentinel Transportation, LLC	Delaware
SHC Insurance Company	Texas
Spirit Insurance Company	Vermont
Sweeny Cogeneration LLC	Delaware
WesTTex 66 Pipeline LLC	Delaware
West Retail Holdings LLC	Delaware

Certain subsidiaries are not listed since, considered in the aggregate as a single subsidiary, they would not constitute a significant subsidiary at December 31, 2021.

LIST OF GUARANTOR SUBSIDIARIES

As of December 31, 2021, Phillips 66 Company, a corporation incorporated under the laws of the State of Delaware (the “Guarantor Subsidiary”), has guaranteed each of the senior unsecured debt securities issued by Phillips 66 listed below. Phillips 66 directly owns 100% of the Guarantor Subsidiary. The guarantees (1) are unsecured obligations of the Guarantor Subsidiary, (2) rank equally with all of its other unsecured and unsubordinated indebtedness, and (3) are full and unconditional and joint and several.

Senior Unsecured Debt Securities of Phillips 66 Guaranteed by the Guarantor Subsidiary

- 4.300% Senior Notes due April 2022
- 3.700% Senior Notes due April 2023
- 0.900% Senior Notes due February 2024
- 3.850% Senior Notes due April 2025
- 1.300% Senior Notes due February 2026
- 3.900% Senior Notes due March 2028
- 2.150% Senior Notes due December 2030
- 4.650% Senior Notes due November 2034
- 5.875% Senior Notes due May 2042
- 4.875% Senior Notes due November 2044
- 3.300% Senior Notes due March 2052

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the following Registration Statements:

- (1) Registration Statement (Form S-8 No. 333-181080), as amended, pertaining to the Phillips 66 Savings Plan,
- (2) Registration Statement (Form S-8 No. 333-188564) pertaining to the 2013 Omnibus Stock and Performance Incentive Plan of Phillips 66, and the Phillips 66 U.K. Share Incentive Plan,
- (3) Registration Statement (Form S-3 No. 333-232863) of Phillips 66 and Phillips 66 Company, and
- (4) Amendment No. 1 to the Registration Statement (Form S-4 No. 333-261605) of Phillips 66;

of our reports dated February 18, 2022, with respect to the consolidated financial statements of Phillips 66 and the effectiveness of internal control over financial reporting of Phillips 66 included in this Annual Report (Form 10-K) of Phillips 66 for the year ended December 31, 2021.

/s/ Ernst & Young LLP

Houston, Texas
February 18, 2022

CERTIFICATION

I, Greg C. Garland, certify that:

1. I have reviewed this Annual Report on Form 10-K of Phillips 66;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 18, 2022

/s/ Greg C. Garland

Greg C. Garland
Chairman of the Board of Directors and
Chief Executive Officer

CERTIFICATION

I, Kevin J. Mitchell, certify that:

1. I have reviewed this Annual Report on Form 10-K of Phillips 66;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 18, 2022

/s/ Kevin J. Mitchell

Kevin J. Mitchell

Executive Vice President, Finance and
Chief Financial Officer

CERTIFICATIONS PURSUANT TO 18 U.S.C. SECTION 1350

In connection with the Annual Report of Phillips 66 (the Company) on Form 10-K for the year ended December 31, 2021, as filed with the U.S. Securities and Exchange Commission on the date hereof (the Report), each of the undersigned hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to their knowledge:

- (1) The Report fully complies with the requirements of Sections 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 18, 2022

/s/ Greg C. Garland

Greg C. Garland

Chairman of the Board of Directors and
Chief Executive Officer

/s/ Kevin J. Mitchell

Kevin J. Mitchell

Executive Vice President, Finance and
Chief Financial Officer