



**Marathon
Petroleum Corporation**

2022 ANNUAL REPORT



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On the cover: Industrial Hygienist
Kristen Brickner working to protect
the health and safety of our people



FROM THE PRESIDENT AND CEO

Fellow Shareholders,

Throughout a highly volatile year in global energy markets, Marathon Petroleum Corporation (MPC) demonstrated significant progress on our three strategic pillars, and we delivered on our commitments to performance, optimization and value creation. Executing on our operating, commercial and financial objectives, combined with a strong macro-economic environment, led to superior total shareholder returns in 2022 of 87%. At the same time, we continued to deepen our environmental, social and governance (ESG) efforts to drive long-term benefits for our business and stakeholders.

In 2022, we leveraged structural improvements we made in our commercial and operational execution to meet robust customer demand and capture strong margin opportunities. Our commitment to safe, reliable and environmentally sound operations enabled us to run our refining system at 96% utilization for the year, which included operating at full utilization in the second quarter, when demand for the transportation fuels we manufacture was highest.

MPC generated \$16.4 billion of cash from operations in 2022. We returned nearly \$12 billion to shareholders through share repurchases during the year, bringing total repurchases between May 2021 and the end of 2022 to almost \$17 billion. Demonstrating our commitment to a secure, competitive and growing dividend, in November, we increased MPC's quarterly dividend by 30%.

Challenging ourselves to lead in sustainable energy, we made significant progress on our Martinez Renewables facility and further optimized our Dickinson Renewables facility; we added two substantial 2030 goals to our emissions reduction targets; and we set a new industry record for the number of refineries certified for superior energy efficiency performance in one year through the U.S. Environmental Protection Agency's (EPA) ENERGY STAR® program.



FROM THE PRESIDENT AND CEO

DEVELOPING ENDURING CAPABILITIES

In early 2020, we introduced our three strategic pillars: strengthening the competitive position of our assets, fostering a low-cost culture, and improving our commercial performance. Since then, they have become a foundational part of MPC's DNA, aligning our efforts to increase profitability and drive long-term value creation.

We continue to be committed to these three strategic pillars today, because they address foundational aspects of our business that are within our control. While there is more to do, I am very proud of our progress in these areas, which was reflected in our 2022 performance. We've achieved and sustained cost reductions while never compromising the safety of our employees or assets, made purposeful moves to strengthen our portfolio, and implemented commercial and operational improvements that can deliver incremental value into the future.

Importantly, while we've positioned ourselves for the future over the last few years, we've remained grounded in our Core Values, which guide us to hold steadfast in our commitment to safe and environmentally responsible operations, to find and create shared value, and to set and hold ourselves accountable to high expectations.

STRENGTHENING THE COMPETITIVE POSITION OF OUR ASSETS

In September, we completed the formation of our Martinez Renewables joint venture with Neste, which enhances the value of the project to convert our idled Martinez, California, refinery into a renewable fuels facility. The facility is expected to ramp up to produce 730 million gallons per year of renewable fuels by the end of 2023, with pretreatment capabilities expected to come online midyear 2023. At our Dickinson, North Dakota, renewable diesel facility, we optimized operations to accommodate more advantaged feedstocks, which lower the carbon intensity of the fuels we produce and further improve its economic potential.

In midstream, segment adjusted EBITDA grew 7% year over year, and the strength and stability of our logistics capabilities helped us navigate market fluctuations. MPLX advanced several organic growth projects in the Permian Basin and remained a source of growing distributions for MPC and other unitholders. In November, MPLX raised its quarterly distribution by 10%. At this current level, MPC is expected to receive approximately \$2 billion of annual distributions from MPLX.

CONTINUED CAPITAL AND COST DISCIPLINE

Our success embedding a low-cost culture across the company enabled us to sustain our previously achieved \$1.5 billion of structural cost reduction. We remain focused on achieving operational excellence by reducing costs within our control, improving efficiency, driving operational improvements and being disciplined in capital allocation. We also worked hard to mitigate higher energy input costs throughout the year, and we believe our sustained, structural cost reductions help us to more readily adapt to market fluctuations.

We continue to build upon our Focus on Energy (FOE) program, which uses key performance indicators to guide energy management and promote energy efficiency across our refineries. In 2022, FOE-related initiatives led to more than \$50 million in energy cost savings for the year, while avoiding 31,700 metric tons of carbon dioxide-equivalent emissions per month.

IMPROVING COMMERCIAL PERFORMANCE

Over the past 18 months, we have meaningfully changed our commercial approach across the company and strengthened our teams. To unlock value, we have empowered our people to optimize across our integrated system, more effectively leverage our scale and proximity to key supply sources and demand hubs, and improve product placement.

A near-term focus has been securing advantaged renewable feedstocks as we continue to advance our renewable fuels

production capabilities. This includes exploring joint venture opportunities and strategic alliances within the renewable fuels value chain, as well as looking to expand upon the partnerships we've built with Neste and ADM.

In June, our Green Bison Soy Processing joint venture with ADM began construction of North Dakota's first dedicated soybean processing plant. By the seasonal harvest of 2023, it is expected to begin supplying approximately 600 million pounds a year of locally advantaged, refined soybean oil exclusively to MPC, helping us further optimize feedstock sourcing for renewable diesel production at our Dickinson facility.

We continued to progress our Galveston Bay STAR project, which we expect to complete in the first quarter of 2023. The remaining scope of this strategic project is targeted to increase crude oil processing capacity by 40,000 barrels per calendar day, improve residual upgrading capacity by 17,000 barrels per calendar day, enhance diesel recovery, and enable the facility to process more advantaged crude oil.

OUR PATH TO LEADING IN SUSTAINABLE ENERGY

Across our integrated system, we are meeting the energy needs of today while investing in an energy-diverse future. Our approach to sustainability, which we apply across the components of ESG, is key to our success in this effort. We continue to focus on positioning MPC to lead in an energy-diverse world by strengthening the resiliency of our business through reducing our carbon footprint and conserving natural resources; innovating for the future by investing in renewables and emerging technologies; and embedding sustainability in decision-making and in how we engage our stakeholders.

To help drive advancement, we have set meaningful targets to reduce greenhouse gas (GHG) emissions, methane emissions and freshwater intensity. We believe our continued progress demonstrates a tangible

path to achieving these milestones. In 2022, we established a goal to reduce our absolute Scope 3, category 11 GHG emissions to 15% below 2019 levels by 2030, becoming the first large downstream company to set an absolute Scope 3 target. We also expanded our existing goal for reducing methane emissions intensity across our natural gas gathering and processing business, creating a new long-range target of lowering intensity 75% from 2016 levels by 2030.

Similarly, to ensure we have the diversity of thought necessary to shape our future, we continue to include a diversity, equity and inclusion (DE&I) component in the metrics that determine our annual bonus compensation. Established in 2021, we were the first U.S. independent refiner to link a DE&I metric to executive and employee compensation.

We also remain focused on being a good neighbor in our communities through meaningful relationships with key stakeholders to understand needs and concerns, define priorities and pursue shared goals. In 2022, the company invested more than \$20 million in the communities where we live and work as well as in the broader causes that united many of us, and our employees contributed more than \$4 million in additional support.

We continue to allocate significant growth capital to low carbon projects, particularly around increasing our production of renewable fuels and natural gas. In fact, MPC is projected to become one of the largest global producers of renewable diesel in early 2024, and MPLX assets currently process about 10% of the natural gas in the United States. MPC and MPLX are also actively involved in public-private alliances to explore and develop pathways for emerging opportunities around carbon capture, utilization and sequestration (CCUS), as well as hydrogen energy production and utilization.

LOOKING FORWARD in 2023, I'm more optimistic than ever about MPC's evolving role in meeting the

world's need for reliable, affordable and responsibly produced energy. We anticipate that demand recovery for our products will continue and global supply constraints will persist in 2023. Our strategic pillars and financial priorities remain foundational, supporting our resiliency through near-term economic and geopolitical uncertainties. We will continue to focus our attention on how we run the business, always striving to be well-positioned to create value for our stakeholders regardless of the market's tailwinds or turbulence.

Our goal is to position MPC as the refiner of choice, generating the most cash through cycle, and delivering superior returns to our shareholders, with our steadfast commitment to returning capital.

Our achievements are a testament to the skills, dedication and adaptability of our people, who are enthusiastic about the opportunities ahead for our company. Our workforce demonstrated tremendous effort in 2022 – to meet demand for our products, to safely maintain and operate our assets and to support many value-creating programs and strategies that are critical for our long-term success.

I am proud to lead MPC, and I am thankful and grateful for the work our people do each day to deliver value for our business and our shareholders. Thank you for supporting our company.

Sincerely,



Michael J. Hennigan
President and
Chief Executive Officer



**2.9
MILLION**

BARRELS PER CALENDAR
DAY OF CRUDE OIL
REFINING CAPACITY

852,000

BARRELS PER DAY OF
NATURAL GAS LIQUID
FRACTIONATION CAPACITY

**12
BILLION**

STANDARD CUBIC FEET
PER DAY OF NATURAL GAS
PROCESSING CAPACITY

**APPROX.
19,000**

MILES OF PIPELINE WE
OWN, LEASE OR HAVE AN
OWNERSHIP INTEREST IN

319

VESSELS AND BARGES
OWNED AND OPERATED
THROUGH MARINE BUSINESS

96%

REFINING UTILIZATION
IN 2022

**2.4
BILLION**

GALLONS OF RENEWABLE
FUEL DELIVERED IN 2022

**40.3
MILLION**

BARRELS OF TERMINAL
STORAGE CAPACITY

**2
STRONG
BRANDS**

MARATHON AND ARCO

**APPROX.
8,400**

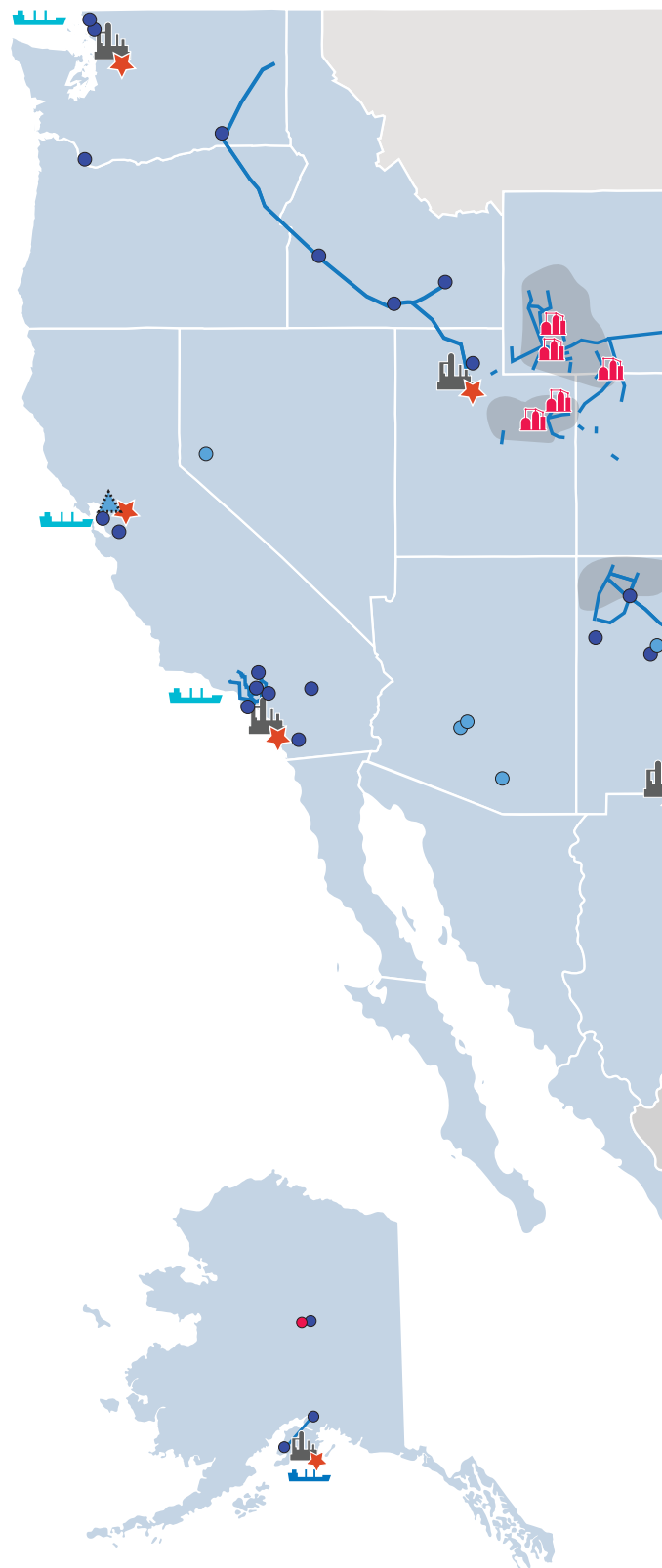
NORTH AMERICAN RETAIL &
MARKETING LOCATIONS

537

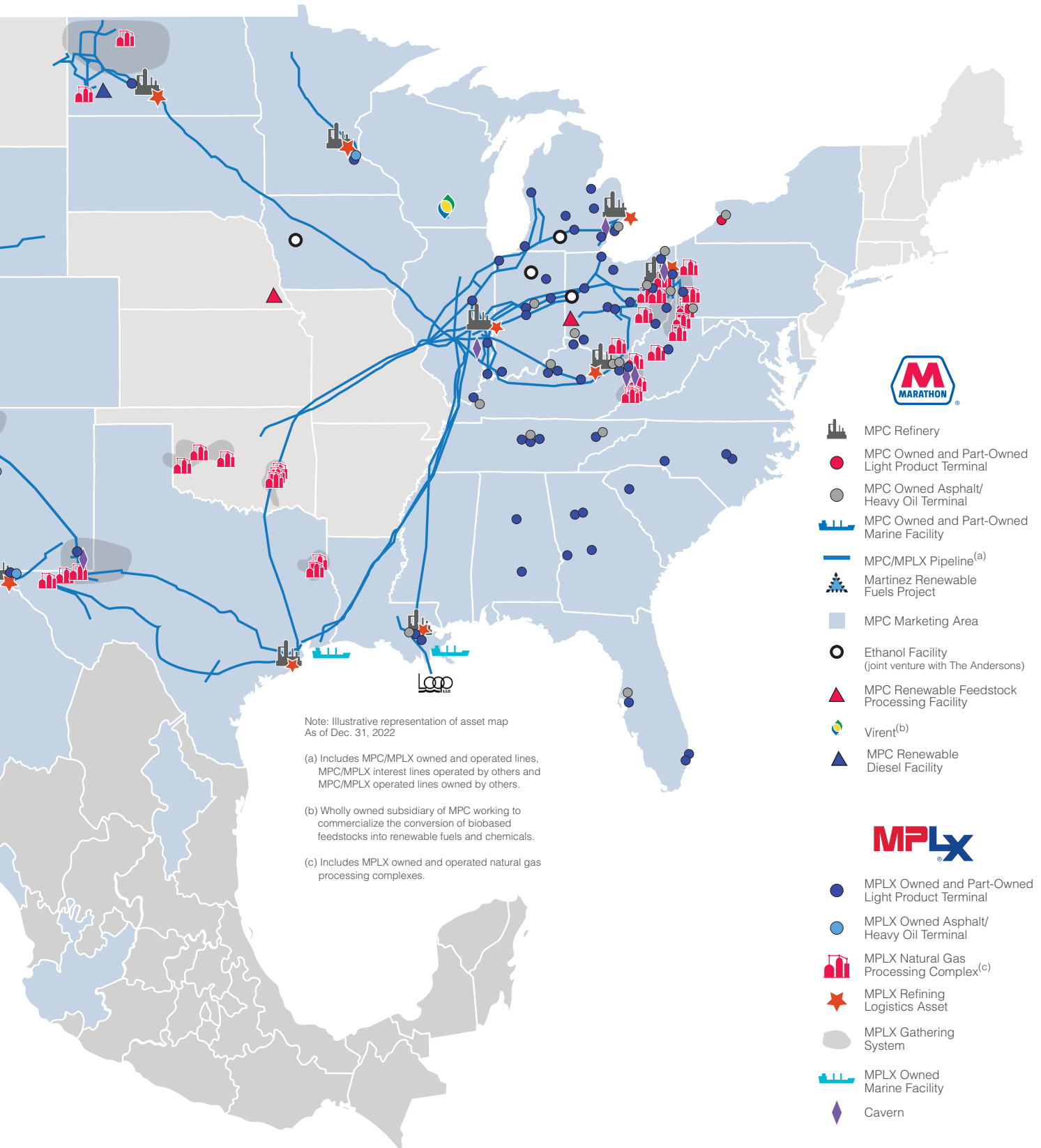
TRANSPORT TRUCKS OWNED
AND OPERATED

**APPROX.
12,800**

RAIL TANK CARS WE OWN,
LEASE AND OPERATE



OPERATIONS OVERVIEW



CORE VALUES

At Marathon Petroleum, we're in the business of enhancing life's possibilities.

Well-established values guide the way we treat each other and all our stakeholders, and we believe that how we perform our work is just as important as the work we perform.



SAFETY AND ENVIRONMENTAL STEWARDSHIP

- Protect our people and the world we all share
- Aim for an accident-free, incident-free workplace
- Commit to safe and environmentally responsible operations



INTEGRITY

- Set high expectations for ourselves and build trust in each other, with business partners, shareholders and the communities where we work and live
- Say what we're going to do — and then do it



RESPECT

- Treat everyone professionally, with courtesy, honesty and trust
- Consider how other people's ideas can improve what we do and encourage everyone to openly share their perspectives, ideas and concerns



INCLUSION

- Value diversity in culture, background, perspective and experiences
- Strive to provide our employees with a collaborative, supportive and inclusive work environment where they can maximize their full potential for personal and business success



COLLABORATION

- Actively partner with our stakeholders to find and create shared value, making a positive difference together
- Foster constructive, solution-oriented dialogues
- Genuinely listen to one another and seek out perspectives different from our own

DELIVERING ON OUR COMMITMENTS

Over the past year, our company rose to the challenge of meeting robust market demand, while continuing to make significant progress in our strategic areas of focus. Maintaining a strong balance sheet was foundational to our success and continues to underpin our financial priorities and enable execution of our strategy. Strong operating performance, improved commercial execution and disciplined capital management helped generate superior returns in 2022.

2022

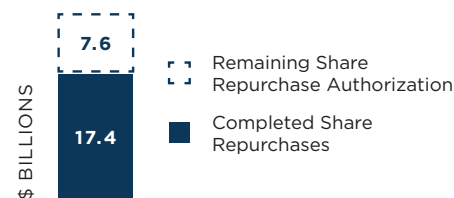
Refining Utilization: 96%
Full-year Capture*: 98%
Sustained Structural Cost Reductions: \$1.5 billion

*Capture reflects the percentage of our Refining & Marketing (R&M) Margin Indicator realized in our reported R&M Margin.

RETURNING CAPITAL TO SHAREHOLDERS

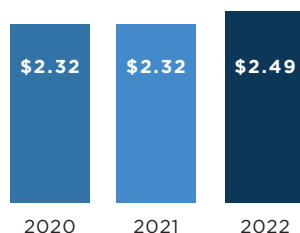
In October 2022, we fulfilled the \$15 billion return of capital commitment made at the time of our Speedway sale, having repurchased approximately 30% of outstanding shares as of the program commencement in May 2021. MPC repurchased more than \$17 billion of company shares between May 2021 and the end of January 2023. In addition, we increased our quarterly dividend by 30% in the fourth quarter.

SHARE BUYBACKS*



*Data reflects May 1, 2021 to Jan. 31, 2023

DIVIDENDS PER SHARE



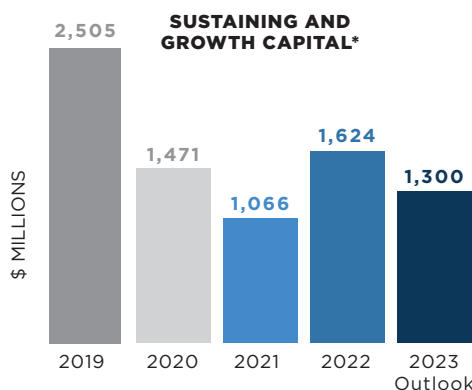
2022

Total Shareholder Return*: 87%
Total Capital Returned to Shareholders: \$13.2 billion
Operating Cash Flow: \$16.4 billion

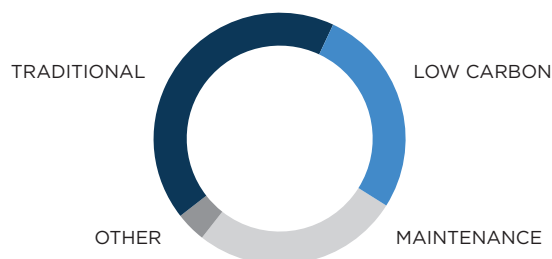
*Total shareholder return calculated as based on MPC's share price increase from Dec. 31, 2021 to Dec. 31, 2022 with dividends received reinvested in MPC shares.

DISCIPLINED CAPITAL SPENDING

- Consistent with the past few years, our projected capital spending amount for 2023 reflects our continuing focus on strict capital discipline. We remain steadfast in our commitment to maintain the safety, integrity and reliability of our assets and to evaluate growth and margin-enhancing opportunities.
- In September, we closed on our 50/50 Martinez Renewables joint venture with Neste, which enhances the value of the project by reducing MPC's capital commitment and improving the feedstock slate. The joint venture leverages both partners' strengths and creates a platform for future collaboration.



2023 CAPITAL SPENDING OUTLOOK



*Does not include capital spending associated with MPLX or capitalized interest. Capitalized spending for MPLX in 2023 is expected to be \$950 million net of reimbursements.

SUSTAINABILITY

We are challenging ourselves to lead in sustainable energy by strengthening the resiliency of our operations, innovating for the future, and embedding sustainability in our decision-making and how we engage our people and many stakeholders. We apply this approach across environmental, social and governance (ESG) components as we execute our strategic priorities and view it as a key to our success.

One indication of our progress is recognition we have received from prominent ESG rating organizations.



STRENGTHENING RESILIENCY

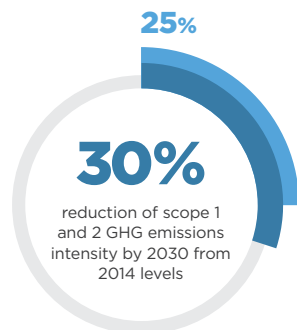
Over the past decade, and particularly over the past four years, we have diversified our portfolio and advanced a business model that supports the energy evolution and reductions in our overall carbon intensity. For example, when MPC formed in 2011, over 90% of our production was attributed to petroleum-based fuels. Since that time, we have diversified our business to include lower-carbon natural gas, renewable fuels, and petrochemical feedstocks, which now make up approximately 45% of our processed volumes.



In 2022, we were the first among U.S. independent refiners to establish a 2030 target to reduce absolute Scope 3 - Category 11 greenhouse gas (GHG) emissions. This goal added to our existing targets for reducing Scope 1 & 2 GHG emissions intensity, for lowering methane emissions intensity, and for lowering our freshwater withdrawal intensity. We maintained focus on devising and implementing improvements throughout the year to make steady progress toward achieving these objectives.

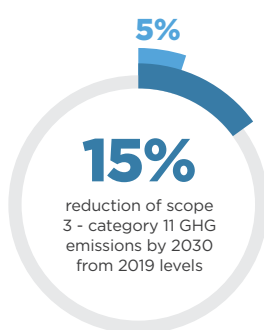
Scope 1 and 2 GHG Emissions Intensity⁽¹⁾
(tonnes CO₂e / thousand boe input)

● 2030 Goal ● Progress



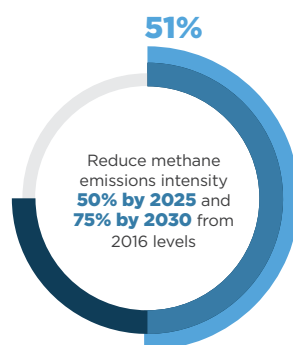
Absolute Scope 3 - Category 11 GHG Emissions⁽¹⁾
(tonnes CO₂e)

● 2030 Goal ● Progress



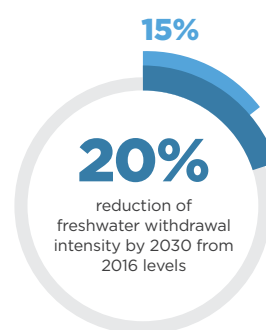
MPLX G&P Methane Emissions Intensity⁽¹⁾
(methane-scf / natural gas input-scf)

● 2030 Goal ● 2025 Goal ● Progress



Freshwater Withdrawal Intensity⁽¹⁾⁽²⁾
(megaliters / million boe input)

● 2030 Goal ● Progress



⁽¹⁾Additional information regarding our targets, including calculation methodologies, can be found in our 2022 Perspectives on Climate-Related Scenarios report, available at www.marathonpetroleum.com/sustainability

⁽²⁾Progress shown through 2021.



For the third consecutive year, our energy efficiency performance earned MPC the ENERGY STAR® Partner of the Year – Sustained Excellence Award from the U.S. Environmental Protection Agency (EPA). MPC also set an industry record with six refineries receiving 2022 EPA ENERGY STAR certifications – the most refineries to ever earn this honor from the EPA in a single year.

INNOVATING FOR THE FUTURE

MPC is one of the largest marketers of renewable fuels in the U.S., and we continue to sharpen our focus on reducing the carbon intensity of our operations and the products we manufacture while enhancing business performance. This includes striving to increase our production and delivery of renewable fuels, seeking ways to expand the use of renewable energy in our operations, and deploying emerging technologies that reduce environmental impact.

In June 2022, we broke ground on the Green Bison Soy Processing facility, a joint venture project with ADM, and the first facility of its kind in North Dakota. When complete, the approximately \$350 million complex will feature state-of-the-art automation technology with an anticipated processing capacity of 150,000 bushels of soybeans per day. By harvest 2023, the facility is expected to be producing approximately 600 million pounds of refined vegetable oil annually, which will be supplied exclusively to MPC as a feedstock for renewable diesel.



Martinez Renewable Fuels Project Benefits*

↓ **70% reduction**
in criteria air pollutants

↓ **60% reduction**
in GHG emissions

↓ **1 billion gallons less**
water used annually

In addition to completing the formation of our joint venture with Neste in September, the first phase of the Martinez renewable fuels facility has reached mechanical completion and is progressing start-up activities. The facility is expected to ramp up to produce 730 million gallons per year of renewable fuels by the end of 2023, with pretreatment capabilities expected to come online in the second half of 2023.

*Compared to prior operations as a petroleum refinery.

Our subsidiary Virent continued to demonstrate and optimize its proprietary BioForming® process, which is ready for commercialization. Virent is creating new market opportunities as an enabler for 100% sustainable aviation fuel (SAF) and renewable gasoline with longer-term options for renewable chemicals.



SUSTAINABILITY



BUILD A DIVERSE WORKFORCE

Streamlining our approach to managing diverse candidate slates
Establishing new relationships with diversity recruiting partners

CREATE A MORE INCLUSIVE CULTURE

Increasing support to employee networks to capture new and emerging opportunities
Enhancing our leadership development programs with an emphasis on inclusivity

CONTRIBUTE TO OUR THRIVING COMMUNITIES

Identifying and communicating goals for diverse supplier commitments
Further aligning our community investments with our DE&I commitments

EMBEDDING SUSTAINABILITY

Aligned with our commitment to protect the health and safety of our people and our communities; responsibly manage our social impacts; promote diversity, equity and inclusion (DE&I); and maintain accountable and transparent governance, we are intentional about how we include and embrace sustainability in decision-making and engagement.

Engaged and Energized Workforce

For our people to thrive and to attract the most highly skilled and diverse employee base, we seek to advance an inclusive culture where everyone feels valued and confident to be themselves. Our employee networks are fundamental to achieving this goal.

More than 4,000 employees belong to our 69 employee network chapters across 16 states. Focused on seven populations — Asian, Black, Disability, Hispanic, LGBTQ+, Veterans and Women — these networks are led by employees with guidance and active involvement from executive leadership sponsors, and serve to connect colleagues across the company, provide opportunities for personal and professional development and help facilitate community involvement.

Guided by a dedicated team and supported by leadership companywide, MPC's DE&I program is based on a four-pillar strategy of building awareness, increasing representation, ensuring success and applying measurement and accountability. To execute this strategy, in 2022 we focused on near-term action plans.

Stakeholder Engagement

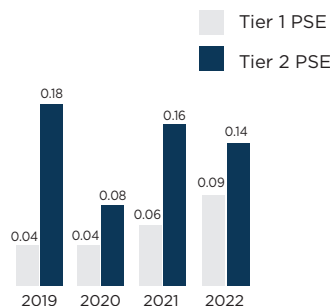
Creating shared value with our range of stakeholders – our people, business partners, customers, communities, governments and shareholders – starts with working to understand their goals, perspectives and concerns and incorporating their feedback into our business strategies. We have several dedicated forums that help to facilitate internal and external engagement on a variety of topics, including Community Advisory Panels, a Tribal Affairs Working Group and site-specific Stakeholder Engagement Plans. As our business and stakeholder interests evolve, we continue to adapt and expand our approach to engagement.

We strategically focus our charitable community investments on three core areas: workforce development, sustainability and thriving communities. Engaging with stakeholders from different backgrounds helps us pursue projects that create a positive, measurable impact and build partnerships across diverse organizations. We encourage employees to support the causes and community efforts that are important to them by matching their donations to eligible organizations and funding volunteer incentive awards. In 2022, the company invested more than \$20 million in the communities where we live and work as well as broader causes. Our employees contributed more than \$4 million in additional support. The company also raised more than \$3.5 million for charitable causes through fundraising events, many of which engaged our business partners, customers and suppliers.

Culture of Safety and Environmental Stewardship

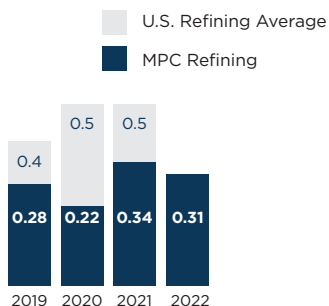
Shaped by our Core Values, we approach our work with the highest commitment to safety and a focus on caring for the environment. We are unwavering in our pursuit of an accident-free, incident-free workplace. Our personal safety performance continues to trend better than the U.S. refining average.

2022 Refining Process Safety Event (PSE) Rate Tier 1 & Tier 2
Events/200,000 hours



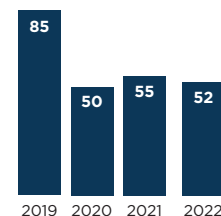
PSEs are unplanned or uncontrolled releases of a material from a process. The PSE rate is the count of events per 200,000 hours of work. Tier 1 PSEs are the most serious type.

2022 Refining OSHA Recordable Rate
Incidents/200,000 hours



Based on the U.S. Bureau of Labor Statistics data.

2022 Companywide Tier 3 & 4 Designated Environmental Incidents
Count



Designated Environmental Incidents include three categories of environmental incidents: releases to the environment (air, land or water), environmental permit exceedances and agency enforcement actions.

Accountable and Transparent Governance

Our corporate impacts, risks and opportunities are identified and managed by company leadership with oversight from our Board. An additional layer of oversight exists with our Enterprise Risk Management Program. ESG is embedded across multiple Board committees to which MPC's directors bring a range of backgrounds, critical skills, perspectives and expertise. As of year-end 2022, 10 of MPC's 11 directors were independent, as defined by New York Stock Exchange guidelines, with an independent chairman of the board. Each director attended 100% of board and committee meetings throughout the year. In January 2023, MPC announced a new independent board member, Toni Townes-Whitley.



As part of our broader commitment to transparent governance, we maintain regular dialogue with investor stewardship teams, and our ESG reporting and disclosures are aligned with TCFD, SASB, CDP and GRI Core.* We provide robust information on political engagement and lobbying through regular updates on our website. Additionally, MPC was the first independent U.S. downstream energy company to link a DE&I metric to compensation, and 20% of our annual cash bonus program is comprised of ESG metrics.

*CDP: Carbon Disclosure Project; GRI: Global Reporting Initiative; SASB: Sustainability Accounting Standards Board; TCFD: Task Force on Climate-related Financial Disclosures

BOARD OF DIRECTORS



John P. Surma

Retired Chairman and Chief Executive Officer, United States Steel Corporation

- *Non-Executive Chairman of the Board*



Abdulaziz F. Alkhayyal

Retired Senior Vice President, Industrial Relations, Saudi Aramco

- *Audit Committee Member*
- *Compensation and Organization Development Committee Member*
- *Sustainability and Public Policy Committee Vice Chair*



Evan Bayh

Senior Advisor, Apollo Global Management

- *Corporate Governance and Nominating Committee Member*
- *Sustainability and Public Policy Committee Chair*



Charles E. Bunch

Retired Chairman of the Board and Chief Executive Officer, PPG Industries, Inc.

- *Compensation and Organization Development Committee Member*
- *Corporate Governance and Nominating Committee Chair*



Jonathan Z. Cohen

Founder, Chief Executive Officer and President, Hepco Capital Management, LLC

- *Audit Committee Vice Chair*
- *Corporate Governance and Nominating Committee Member*



Edward G. Galante

Retired Senior Vice President and Management Committee Member, ExxonMobil Corporation

- *Compensation and Organization Development Committee Chair*
- *Sustainability and Public Policy Committee Member*



Michael J. Hennigan

President and Chief Executive Officer, Marathon Petroleum Corporation

- *Sustainability and Public Policy Committee Member*



Kim K.W. Rucker

Former Executive Vice President, General Counsel and Secretary, Andeavor

- *Sustainability and Public Policy Committee Member*



Frank M. Semple

Retired Chairman, President and Chief Executive Officer, MarkWest Energy Partners, L.P.

- *Audit Committee Member*
- *Compensation and Organization Development Committee Member*



J. Michael Stice

Professor, The University of Oklahoma

- *Audit Committee Member*
- *Corporate Governance and Nominating Committee Vice Chair*
- *Sustainability and Public Policy Committee Member*



Susan Tomasky

Retired President, AEP Transmission, American Electric Power

- *Audit Committee Chair*
- *Sustainability and Public Policy Committee Member*



Toni Townes-Whitley

Former President, U.S. Regulated Industries, Microsoft Corporation

- *Audit Committee Member*
- *Compensation and Organization Development Committee Member*



Steven A. Davis

In memoriam
1958 - 2022

LEADERSHIP TEAM



Michael J. Hennigan
President and
Chief Executive Officer,
and Director



Maryann T. Mannen
Executive Vice
President and
Chief Financial Officer



Timothy J. Aydt
Executive Vice
President, Refining



Suzanne Gagle
General Counsel and
Senior Vice President,
Government Affairs



Fiona C. Laird
Chief Human Resources Officer
and Senior Vice President,
Communications



C. Kristopher Hagedorn
Senior Vice President and
Controller



David R. Heppner
Senior Vice President,
Strategy and
Business Development



Rick D. Hessling
Senior Vice President,
Global Feedstocks



Brian K. Partee
Senior Vice President,
Global Clean Products



Ehren D. Powell
Senior Vice President and
Chief Digital Officer



James R. Wilkins
Senior Vice President,
Health, Environment, Safety
and Security



Molly R. Benson
Vice President, Chief Securities,
Governance & Compliance
Officer and Corporate Secretary



Kristina A. Kazarian
Vice President,
Finance and Investor Relations



Kelly S. Niese
Vice President,
Treasury



John J. Quaid
Executive Vice President and
Chief Financial Officer
MPLX GP LLC



Gregory S. Floerke
Executive Vice President and
Chief Operating Officer
MPLX GP LLC



Shawn M. Lyon
Senior Vice President,
Logistics and Storage
MPLX GP LLC



Kelly D. Wright
Vice President and Controller
MPLX GP LLC

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, 2022**

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 **001-35054**

Marathon Petroleum Corporation

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

27-1284632

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

539 South Main Street, Findlay, OH 45840-3229

(Address of principal executive offices) (Zip code)

(419) 422-2121

(Registrant's telephone number, including area code)

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, par value \$.01	MPC	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 and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

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

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

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to § 240.10D-1(b). ☐

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 as of June 30, 2022 was approximately \$42.1 billion. This amount is based on the closing price of the registrant's Common Stock on the New York Stock Exchange on June 30, 2022. Shares of Common Stock held by executive officers and directors of the registrant are not included in the computation. The registrant, solely for the purpose of this required presentation, has deemed its directors and executive officers to be affiliates.

There were 445,546,907 shares of Marathon Petroleum Corporation Common Stock outstanding as of February 16, 2023.

Documents Incorporated By Reference

Portions of the registrant's proxy statement relating to its 2023 Annual Meeting of Shareholders, to be filed with the Securities and Exchange Commission pursuant to Regulation 14A under the Securities Exchange Act of 1934, are incorporated by reference to the extent set forth in Part III, Items 10-14 of this Report.

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Unless otherwise stated or the context otherwise indicates, all references in this Annual Report on Form 10-K to "MPC," "us," "our," "we" or the "Company" mean Marathon Petroleum Corporation and its consolidated subsidiaries.

Glossary of Terms

Throughout this report, the following company or industry specific terms and abbreviations are used:

ANS	Alaska North Slope crude oil, an oil index benchmark price
ASC	Accounting Standards Codification
ASU	Accounting Standards Update
ATB	Articulated tug barges
barrel	One stock tank barrel, or 42 U.S. gallons liquid volume, used in reference to crude oil or other liquid hydrocarbons.
CARB	California Air Resources Board
CARBOB	California Reformulated Gasoline Blendstock for Oxygenate Blending
CBOB	Conventional Blending for Oxygenate Blending
EBITDA	Earnings Before Interest, Tax, Depreciation and Amortization (a non-GAAP financial measure)
EPA	U.S. Environmental Protection Agency
ESG	Environmental, social and governance
GAAP	Accounting principles generally accepted in the United States
GHG	Greenhouse gas
LCFS	Low Carbon Fuel Standard
LCM	Lower of cost or market
LIFO	Last in, first out
LLS	Louisiana Light Sweet crude oil, an oil index benchmark price
mbbls	Thousands of barrels
mbpd	Thousand barrels per day
mbpcd	Thousand barrels per calendar day
MEH	Magellan East Houston crude oil, an oil index benchmark price
MMcf/d	One million cubic feet of natural gas per day
MMBtu	One million British thermal units
NGL	Natural gas liquids, such as ethane, propane, butanes and natural gasoline
NYMEX	New York Mercantile Exchange
NYSE	New York Stock Exchange
OSHA	U. S. Occupational Safety and Health Administration
OTC	Over-the-Counter
PP&E	Property, plant and equipment
RFS2	Revised Renewable Fuel Standard program, as required by the Energy Independence and Security Act of 2007
RIN	Renewable Identification Number
SEC	U.S. Securities and Exchange Commission
SOFR	Secured overnight financing rate
STAR	South Texas Asset Repositioning
ULSD	Ultra-low sulfur diesel
USGC	U.S. Gulf Coast
UST	Underground storage tank
VIE	Variable interest entity
VPP	Voluntary Protection Program
WTI	West Texas Intermediate crude oil, an oil index benchmark price

Disclosures Regarding Forward-Looking Statements

This Annual Report on Form 10-K, particularly Item 1. Business, Item 1A. Risk Factors, Item 3. Legal Proceedings, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations and Item 7A. Quantitative and Qualitative Disclosures about Market Risk, includes forward-looking statements that are subject to risks, contingencies or uncertainties. You can identify forward-looking statements by words such as "anticipate," "believe," "commitment," "could," "design," "estimate," "expect," "forecast," "goal," "guidance," "intend," "may," "objective," "opportunity," "outlook," "plan," "policy," "position," "potential," "predict," "priority," "project," "prospective," "pursue," "seek," "should," "strategy," "target," "will," "would" or other similar expressions that convey the uncertainty of future events or outcomes.

Forward-looking statements include, among other things, statements regarding:

- future financial and operating results;
- ESG goals and targets, including those related to GHG emissions, diversity and inclusion and ESG reporting;
- our plans to achieve our ESG goals and targets and to monitor and report progress thereon;
- future levels of capital, environmental or maintenance expenditures, general and administrative and other expenses;
- expected savings from the restructuring or reorganization of business components;
- the success or timing of completion of ongoing or anticipated maintenance projects or transactions;
- business strategies, growth opportunities and expected investments;
- consumer demand for refined products, natural gas, renewables and NGLs;
- the timing, amount and form of future capital return transactions at MPC or MPLX; and
- the anticipated effects of actions of third parties such as competitors, activist investors, federal, foreign, state or local regulatory authorities, or plaintiffs in litigation.

Our forward-looking statements are not guarantees of future performance, and you should not rely unduly on them, as they involve risks, uncertainties and assumptions that we cannot predict. Material differences between actual results and any future performance suggested in our forward-looking statements could result from a variety of factors, including the following:

- general economic, political or regulatory developments, including inflation, changes in governmental policies relating to refined petroleum products, crude oil, natural gas, NGLs or renewables, or taxation;
- further impairments;
- the regional, national and worldwide availability and pricing of refined products, crude oil, natural gas, renewables, NGLs and other feedstocks;
- disruptions in credit markets or changes to credit ratings;
- the adequacy of capital resources and liquidity, including availability, timing and amounts of free cash flow necessary to execute business plans and to effect any share repurchases or to maintain or increase the dividend;
- the potential effects of judicial or other proceedings on the business, financial condition, results of operations and cash flows;
- volatility in or degradation of general economic, market, industry or business conditions as a result of the COVID-19 pandemic, other infectious disease outbreaks, natural hazards, extreme weather events, the military conflict between Russia and Ukraine, other conflicts, inflation, rising interest rates or otherwise;
- compliance with federal and state environmental, economic, health and safety, energy and other policies and regulations or enforcement actions initiated thereunder;
- adverse market conditions or other risks affecting MPLX;
- refining industry overcapacity or under capacity;
- changes in producer customers' drilling plans or in volumes of throughput of crude oil, natural gas, NGLs, refined products, other hydrocarbon-based products or renewables;
- non-payment or non-performance by our customers;
- changes in the cost or availability of third-party vessels, pipelines, railcars and other means of transportation for crude oil, natural gas, NGLs, feedstocks, refined products and renewables;
- the price, availability and acceptance of alternative fuels and alternative-fuel vehicles and laws mandating such fuels or vehicles;
- political and economic conditions in nations that consume refined products, natural gas, renewables and NGLs, including the United States and Mexico, and in crude oil producing regions, including the Middle East, Russia, Africa, Canada and South America;

- actions taken by our competitors, including pricing adjustments, the expansion and retirement of refining capacity and the expansion and retirement of pipeline capacity, processing, fractionation and treating facilities in response to market conditions;
- completion of pipeline projects within the United States;
- changes in fuel and utility costs for our facilities;
- accidents or other unscheduled shutdowns affecting our refineries, machinery, pipelines, processing, fractionation and treating facilities or equipment, means of transportation, or those of our suppliers or customers;
- acts of war, terrorism or civil unrest that could impair our ability to produce refined products, receive feedstocks or to gather, process, fractionate or transport crude oil, natural gas, NGLs, refined products or renewables;
- political pressure and influence of environmental groups and other stakeholders upon policies and decisions related to the production, gathering, refining, processing, fractionation, transportation and marketing of crude oil or other feedstocks, refined products, natural gas, NGLs or other hydrocarbon-based products or renewables;
- labor and material shortages;
- our ability to successfully achieve our ESG goals and targets within the expected timeframe, if at all;
- the costs, disruption and diversion of management's attention associated with campaigns commenced by activist investors;
- personnel changes; and
- the other factors described in Item 1A. Risk Factors.

We undertake no obligation to update any forward-looking statements except to the extent required by applicable law.

PART I

Item 1. Business

OVERVIEW

Marathon Petroleum Corporation ("MPC") has 135 years of history in the energy business, and is a leading, integrated, downstream energy company. We operate the nation's largest refining system with approximately 2.9 million barrels per day of crude oil refining capacity and believe we are one of the largest wholesale suppliers of gasoline and distillates to resellers in the United States. We distribute our refined products through one of the largest terminal operations in the United States and one of the largest private domestic fleets of inland petroleum product barges. In addition, our integrated midstream energy asset network links producers of natural gas and NGLs from some of the largest supply basins in the United States to domestic and international markets.

Our operations consist of two reportable operating segments: Refining & Marketing and Midstream. Each of these segments is organized and managed based upon the nature of the products and services it offers.

- Refining & Marketing – refines crude oil and other feedstocks, including renewable feedstocks, at our refineries in the Gulf Coast, Mid-Continent and West Coast regions of the United States, purchases refined products and ethanol for resale and distributes refined products, including renewable diesel, through transportation, storage, distribution and marketing services provided largely by our Midstream segment. We sell refined products to wholesale marketing customers domestically and internationally, to buyers on the spot market, to independent entrepreneurs who operate primarily Marathon® branded outlets and through long-term supply contracts with direct dealers who operate locations mainly under the ARCO® brand.
- Midstream – transports, stores, distributes and markets crude oil and refined products principally for the Refining & Marketing segment via refining logistics assets, pipelines, terminals, towboats and barges; gathers, processes and transports natural gas; and gathers, transports, fractionates, stores and markets NGLs. The Midstream segment primarily reflects the results of MPLX LP ("MPLX"). MPLX is a diversified, large-cap master limited partnership ("MLP") formed in 2012 that owns and operates midstream energy infrastructure and logistics assets and provides fuels distribution services. As of December 31, 2022, we owned the general partner of MPLX and approximately 65 percent of the outstanding MPLX common units.

Corporate History and Structure

MPC was incorporated in Delaware on November 9, 2009 in connection with an internal restructuring of Marathon Oil Corporation ("Marathon Oil"). On May 25, 2011, the Marathon Oil board of directors approved the spinoff of its Refining, Marketing & Transportation Business into an independent, publicly traded company, MPC, through the distribution of MPC common stock to the stockholders of Marathon Oil on June 30, 2011. Our common stock trades on the NYSE under the ticker symbol "MPC."

On October 1, 2018, we acquired Andeavor. Andeavor shareholders received in the aggregate approximately 239.8 million shares of MPC common stock valued at \$19.8 billion and \$3.5 billion in cash. Andeavor was a highly integrated marketing, logistics and refining company operating primarily in the Western and Mid-Continent United States. Our acquisition of Andeavor in 2018 substantially increased our geographic diversification and the scale of our assets, which provides increased opportunities to optimize our system.

On May 14, 2021, we completed the sale of Speedway, our company-owned and operated retail transportation fuel and convenience store business, to 7-Eleven, Inc. ("7-Eleven") for cash proceeds of \$21.38 billion (\$17.22 billion after cash-tax payments). This transaction resulted in a pretax gain of \$11.68 billion (\$8.02 billion after income taxes), after deducting the book value of the net assets and certain other adjustments.

OUR OPERATIONS

Refining & Marketing

Refineries

We currently own and operate refineries in the Gulf Coast, Mid-Continent and West Coast regions of the United States with an aggregate crude oil refining capacity of 2,898 mbpcd. During 2022, our refineries processed 2,761 mbpd of crude oil and 190 mbpd of other charge and blendstocks. During 2021, our refineries processed 2,621 mbpd of crude oil and 178 mbpd of other charge and blendstocks.

Our refineries include crude oil atmospheric and vacuum distillation, fluid catalytic cracking, hydrocracking, catalytic reforming, coking, desulfurization and sulfur recovery units. The refineries process a wide variety of condensate and light and heavy crude oils purchased from various domestic and foreign suppliers. We produce numerous refined products, ranging from transportation fuels, such as reformulated gasolines, blend-grade gasolines intended for blending with ethanol and ULSD fuel, to heavy fuel oil

and asphalt. Additionally, we manufacture NGLs and petrochemicals and propane. See the Refined Product Marketing section for further information about the products we produce.

Our refineries are integrated with each other via pipelines, terminals and barges to maximize operating efficiency. The transportation links that connect our refineries allow the movement of intermediate products between refineries to optimize operations, produce higher margin products and efficiently utilize our processing capacity. Also, shipping intermediate products between facilities during partial refinery shutdowns allows us to utilize processing capacity that is not directly affected by the shutdown work.

Following is a description of each of our refineries and their capacity by region.

Gulf Coast Region (1,189 mbpcd)

Garyville, Louisiana Refinery (596 mbpcd)

Our Garyville refinery, which is one of the largest refineries in the U.S., is located along the Mississippi River in southeastern Louisiana between New Orleans, Louisiana and Baton Rouge, Louisiana. The Garyville refinery is configured to process a wide variety of crude oils into gasoline, distillates, NGLs and petrochemicals, heavy fuel oil, asphalt and propane. The refinery has access to the export market and multiple options to sell refined products. Our Garyville refinery has earned designation as an OSHA VPP Star site.

Galveston Bay, Texas City, Texas Refinery (593 mbpcd)

Our Galveston Bay refinery is a combination of our former Texas City refinery and Galveston Bay refinery. The refinery is located on the Texas Gulf Coast southeast of Houston, Texas and can process a wide variety of crude oils into gasoline, distillates, NGLs and petrochemicals, heavy fuel oil and propane. The refinery has access to the export market and multiple options to sell refined products. Our cogeneration facility, which supplies the Galveston Bay refinery, currently has 1,055 megawatts of electrical production capacity and can produce 4.3 million pounds of steam per hour. Approximately 48 percent of the power generated in 2022 was used at the refinery, with the remaining electricity being sold into the electricity grid.

Mid-Continent Region (1,159 mbpcd)

Catlettsburg, Kentucky Refinery (291 mbpcd)

Our Catlettsburg refinery is located in northeastern Kentucky on the western bank of the Big Sandy River, near the confluence with the Ohio River. The Catlettsburg refinery processes sweet and sour crude oils, including production from the nearby Utica Shale, into gasoline, distillates, asphalt, NGLs and petrochemicals, propane and heavy fuel oil. Our Catlettsburg refinery has earned designation as an OSHA VPP Star site.

Robinson, Illinois Refinery (253 mbpcd)

Our Robinson refinery is located in southeastern Illinois. The Robinson refinery processes sweet and sour crude oils into gasoline, distillates, NGLs and petrochemicals, propane and heavy fuel oil. The Robinson refinery has earned designation as an OSHA VPP Star site.

Detroit, Michigan Refinery (140 mbpcd)

Our Detroit refinery is located in southwest Detroit. It is the only petroleum refinery currently operating in Michigan. The Detroit refinery processes sweet and heavy sour crude oils into gasoline, distillates, asphalt, NGLs and petrochemicals, propane and heavy fuel oil. Our Detroit refinery has earned designation as an OSHA VPP Star site.

El Paso, Texas Refinery (133 mbpcd)

Our El Paso refinery is located east of downtown El Paso. The El Paso refinery processes sweet and sour crudes into gasoline, distillates, heavy fuel oil, propane, asphalt and NGLs and petrochemicals.

St. Paul Park, Minnesota Refinery (105 mbpcd)

Our St. Paul Park refinery is located along the Mississippi River southeast of St. Paul Park. The St. Paul Park refinery processes sweet and heavy sour crude and manufactures gasoline, distillates, asphalt, propane, heavy fuel oil and NGLs and petrochemicals.

Canton, Ohio Refinery (100 mbpcd)

Our Canton refinery is located south of Cleveland, Ohio. The Canton refinery processes sweet and sour crude oils, including production from the nearby Utica Shale, into gasoline, distillates, asphalt, propane, NGLs and petrochemicals and heavy fuel oil. The Canton refinery has earned designation as an OSHA VPP Star site.

Mandan, North Dakota Refinery (71 mbpcd)

Our Mandan refinery is located outside of Bismarck, North Dakota. The Mandan refinery processes primarily sweet domestic crude oil from North Dakota and manufactures gasoline, distillates, propane, heavy fuel oil and NGLs and petrochemicals.

Salt Lake City, Utah Refinery (66 mbpcd)

Our Salt Lake City refinery is the largest in Utah and is located north of downtown Salt Lake City. The Salt Lake City refinery processes crude oil from Utah, Colorado, Wyoming and Canada to manufacture gasoline, distillates, heavy fuel oil, NGLs and petrochemicals and propane.

West Coast Region (550 mbpcd)**Los Angeles, California Refinery (363 mbpcd)**

Our Los Angeles refinery is located in Los Angeles County, near the Los Angeles Harbor. The Los Angeles refinery is the largest refinery on the West Coast and is a major producer of cleaner burning CARB fuels. The Los Angeles refinery processes heavy crude from California's San Joaquin Valley and Los Angeles Basin, as well as crudes from the Alaska North Slope, South America, West Africa and other international sources, and manufactures CARB gasoline and CARB diesel fuel, as well as conventional gasoline, distillates, NGLs and petrochemicals, heavy fuel oil and propane.

Anacortes, Washington Refinery (119 mbpcd)

Our Anacortes refinery is located north of Seattle on Puget Sound. The Anacortes refinery processes Canadian crude, domestic crude from North Dakota and the Alaska North Slope and international crudes to manufacture gasoline, distillates, heavy fuel oil, propane and NGLs and petrochemicals.

Kenai, Alaska Refinery (68 mbpcd)

Our Kenai refinery is located on the Cook Inlet, southwest of Anchorage. The Kenai refinery processes mainly Alaska domestic crude, domestic crude from North Dakota, along with limited international crude and manufactures distillates, gasoline, heavy fuel oil, asphalt, propane and NGLs and petrochemicals.

Planned maintenance activities, or turnarounds, requiring temporary shutdown of certain refinery operating units, are periodically performed at each refinery.

Refined Product Yields

The following table sets forth our refinery production by product group for each of the last three years.

<i>(mbpd)</i>	2022	2021	2020
Gasoline ^(a)	1,494	1,446	1,314
Distillates ^(a)	1,079	965	905
NGLs and petrochemicals ^(a)	178	250	244
Asphalt	89	91	81
Propane	70	52	51
Heavy fuel oil	73	31	28
Total	2,983	2,835	2,623

^(a) Product yields include renewable production.

Crude Oil Supply

We obtain the crude oil we refine through negotiated term contracts and purchases or exchanges on the spot market. Our term contracts generally have market-related pricing provisions. The following table provides information on our sources of crude oil for each of the last three years. The crude oil sourced outside of North America was acquired from various foreign national oil companies, production companies and trading companies.

<i>(mbpd)</i>	2022	2021	2020
United States	1,895	1,890	1,650
Canada	539	445	442
Middle East and other international	327	286	326
Total	2,761	2,621	2,418

Our refineries receive crude oil and other feedstocks and distribute our refined products through a variety of channels, including pipelines, trucks, railcars, ships and barges.

Renewable Fuels

The Dickinson, North Dakota, renewable fuels facility began operations at the end of 2020 and reached full design operating capacity in the second quarter of 2021. The facility has the capacity to produce 184 million gallons per year of renewable diesel from corn oil, soybean oil, fats and greases. The produced renewable diesel generates federal RINs and LCFS credits when sold in California or similar markets. These instruments are used to help meet our Renewable Fuel Standard and LCFS compliance obligations as a petroleum fuel producer.

On September 21, 2022, MPC closed on the formation of the Martinez Renewable Fuels joint venture (the “Martinez Renewable joint venture”), a partnership structured as a 50/50 joint venture with Neste Corporation (“Neste”). Converting the Martinez facility from refining petroleum to manufacturing renewable fuels signals our strong commitment to producing a substantial level of lower carbon-intensity fuels in California. The facility is expected to ramp up to producing 730 million gallons per year by the end of 2023, with pretreatment capabilities coming online in 2023.

Our wholly owned subsidiary, Virent Inc. (“Virent”), operates an advanced biofuels facility in Madison, Wisconsin at which it is working to commercialize a process for converting biobased feedstocks into renewable fuels and chemicals. During 2022, Virent continued to advance its technology to commercialization with demonstration activities in both the fuels and chemicals industries, including a demonstration flight with Gulfstream in a G650 aircraft in which one engine used 100 percent sustainable aviation fuel (“SAF”) that included Virent’s synthesized aromatic kerosene as a blending component to provide a 100 percent drop-in SAF that was fully compatible with today’s jet fuel specifications. Additional demonstration projects included the introduction of bio-based polyester fabrics to applications in the airline, fashion and outdoor clothing industries.

On December 14, 2021, we finalized the formation of a joint venture with Archer-Daniels-Midland Company (“ADM”) for the production of soybean oil to supply rapidly growing demand for renewable diesel fuel. The joint venture, which is named Green Bison Soy Processing, LLC, will own and operate a soybean processing complex in Spiritwood, North Dakota, with ADM owning 75 percent of the joint venture and MPC owning 25 percent. When complete in 2023, the Spiritwood facility will source and process local soybeans and supply the resulting soybean oil exclusively to MPC. The Spiritwood complex is expected to produce approximately 600 million pounds of refined soybean oil annually, enough feedstock for approximately 75 million gallons of renewable diesel per year.

We hold an ownership interest in ethanol production facilities in Albion, Michigan; Logansport, Indiana; Greenville, Ohio and Denison, Iowa. These plants have a combined ethanol production capacity of approximately 475 million gallons per year and are managed by our joint venture partner, The Andersons, Inc. (“The Andersons”).

Refined Product Sales

Our refined products are sold to independent retailers, wholesale customers, our brand jobbers and direct dealers. In addition, we sell refined products for export to international customers. As of December 31, 2022, there were 7,209 brand jobber outlets in 38 states, the District of Columbia and Mexico where independent entrepreneurs primarily maintain Marathon-branded outlets. We also have long-term supply contracts for 1,172 direct dealer locations primarily in Southern California, largely under the ARCO® brand. We believe we are one of the largest wholesale suppliers of gasoline and distillates to resellers and consumers within our market area.

The following table sets forth our refined product sales volumes by product group for each of the last three years.

<i>(mbpd)</i>	2022 ^(a)	2021 ^(a)	2020 ^(a)
Gasoline ^(b)	1,870	1,834	1,669
Distillates ^(b)	1,169	1,089	1,040
NGLs and petrochemicals ^(b)	221	293	323
Asphalt	89	94	86
Propane	93	76	69
Heavy fuel oil	66	39	35
Total	3,508	3,425	3,222

^(a) Refined product sales include volumes marketed directly to end-users and trading/supply volumes such as bulk sales to large unbranded resellers and other downstream companies. Marketed volumes directly to end users such as branded retail stations were 2,355 mbpd and 2,338 mbpd for the years ended December 31, 2022 and 2021, respectively.

^(b) Sales include renewable products.

Refined Product Sales Destined for Export

We sell gasoline, distillates and asphalt for export, primarily out of our Garyville, Galveston Bay, Anacortes and Los Angeles refineries. The following table sets forth our refined product sales destined for export by product group for the past three years.

<u>(mbpd)</u>	2022	2021	2020
Gasoline	105	154	110
Distillates	158	162	187
Other	52	55	43
Total	315	371	340

Gasoline and Distillates

We sell gasoline, gasoline blendstocks and distillates (including No. 1 and No. 2 fuel oils, jet fuel, kerosene, diesel and renewable diesel) to wholesale customers, branded jobbers, direct dealers and in the spot market. In addition, we sell diesel fuel and gasoline for export to international customers. The demand for gasoline and distillates is seasonal in many of our markets, with demand typically at its highest levels during the summer months.

NGLs and Petrochemicals

We are a producer and marketer of NGLs and petrochemicals. Product availability varies by refinery and includes, among others, propylene, xylene, butane, benzene, toluene and cumene. We market these products domestically to customers in the chemical, agricultural and fuel-blending industries. In addition, we produce fuel-grade coke at our Garyville, Detroit, Galveston Bay and Los Angeles refineries, which is used for power generation and in miscellaneous industrial applications, and anode-grade coke at our Los Angeles and Robinson refineries, which is used to make carbon anodes for the aluminum smelting industry.

Asphalt

We have refinery-based asphalt production capacity of up to 141 mbpcd, which includes asphalt cements, polymer-modified asphalt, emulsified asphalt, industrial asphalts and roofing flux. We have a broad customer base, including asphalt-paving contractors, resellers, government entities (states, counties, cities and townships) and asphalt roofing shingle manufacturers. We sell asphalt in the domestic and export wholesale markets via rail, barge and vessel.

Propane

We produce propane at all of our refineries. Propane is primarily used for home heating and cooking, as a feedstock within the petrochemical industry, for grain drying and as a fuel for trucks and other vehicles. Our propane sales are split approximately 80 percent and 20 percent between the home heating market and industrial/petrochemical consumers, respectively.

Heavy Fuel Oil

We produce and market heavy residual fuel oil or related components, including slurry, at all of our refineries. Heavy residual fuel oil is primarily used in the utility and ship bunkering (fuel) industries, though there are other more specialized uses of the product.

Terminals and Transportation

We transport, store and distribute crude oil, feedstocks and refined products through pipelines, terminals and marine fleets owned by MPLX and third parties in our market areas.

We own a fleet of transport trucks and trailers for the movement of refined products and crude oil. In addition, we maintain a fleet of leased and owned railcars for the movement and storage of refined products.

The locations and detailed information about our Refining & Marketing assets are included under Item 2. Properties and are incorporated herein by reference.

Competition, Market Conditions and Seasonality

The downstream petroleum business is highly competitive, particularly with regard to accessing crude oil and other feedstock supply and the marketing of refined products. We compete with a number of other companies to acquire crude oil for refinery processing and in the distribution and marketing of a full array of refined products.

We compete in four distinct markets for the sale of refined products—wholesale, including exports, spot, branded and retail distribution. Our marketing operations compete with numerous other independent marketers, integrated oil companies and high-volume retailers. We compete with companies in the sale of refined products to wholesale marketing customers, including private-brand marketers and large commercial and industrial consumers; companies in the sale of refined products in the spot market; and refiners or marketers in the supply of refined products to refiner-branded independent entrepreneurs. In addition, we compete with producers and marketers in other industries that supply alternative forms of energy and fuels to satisfy the requirements of our industrial, commercial and retail consumers.

Market conditions in the oil and gas industry are cyclical and subject to global economic and political events and new and changing governmental regulations. Our operating results are affected by price changes in crude oil, natural gas and refined products, as well as changes in competitive conditions in the markets we serve. Price differentials between sweet and sour crude oils, ANS, WTI and MEH crude oils and other market structure impacts also affect our operating results.

Demand for gasoline, diesel fuel and asphalt is higher during the spring and summer months than during the winter months in most of our markets, primarily due to seasonal increases in highway traffic and construction. As a result, the operating results for our Refining & Marketing segment for the first and fourth quarters may be lower than for those in the second and third quarters of each calendar year.

Midstream

The Midstream segment primarily includes the operations of MPLX, our sponsored MLP, and certain related operations retained by MPC.

MPLX

MPLX owns and operates a network of crude oil, natural gas and refined product pipelines and has joint ownership interests in crude oil, refined products and other pipelines. MPLX also owns and operates light products terminals, storage assets and maintains a fleet of owned and leased towboats and barges in support of fuels distribution on behalf of MPC. MPLX's assets also include natural gas gathering systems and natural gas processing and NGL fractionation complexes.

MPC-Retained Midstream Assets and Investments

We own four Jones Act product tankers, have ownership interests in several crude oil and refined products pipeline systems and pipeline companies and have an indirect ownership interest in an ocean vessel joint venture through our investment in Crowley Coastal Partners LLC ("Crowley Coastal Partners").

The locations and detailed information about our Midstream assets are included under Item 2. Properties and are incorporated herein by reference.

Competition, Market Conditions and Seasonality

Our Midstream operations face competition for natural gas gathering, crude oil transportation and in obtaining natural gas supplies for our processing and related services; in obtaining unprocessed NGLs for gathering, transportation and fractionation; and in marketing our products and services. Competition for natural gas supplies is based primarily on the location of gas gathering systems and gas processing plants, operating efficiency and reliability, residue gas and NGL market connectivity, the ability to obtain a satisfactory price for products recovered and the fees charged for the services supplied to the customer. Competition for oil supplies is based primarily on the price and scope of services, location of gathering/transportation and storage facilities and connectivity to the best priced markets. Competitive factors affecting our fractionation services include availability of fractionation capacity, proximity to supply and industry marketing centers, the fees charged for fractionation services and operating efficiency and reliability of service. Competition for customers to purchase our natural gas and NGLs is based primarily on price, credit and market connectivity. In addition, certain of our Midstream operations are subject to rate regulation, which affects the rates that our common carrier pipelines can charge for transportation services and the return we obtain from such pipelines.

Our Midstream segment can be affected by seasonal fluctuations in the demand for natural gas and NGLs and the related fluctuations in commodity prices caused by various factors such as changes in transportation and travel patterns and variations in weather patterns from year to year.

REGULATORY MATTERS

Our operations are subject to numerous laws and regulations, including those relating to the protection of the environment. Such laws and regulations include, among others, the Clean Air Act ("CAA") with respect to air emissions, the Clean Water Act ("CWA") with respect to water discharges, the Resource Conservation and Recovery Act ("RCRA") with respect to solid and hazardous waste treatment, storage and disposal, the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") with respect to releases and remediation of hazardous substances and the Oil Pollution Act of 1990 ("OPA-90") with respect to oil pollution and response. In addition, many states where we operate have similar laws. New laws are being enacted and regulations are being adopted on a continuing basis, and the costs of compliance with such new laws and regulations are very difficult to estimate until finalized.

For a discussion of environmental capital expenditures and costs of compliance, see Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations-Environmental Matters and Compliance Costs. For additional information regarding regulatory risks, see Item 1A. Risk Factors.

Rate Regulation

Some of our existing pipelines are considered interstate common carrier pipelines subject to regulation by the Federal Energy Regulatory Commission ("FERC") under the Interstate Commerce Act (the "ICA"), Energy Policy Act of 1992 ("EPA 1992") and the rules and regulations promulgated under those laws. The ICA and FERC regulations require that tariff rates for oil pipelines, a category that includes crude oil and petroleum product pipelines, be just and reasonable and the terms and conditions of service must not be unduly discriminatory. The ICA permits interested persons to challenge newly proposed tariff rates or terms and conditions of service, or any change to tariff rates or terms and conditions of service, and authorizes FERC to suspend the effectiveness of such proposal or change for a period of time to investigate. If, upon completion of an investigation, FERC finds that the new or changed service or rate is unlawful, it is authorized to require the carrier to refund the revenues in excess of the prior tariff collected during the pendency of the investigation. An interested person may also challenge existing terms and conditions of service or rates and FERC may order a carrier to change its terms and conditions of service or rates prospectively. Upon an appropriate showing, a shipper may also obtain reparations, from a pipeline, for damages sustained as a result of rates or terms which FERC deemed were not just and reasonable. Such reparation damages may accrue from the complaint through the final order and during the two years prior to the filing of a complaint.

EPA 1992 deemed certain interstate petroleum pipeline rates then in effect to be just and reasonable under the ICA. These rates are commonly referred to as "grandfathered rates." Our rates for interstate transportation service in effect for the 365-day period ending on the date of the passage of EPA 1992 were deemed just and reasonable and therefore are grandfathered. Subsequent changes to those rates are not grandfathered. New rates have since been established after EPA 1992 for certain pipelines.

FERC permits regulated oil pipelines to change their rates within prescribed ceiling levels that are tied to an inflation index. A carrier must, as a general rule, utilize the indexing methodology to change its rates. Cost-of-service ratemaking, market-based rates and settlement rates are alternatives to the indexing approach and may be used in certain specified circumstances to change rates.

Air

GHG Emissions

We believe the advancement of public policy intended to address GHG emissions, climate change, and climate adaptation will continue, with the potential for further regulations that could affect our operations. Currently, legislative and regulatory measures to address GHG emissions are in various phases of review, discussion or implementation. Reductions in GHG emissions could result in increased costs to (i) operate and maintain our facilities, (ii) install new emission controls at our facilities, (iii) capture the emissions from our facilities and (iv) administer and manage any GHG emissions programs, including acquiring emission credits or allotments.

In February 2021, the Interagency Working Group on the Social Cost of Greenhouse Gases published interim estimates of the social cost of carbon, methane and nitrous oxide (collectively, social cost of GHG emissions). In its proposed methane emission rules for the oil and natural gas sector, the EPA significantly increased the social cost of GHG emissions in the cost and benefit analysis for the proposed rule. A higher social cost could support more stringent GHG emission regulation in various rule makings from methane emissions to vehicle tailpipe emissions.

States are becoming active in regulating GHG emissions. These measures may include state actions to develop statewide or regional programs to report emissions and impose emission reductions. These measures may also include low-carbon fuel standards, such as the California program, or a state carbon tax. These measures could result in increased costs to operate and maintain our facilities, capital expenditures to install new emission controls and costs to administer any carbon trading or tax programs implemented. For example, California has enacted a cap-and-trade program. Much of the compliance costs associated with the California program are ultimately passed on to the consumer in the form of higher fuel costs. States are increasingly announcing aspirational goals to be net-zero carbon emissions by a certain date through both legislation and executive orders. To date, these states have not provided significant details as to achievement of these goals; however, meeting these aspirations will require a reduction in fossil fuel combustion and/or a mechanism to capture GHGs from the atmosphere. As a result, we cannot currently predict the impact of these potential regulations on our liquidity, financial position, or results of operations.

Other Air Emissions

In 2021, the EPA announced it is reconsidering the National Ambient Air Quality Standards ("NAAQS") for ozone and fine particulate matter. In January 2023, EPA published its proposal to lower the primary (health-based) fine particulate matter annual standard from its current level of 12.0 µg/m³ to within the range of 9.0 to 10.0 µg/m³. EPA has not yet announced its decision on reconsideration of the ozone NAAQS. Lowering of the NAAQS and subsequent designation as a nonattainment area could result in increased costs associated with, or result in cancellation or delay of, capital projects at our or our customers' facilities, or could require emission reductions that could result in increased costs to us or our customers. We cannot predict the effects of the various state implementation plan requirements at this time.

In California, the Governing Board for the South Coast Air Quality Management District (“SCAQMD”) adopted Rule 1109.1 in November 2021, which establishes Best Available Retrofit Control Technology (“BARCT”) oxides of nitrogen (“NOx”) and carbon monoxide (“CO”) emission limits for combustion equipment at petroleum refineries. These new requirements will replace the Regional Clean Air Incentives Market (“RECLAIM”) cap-and-trade program which has required a staged refinery-wide reduction of NOx emissions over the last several years and will result in additional emission reductions from our Los Angeles Refinery. Compliance with Rule 1109.1 is being phased in through 2032 and will result in increased costs to operate and maintain our Los Angeles Refinery.

Water

We maintain numerous discharge permits as required under the National Pollutant Discharge Elimination System program of the CWA and have implemented systems to oversee our compliance with these permits. In addition, we are regulated under OPA-90, which, among other things, requires the owner or operator of a tank vessel or a facility to maintain an emergency plan to respond to releases of oil or hazardous substances. OPA-90 also requires the responsible company to pay resulting removal costs and damages and provides for civil penalties and criminal sanctions for violations of its provisions. We operate tank vessels and facilities from which spills of oil and hazardous substances could occur. We have implemented emergency oil response plans for all of our components and facilities covered by OPA-90 and we have established Spill Prevention, Control and Countermeasures plans for all facilities subject to such requirements. Some coastal states in which we operate have passed state laws similar to OPA-90, but with expanded liability provisions, that include provisions for cargo owner responsibility as well as ship owner and operator responsibility.

On October 22, 2019, EPA and the United States Army Corps of Engineers (“Army Corps”) published a final rule to repeal the 2015 “Clean Water Rule: Definition of Waters of the United States” (“2015 Rule”), which amended portions of the Code of Federal Regulations to restore the regulatory text that existed prior to the 2015 Rule, effective December 23, 2019. The rule repealing the 2015 Rule has been challenged in multiple federal courts. On April 21, 2020, EPA and the Army Corps promulgated the Navigable Waters Protection Rule (“2020 Rule”) to define “waters of the United States.” The 2020 Rule has been vacated by a federal court. On December 7, 2021, EPA and the Army Corps issued a notice of proposed rulemaking with the stated purpose of repealing the 2020 Rule defining “waters of the United States” and adopting a rule largely based upon the definition adopted in 1986 with some revisions based upon subsequent United States Supreme Court rulings, in particular *Rapanos v. United States* (2006) which produced two different tests for determining “waters of the United States,” the relatively permanent waters and significant nexus tests. A broader definition could result in increased cost of compliance or increased capital costs for construction of new facilities or expansion of existing facilities.

In April 2020, the U.S. District Court in Montana vacated Nationwide Permit 12 (“NWP 12”), which authorizes the placement of fill material in “waters of the United States” for utility line activities as long as certain best management practices are implemented. The decision was ultimately appealed to the United States Supreme Court, which partially reversed the district court’s decision, temporarily reinstating NWP 12 for all projects except the Keystone XL oil pipeline. The Army Corps subsequently reissued its nationwide permit authorizations on January 13, 2021, by dividing the NWP that authorizes utility line activities (NWP 12) into three separate NWPs that address the differences in how different utility line projects are constructed, the substances they convey, and the different standards and best management practices that help ensure those NWPs authorize only those activities that have no more than minimal adverse environmental effects. A challenge of the 2021 authorization is currently pending before the U.S. District Court for the District of Columbia (“D.D.C.”), after being transferred from the U.S. District Court for the District of Montana in August 2022, and the plaintiffs request the court vacate and remand the 2021 authorization. Also, a petition has been filed with the Army Corps asking it to revoke the 2021 authorization. The Biden Administration could repeal or replace the 2021 authorization in a subsequent rulemaking. The repeal, vacatur, revocation or replacement of the 2021 authorization could impact pipeline construction and maintenance activities.

As part of our emergency response activities, we have used aqueous film forming foam (“AFFF”) containing per- and polyfluoroalkyl substances (“PFAS”) chemicals as a vapor and fire suppressant. At this time, AFFFs containing PFAS are the only proven foams that can prevent and control a flammable petroleum-based liquid fire involving a large storage tank or tank containment area.

In May 2016, EPA issued lifetime health advisory levels (“HALs”) and health effects support documents for two PFAS substances - Perfluorooctanoic Acid (“PFOA”) and Perfluorooctane Sulfonate (“PFOS”). These HALs were updated in June 2022, when EPA also issued HALs for two additional PFAS substances. In February 2019, EPA issued a PFAS Action Plan identifying actions it is planning to take to study and regulate various PFAS chemicals. EPA identified that it would evaluate, among other actions, (1) proposing national drinking water standards for PFOA and PFOS, (2) develop cleanup recommendations for PFOA and PFOS, (3) evaluate listing PFOA and PFOS as hazardous substances under CERCLA, and (4) conduct toxicity assessments for other PFAS chemicals. EPA did not issue any further regulations for PFAS under the Trump administration. In October 2021, EPA updated the 2019 PFAS Action Plan. On December 5, 2022, EPA issued to states and EPA regional offices a memorandum providing guidance for addressing PFAS discharges in wastewater and stormwater. Also, EPA has indicated it intends to issue a notice of proposed rulemaking in 2023 that will establish national drinking water standards for PFOS and PFOA. Congress may also take further action to regulate PFAS. We cannot currently predict the impact of potential statutes or regulations on our operations.

In addition, many states are actively proposing and adopting legislation and regulations relating to the use of AFFFs containing PFAS. Additionally, many states are using EPA HALs for PFOS and PFOA and some states are adopting and proposing state-specific drinking water and cleanup standards for various PFAS, including but not limited to PFOS and PFOA. We cannot currently predict the impact of these regulations on our liquidity, financial position, or results of operations.

Solid Waste

We continue to seek methods to minimize the generation of hazardous wastes in our operations. RCRA establishes standards for the management of solid and hazardous wastes. Besides affecting waste disposal practices, RCRA also addresses the environmental effects of certain past waste disposal operations, the recycling of wastes and the regulation of USTs containing regulated substances.

Remediation

We own or operate, or have owned or operated, certain convenience stores and other locations where, during the normal course of operations, releases of refined products from USTs have occurred. Federal and state laws require that contamination caused by such releases at these sites be assessed and remediated to meet applicable standards. Penalties or other sanctions may be imposed for noncompliance. The enforcement of the UST regulations under RCRA has been delegated to the states, which administer their own UST programs. Our obligation to remediate such contamination varies, depending on the extent of the releases and the applicable state laws and regulations. A portion of these remediation costs may be recoverable from the appropriate state UST reimbursement funds once the applicable deductibles have been satisfied. We also have ongoing remediation projects at a number of our current and former refinery, terminal and pipeline locations.

Claims under CERCLA and similar state acts have been raised with respect to the clean-up of various waste disposal and other sites. CERCLA is intended to facilitate the clean-up of hazardous substances without regard to fault. Potentially responsible parties for each site include present and former owners and operators of, transporters to and generators of the hazardous substances at the site. Liability is strict and can be joint and several. Because of various factors including the difficulty of identifying the responsible parties for any particular site, the complexity of determining the relative liability among them, the uncertainty as to the most desirable remediation techniques and the amount of damages and clean-up costs and the time period during which such costs may be incurred, we are unable to reasonably estimate our ultimate cost of compliance with CERCLA; however, we do not believe such costs will be material to our business, financial condition, results of operations or cash flows.

On September 6, 2022, EPA issued a notice of proposed rulemaking that would designate PFOS and PFOA as hazardous substances under CERCLA Section 102(a). Additional PFAS regulation could include the designation of PFAS as a RCRA hazardous waste. We cannot currently predict the impact of potential statutes or regulations on our remediation costs.

Vehicle and Fuel Requirements

Fuel Economy and GHG Emission Standards for Vehicles

The National Highway Traffic Safety Administration ("NHTSA") establishes corporate average fuel economy ("CAFE") standards for passenger cars and light trucks. In addition, EPA establishes carbon dioxide ("CO₂") emission standards for passenger cars and light trucks. At the direction of President Biden in his executive order setting a goal that 50 percent of all new passenger cars and light trucks sold in 2030 be zero emission vehicles, EPA and NHTSA have promulgated separate rules setting more stringent requirements for reductions through model year 2026. NHTSA's amended CAFE standards would increase in stringency from model year 2023 levels by eight percent annually for model years 2024-2025 and ten percent annually for model year 2026. EPA's revised model year 2023-2026 CO₂ emission standards, which were finalized in December 2021, result in average fuel economy of 40 mpg in model year 2026. The NHTSA and EPA regulations have been challenged in court. Higher CAFE and CO₂ emission standards for cars and light trucks reduce demand for our transportation fuels.

In addition, California may establish per its Clean Air Act waiver authority different standards that could apply in multiple states. EPA has issued a rule that reinstates California's waiver for its Advanced Clean Car I program, which includes requirements for zero emission vehicle sales through 2025. California's governor has also issued an executive order requiring sales of all new passenger vehicles in the state be zero-emission by 2035. The California Air Resources Board followed this executive order by finalizing its Advanced Clean Car II regulation, which bans the sale of internal combustion engine vehicles in California in 2035. Other states have issued, or may issue, zero emission vehicle mandates.

Renewable Fuels Standards and Low Carbon Fuel Standards

Pursuant to the Energy Policy Act of 2005 and the EISA, Congress established a Renewable Fuel Standard ("RFS") program that requires annual volumes of renewable fuel be blended into domestic transportation fuel. The statutory volumes apply through calendar year 2022. When EPA promulgates the annual renewable fuel volume obligations, EPA may reduce the statutory amount of renewable fuel that must be blended using its waiver or reset authority. After calendar year 2022, the statute gives EPA the authority to set the annual volumes. EPA has proposed annual volumes for 2023-2025 that increase the volume of renewable fuel that must be blended year over year. The greatest increase in annual volumes arises from EPA's proposal to approve a process in which electricity generated from renewable biomass used to fuel vehicles can generate a Renewable Identification Number ("eRIN") under the RFS.

There is currently no regulatory method for verifying the validity of most RINs sold on the open market. We have developed a RIN integrity program to vet the RINs that we purchase, and we incur costs to audit RIN generators. Nevertheless, if any of the RINs that we purchase and use for compliance are found to be invalid, we could incur costs and penalties for replacing the invalid RINs.

In addition to the federal Renewable Fuel Standards, certain states have, or are considering, promulgation of state renewable or low carbon fuel standards. For example, California began implementing its LCFS in January 2011. In September 2015, the CARB approved the re-adoption of the LCFS, which became effective on January 1, 2016, to address procedural deficiencies in the way the original regulation was adopted. The LCFS was amended again in 2018 with the current version targeting a 20 percent reduction in fuel carbon intensity from a 2010 baseline by 2030. CARB is currently holding a series of workshops to discuss potential changes to the LCFS, including increasing the stringency of the carbon intensity targets for 2030 and beyond. We incur costs to comply with LCFS programs, and these costs may increase if the cost of LCFS credits increases.

In sum, the RFS has required, and may in the future continue to require, additional capital expenditures or expenses by us to accommodate increased renewable fuels use. We may experience a decrease in demand for refined products due to an increase in combined fleet mileage or due to refined products being replaced by renewable fuels. Demand for our refined products also may decrease as a result of low carbon fuel standard programs or electric vehicle mandates.

Safety Matters

We are subject to oversight pursuant to the federal Occupational Safety and Health Act, as amended ("OSH Act"), as well as comparable state statutes that regulate the protection of the health and safety of workers. We believe that we have conducted our operations in substantial compliance with regulations promulgated pursuant to the OSH Act, including general industry standards, record-keeping requirements and monitoring of occupational exposure to regulated substances.

We are also subject at regulated facilities to the Occupational Safety and Health Administration's Process Safety Management ("PSM") and EPA's Risk Management Program ("RMP") requirements, which are intended to prevent or minimize the consequences of catastrophic releases of toxic, reactive, flammable or explosive chemicals. EPA has proposed revisions to its RMP regulation. The proposed revisions include a requirement that refineries with hydrofluoric acid alkylation units perform a safer technologies and alternatives analysis as part of the process hazard analysis and to document the feasibility of inherent safety measures. The application of these regulations can result in increased compliance expenditures.

In general, we expect industry and regulatory safety standards to become more stringent over time, resulting in increased compliance expenditures. While these expenditures cannot be accurately estimated at this time, we do not expect such expenditures will have a material adverse effect on our results of operations.

The DOT has adopted safety regulations with respect to the design, construction, operation, maintenance, inspection and management of our pipeline assets. These regulations contain requirements for the development and implementation of pipeline integrity management programs, which include the inspection and testing of pipelines and the correction of anomalies. These regulations also require that pipeline operation and maintenance personnel meet certain qualifications and that pipeline operators develop comprehensive spill response plans.

Tribal Lands

Various federal agencies, including EPA and the Department of the Interior, along with certain Native American tribes, promulgate and enforce regulations pertaining to oil and gas operations on Native American tribal lands where we operate. These regulations include such matters as lease provisions, drilling and production requirements, and standards to protect environmental quality and cultural resources. In addition, each Native American tribe is a sovereign nation having the right to enforce certain laws and regulations and to grant approvals independent from federal, state and local statutes and regulations. These laws and regulations may increase our costs of doing business on Native American tribal lands and impact the viability of, or prevent or delay our ability to conduct, our operations on such lands.

TRADEMARKS, PATENTS AND LICENSES

Our Marathon and ARCO trademarks are material to the conduct of our refining and marketing operations. We currently hold a number of U.S. and foreign patents and have various pending patent applications. Although in the aggregate our patents and licenses are important to us, we do not regard any single patent or license or group of related patents or licenses as critical or essential to our business as a whole. In general, we depend on our technological capabilities and the application of know-how rather than patents and licenses in the conduct of our operations.

HUMAN CAPITAL

We believe our employees are our greatest asset of strength, and our culture reflects the quality of individuals across our workforce. Our collaborative efforts, which include fostering an inclusive environment, providing broad-based development and mentorship opportunities, recognizing and rewarding accomplishments and offering benefits that support the well-being of our employees and their families, contribute to increased engagement and fulfilling careers. Empowering our people and prioritizing

accountability are also key components for developing MPC's high-performing culture, which is critical to achieving our strategic vision.

Employee Profile

As of December 31, 2022, we employed approximately 17,800 people in full-time and part-time roles. Many of these employees provide services to MPLX, for which we are reimbursed in accordance with employee service agreements. Approximately 3,755 of our employees are covered by collective bargaining agreements.

Safety

We are committed to safe operations to protect the health and safety of our employees, contractors and communities. Our commitment to safe operations is reflected in our safety systems design, our well-maintained equipment and by learning from our incidents. Part of our effort to promote safety includes our Operational Excellence Management System, which expands on the RC14001® scope, incorporates a Plan-Do-Check-Act continual improvement cycle, and aligns with ISO 9001, incorporating quality and an increased stakeholder and process focus. Together, these components of our safety management system provide us with a comprehensive approach to managing risks and preventing incidents, illnesses and fatalities. Additionally, our annual cash bonus program metrics include several employee, process and environmental safety metrics.

In 2022, MPC rolled back a majority of its COVID protocols which included the return of all employees to their respective work locations. We continue to monitor the situation and adapt our COVID protocols as appropriate.

Talent Management

Executing our strategic vision requires that we attract and retain the best talent. Recruiting and retention success requires that we effectively nurture new employees, providing opportunities for long-term engagement and career advancement. We also appropriately reward high-performers and offer competitive benefits. Our Talent Acquisition team consists of three segments: Executive Recruiting, Experienced Recruiting and University Recruiting. The specialization within each group allows us to specifically address MPC's broad range of current and future talent needs, as well as devote time and attention to candidates during the hiring process. We value diverse perspectives in the workforce, and accordingly we seek candidates with a variety of backgrounds and experience. Our primary source of full-time, entry-level new hires is our intern/co-op program. Through our university recruiters, we offer college students who have completed their freshman year the opportunity to participate in our hands-on programs focused in areas of finance and accounting, marketing, engineering and IT.

We provide a broad range of leadership training opportunities to support the development of leaders at all levels. Our programs, which are offered across the organization are a blended approach of business and leadership content, with many featuring external faculty. We utilize various learning modalities, such as visual, audio, print, tactile, interactive, kinesthetic, experiential and leader-teaching-leader to address and engage different learning styles. We believe networking and access to our executive team are a key leadership success factor, and we incorporate these opportunities into all of our programs.

Compensation and Benefits

To ensure we are offering competitive pay packages in our recruitment and retention efforts, we annually benchmark compensation, including base salaries, bonus levels and long-term incentive targets. Our annual bonus program is a critical component of our compensation, as it provides individual rewards for MPC's achievement against preset financial and ESG goals, encouraging a sense of employee ownership. Employees in our senior leader pay grades, as well as most other leaders, receive long-term incentive awards annually to align their compensation to the interests of MPC shareholders and MPLX unitholders.

We offer comprehensive benefits that are also benchmarked annually, including medical, dental and vision insurance for our employees, their spouses or domestic partners, and their dependents. We also provide retirement programs, life insurance, education assistance, family assistance, short-term disability and paid vacation and sick time. In addition, we provide generous paid parental leave benefits for birth mothers and nonbirth parents; and parents who both work for the Company are each eligible for the benefit. Further, we have a substantial accrual cap for vacation banks and also award a significant number of college and trade school scholarships to high school senior children of our employees through the Marathon Petroleum Scholars Program. Both full-time and part-time employees are eligible for these benefits.

Inclusion

Our company-wide Diversity, Equity and Inclusion ("DE&I") program is guided by a dedicated DE&I team led by our Vice President Talent Acquisition and Diversity, Equity & Inclusion and supported by leadership company-wide. Our program is based on our four-pillar DE&I strategy of building awareness, increasing representation, ensuring success, and measurement and accountability. To execute our strategy, our near-term action plans are focused on building a diverse workforce, creating a more inclusive culture, and contributing to our thriving communities.

We have employee networks focusing on seven populations: Asian, Black, Disability, Hispanic, LGBTQ+, Veterans and Women. Our employee networks have approximately 60 chapters across the company and all networks encourage ally membership. This broad support extends also to our leaders throughout MPC, with each employee network represented by two active executive

sponsors. The sponsors form several councils that meet regularly to share updates, gain alignment, build deeper connections across networks and pursue collaboration ideas. Our employee networks not only provide opportunities for our employees to make meaningful and supportive connections, but they also serve a significant role in our DE&I strategy.

EXECUTIVE OFFICERS

Following is information about the executive officers and corporate officers of MPC:

Name	Age as of February 1, 2023	Position with MPC
Michael J. Hennigan	63	President and Chief Executive Officer
Maryann T. Mannen	60	Executive Vice President and Chief Financial Officer
Timothy J. Aydt	59	Executive Vice President, Refining
Suzanne Gagle	57	General Counsel and Senior Vice President, Government Affairs
Fiona C. Laird*	61	Chief Human Resources Officer and Senior Vice President, Communications
C. Kristopher Hagedorn	46	Senior Vice President and Controller
David R. Heppner*	56	Senior Vice President, Strategy and Business Development
Rick D. Hessling*	56	Senior Vice President, Global Feedstocks
Brian K. Partee*	49	Senior Vice President, Global Clean Products
Ehren D. Powell*	43	Senior Vice President and Chief Digital Officer
James R. Wilkins*	56	Senior Vice President, Health, Environment, Safety and Security
Molly R. Benson*	56	Vice President, Chief Securities, Governance & Compliance Officer and Corporate Secretary
Kristina A. Kazarian*	40	Vice President, Finance and Investor Relations
Kelly S. Niese*	43	Vice President, Treasury
Gregory S. Floerke	59	MPLX Executive Vice President and Chief Operating Officer
Shawn M. Lyon	55	MPLX Senior Vice President, Logistics & Storage

* Corporate officer.

Mr. Hennigan was appointed President and Chief Executive Officer effective March 2020, and as a member of the Board of Directors effective April 2020. He also has served as Chairman of the Board of MPLX since April 2020, as Chief Executive Officer since November 2019 and as President since June 2017. Before joining MPLX, Mr. Hennigan was President, Crude, NGL and Refined Products, of the general partner of Energy Transfer Partners L.P., an energy service provider. He was President and Chief Executive Officer of Sunoco Logistics Partners L.P., an oil and gas transportation, terminalling and storage company, from 2012 to 2017, President and Chief Operating Officer beginning in 2010, and Vice President, Business Development, beginning in 2009.

Ms. Mannen was appointed Executive Vice President and Chief Financial Officer effective January 25, 2021 and as a member of MPLX's Board of Directors effective February 1, 2021. Before joining MPC, she served as Executive Vice President and Chief Financial Officer of TechnipFMC (a successor to FMC Technologies, Inc.), a global leader in subsea, onshore/offshore, and surface projects for the energy industry, since 2017, having previously served as Executive Vice President and Chief Financial Officer of FMC Technologies, Inc. since 2014, Senior Vice President and Chief Financial Officer since 2011, and in various positions of increasing responsibility with FMC Technologies, Inc. since 1986.

Mr. Aydt was appointed Executive Vice President, Refining, effective October 2022, having previously served as Executive Vice President and Chief Commercial Officer of MPLX since August 2020. Prior to his 2020 appointment, he served as Vice President, Business Development, beginning in November 2018, Vice President, Operations, and President of Marathon Pipe Line LLC beginning in January 2017, MPC's Terminal, Transport and Rail General Manager beginning in 2013, and Project Director for the \$2.2 billion Detroit Heavy Oil Upgrade Project beginning in 2008.

Ms. Gagle was appointed General Counsel and Senior Vice President, Government Affairs, effective February 24, 2021. Prior to this appointment, she served as General Counsel beginning in March 2016, Assistant General Counsel, Litigation and Human Resources, beginning in 2011, Senior Group Counsel, Downstream Operations, beginning in 2010, and Group Counsel, Litigation, beginning in 2003.

Ms. Laird was appointed Chief Human Resources Officer and Senior Vice President, Communications, effective February 24, 2021. Prior to this appointment, she served as Chief Human Resources Officer beginning in October 2018, having previously served as Chief Human Resources Officer at Andeavor beginning in February 2018. Before joining Andeavor, Ms. Laird was Chief Human Resources and Communications Officer for Newell Brands, a global consumer goods company, beginning in May 2016 and Executive Vice President, Human Resources, for Unilever, a global consumer goods company, beginning in 2011.

Mr. Hagedorn was appointed Senior Vice President and Controller effective September 2021. Prior to this appointment, he served as MPLX's Vice President and Controller since October 2017. Before joining MPLX, he was Vice President and Controller at CONSOL Energy Inc., a Pennsylvania-based natural gas and coal producer and exporter, beginning in 2015, Assistant Controller beginning in 2014 and Director, Financial Accounting, beginning in 2012. Mr. Hagedorn was Chief Accounting Officer for CONE Midstream Partners LP, a publicly traded master limited partnership with gathering assets in the Appalachian Basin, from 2014 to 2015. Previously, he served in positions of increasing responsibility with PricewaterhouseCoopers LLP beginning in 1998.

Mr. Heppner was appointed Senior Vice President, Strategy and Business Development, effective February 24, 2021. Prior to this appointment, he served as Vice President, Commercial and Business Development, beginning in October 2018, Senior Vice President of Engineering Services and Corporate Support of Speedway LLC beginning in 2014, and Director, Wholesale Marketing, beginning in 2010.

Mr. Hessling was appointed Senior Vice President, Global Feedstocks, effective February 24, 2021. Prior to this appointment, he served as Senior Vice President, Crude Oil Supply and Logistics, beginning in October 2018, Manager, Crude Oil & Natural Gas Supply and Trading, beginning in 2014, and Crude Oil Logistics & Analysis Manager beginning in 2011.

Mr. Partee was appointed Senior Vice President, Global Clean Products, effective February 24, 2021. Prior to this appointment, he served as Senior Vice President, Marketing, beginning in October 2018, Vice President, Business Development, beginning in February 2018, Director of Business Development beginning in January 2017, Manager of Crude Oil Logistics beginning in 2014, and Vice President, Business Development and Franchise, at Speedway beginning in 2012.

Mr. Powell was appointed Senior Vice President and Chief Digital Officer effective July 20, 2020. Before joining MPC, he served as Vice President and Chief Information Officer ("CIO") at GE Healthcare, a segment of General Electric Company ("GE") that provides medical technologies and services, beginning in April 2018, having previously served as Senior Vice President and CIO, Services, of GE, a multinational conglomerate, since January 2017 and CIO, Power Services, with GE Power since 2014, and in various positions of increasing responsibility with GE and its subsidiaries since 2000.

Mr. Wilkins was appointed Senior Vice President, Health, Environment, Safety and Security, effective February 24, 2021. Prior to this appointment, he served as Vice President, Environment, Safety and Security, beginning in October 2018, Director, Environment, Safety, Security and Product Quality, beginning in February 2016, and Director, Refining Environmental, Safety, Security and Process Safety Management, beginning in 2013.

Ms. Benson was appointed Vice President, Chief Securities, Governance & Compliance Officer and Corporate Secretary effective June 2018, having previously served as Vice President, Chief Compliance Officer and Corporate Secretary since March 2016. Prior to her 2016 appointment, she served as Assistant General Counsel, Corporate and Finance, beginning in 2012, and Group Counsel, Corporate and Finance, beginning in 2011.

Ms. Kazarian was appointed Vice President, Finance and Investor Relations, effective January 2023. Prior to this appointment, she served as Vice President, Investor Relations, beginning in April 2018. Before joining MPC, she was Managing Director and head of the MLP, Midstream and Refining Equity Research teams at Credit Suisse, a global investment bank and financial services company, beginning in September 2017. Previously, Ms. Kazarian was Managing Director of MLP, Midstream and Natural Gas Equity Research at Deutsche Bank, a global investment bank and financial services company, beginning in 2014, and an analyst specializing on various energy industry subsectors with Fidelity Management & Research Company, a privately held investment manager, beginning in 2005.

Ms. Niese was appointed Vice President, Treasury, effective January 2023. Prior to this appointment, she served as Assistant Treasurer beginning in February 2017, Corporate Finance Manager beginning in October 2014, and Brand Coordinating Manager beginning in 2011, having previously served in various analytical roles within Crude Supply, Terminals, Transportation and Rail and Internal Audit since joining MPC in 2003.

Mr. Floerke was appointed MPLX Executive Vice President and Chief Operating Officer effective August 2020. Prior to this appointment, he served as Executive Vice President, Gathering and Processing, beginning in 2018, Executive Vice President and Chief Operating Officer, MarkWest Operations, beginning in July 2017, and Executive Vice President and Chief Commercial Officer, MarkWest Assets, beginning in 2015, at the time of MPLX's acquisition of MarkWest Energy Partners, L.P. Before joining us, Mr. Floerke was Executive Vice President and Chief Commercial Officer at MarkWest beginning in 2015, and Senior Vice President, Northeast region, at MarkWest beginning in 2013. Previously, Mr. Floerke held senior management positions at Access Midstream Partners, L.P. from 2011 until 2013.

Mr. Lyon was appointed MPLX Senior Vice President, Logistics and Storage, effective September 2022, having previously served as Vice President, Operations, and President, Marathon Pipe Line LLC, since November 2018. Prior to his 2018 appointment, he was Vice President of Operations for Marathon Pipe Line LLC beginning in 2011. Previously, Mr. Lyon served in various roles of increasing responsibility with MPC since 1989, including as Manager, Marketing and Transportation Engineering beginning in 2010, and District Manager, Transport and Rail beginning in 2008. He serves as board chair for Liquid Energy Pipeline Association.

AVAILABLE INFORMATION

General information about MPC, including our Corporate Governance Principles, our Code of Business Conduct and our Code of Ethics for Senior Financial Officers, can be found at www.marathonpetroleum.com under the “Investors” tab by selecting “Corporate Governance.” We would post on our website any amendments to, or waivers from, either of our codes requiring disclosure under applicable rules within four business days following any such amendment or waiver. Charters for the Audit Committee, Compensation and Organization Development Committee, Corporate Governance and Nominating Committee and Sustainability and Public Policy Committee are also available at this site under the “About” tab by selecting “Board of Directors.”

MPC uses its website, www.marathonpetroleum.com, as a channel for routine distribution of important information, including news releases, analyst presentations, financial information and market data. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as any amendments and exhibits to those reports, are available free of charge through our website as soon as reasonably practicable after the reports are filed or furnished with the SEC, or on the SEC’s website at www.sec.gov. These documents are also available in hard copy, free of charge, by contacting our Investor Relations office. In addition, our website allows investors and other interested persons to sign up to automatically receive email alerts when we post news releases and financial information on our website. Information contained on our website is not incorporated into this Annual Report on Form 10-K or other securities filings.

Item 1A. Risk Factors

You should carefully consider each of the following risks and all the other information contained in this Annual Report on Form 10-K in evaluating us and our common stock. Although the risks are organized by headings, and each risk is discussed separately, many are interrelated. Our business, financial condition, results of operations and cash flows could be materially and adversely affected by these risks, and, as a result, the trading price of our common stock could decline. We have in the past been adversely affected by certain of, and may in the future be affected by, these risks. You should not interpret the disclosure of any risk factor to imply that the risk has not already materialized.

Business and Operational Risks

Our financial results are affected by volatile refining margins, which are dependent on factors beyond our control.

Our operating results, cash flows, future rate of growth, the carrying value of our assets and our ability to execute share repurchases and continue the payment of our base dividend are highly dependent on the margins we realize on our refined products. Historically, refining and marketing margins have been volatile, and we believe they will continue to be volatile. Our margins from the sale of gasoline and other refined products are influenced by a number of conditions, including the price of crude oil and other feedstocks. The prices of feedstocks and the prices at which we can sell our refined products fluctuate independently due to a variety of regional and global market factors that are beyond our control, including:

- worldwide and domestic supplies of and demand for feedstocks and refined products;
- transportation infrastructure cost and availability;
- operation levels of other refineries in our markets;
- the development by competitors of new refining or renewable conversion capacity;
- natural gas and electricity supply costs;
- political instability, threatened or actual terrorist incidents, armed conflict or other global political or economic conditions;
- local weather conditions; and
- the occurrence of other risks described herein.

Some of these factors can vary by region and may change quickly, adding to market volatility, while others may have longer-term effects. The longer-term effects of these and other factors on refining and marketing margins are uncertain. We generally purchase our feedstocks weeks before we refine them and sell the refined products. Price level changes during the period between purchasing feedstocks and selling the refined products from these feedstocks can have a significant effect on our financial results. We also purchase refined products manufactured by others for resale to our customers. Price changes during the periods between purchasing and reselling those refined products can have a material and adverse effect on our business, financial condition, results of operations and cash flows.

Lower refining and marketing margins have in the past, and may in the future, lead us to reduce the amount of refined products we produce, which may reduce our revenues, income from operations and cash flows. Significant reductions in refining and marketing margins could require us to reduce our capital expenditures, impair the carrying value of our assets (such as property, plant and equipment, inventory or goodwill), and require us to re-evaluate practices regarding our repurchase activity and dividends.

Legal, technological, political and scientific developments regarding emissions, fuel efficiency and alternative fuel vehicles may decrease demand for petroleum-based transportation fuels.

Developments aimed at reducing vehicle emissions, increasing vehicle efficiency or reducing the sale of new petroleum-fueled vehicles may decrease the demand and may increase the cost for our transportation fuels. At the direction of President Biden in his Executive Order setting a goal that 50 percent of all new passenger cars and light trucks sold in 2030 be zero emission vehicles, EPA and NHTSA have promulgated separate rules setting more stringent requirements for reductions through model year 2026. NHTSA's amended CAFE standards increase in stringency from model year 2023 levels by eight percent annually for model years 2024-2025 and ten percent annually for model year 2026. EPA's revised model year 2023-2026 CO2 emission standards, which were finalized in December 2021, result in average fuel economy of 40 mpg in model year 2026. Other jurisdictions have issued or considered issuing similar mandates, and we expect this trend will continue.

Moreover, consumer acceptance and market penetration of electric, hybrid and alternative fuel vehicles continues to increase. In 2021, several automobile manufacturers jointly announced their shared goal that 40-50% of their new vehicle sales be battery electric, fuel cell or plug-in hybrid vehicles by 2030. Other automobile manufacturers have similar, or more aggressive, goals with respect to vehicle electrification. Technological breakthroughs relating to renewable fuels or other fuel alternatives such as hydrogen or ammonia, or efficiency improvements for internal combustion engines could reduce demand for petroleum-based transportation fuels.

Together, these trends and developments have had and are expected to continue to have an adverse effect on sales of our petroleum-based transportation fuels, which in turn could have a material and adverse effect on our business, financial condition, results of operations and cash flows.

Our operations are subject to business interruptions and casualty losses.

Our operations are subject to business interruptions, such as scheduled and unscheduled refinery turnarounds, unplanned maintenance, explosions, fires, refinery or pipeline releases, product quality incidents, power outages, severe weather, labor disputes, acts of terrorism, or other natural or man-made disasters. These types of incidents adversely affect our operations and may result in serious personal injury or loss of human life, significant damage to property and equipment, impaired ability to manufacture our products, environmental pollution, and substantial losses. We have experienced certain of these incidents in the past.

For assets located near populated areas, the level of damage resulting from such an incident could be greater. In addition, we operate in and adjacent to environmentally sensitive waters where tanker, pipeline, rail car and refined product transportation and storage operations are closely regulated by federal, state and local agencies and monitored by environmental interest groups. Certain of our refineries receive crude oil and other feedstocks by tanker or barge. MPLX operates a fleet of boats and barges to transport light products, heavy oils, crude oil, renewable fuels, chemicals and feedstocks to and from refineries and terminals owned by MPC. Transportation and storage of crude oil, other feedstocks and refined products over and adjacent to water involves inherent risk and subjects us to the provisions of the OPA-90 and state laws in U.S. coastal and Great Lakes states and states bordering inland waterways on which we operate, as well as international laws in the jurisdictions in which we operate. If we are unable to promptly and adequately contain any accident or discharge involving tankers, pipelines, rail cars or above ground storage tanks transporting or storing crude oil, other feedstocks or refined products, we may be subject to substantial liability. In addition, the service providers contracted to aid us in a discharge response may be unavailable due to weather conditions, governmental regulations or other local or global events.

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.

We are increasingly dependent on the performance of our information technology systems and those of our third-party business partners and service providers.

We are increasingly dependent on our information technology systems and those of our third-party business partners and service providers for the safe and effective operation of our business. We rely on such systems to process, transmit and store electronic information, including financial records and personally identifiable information such as employee, customer and investor data, and to manage or support a variety of business processes, including our supply chain, pipeline operations, gathering and processing operations, credit card payments and authorizations at certain of our customers' retail outlets, financial transactions, banking and numerous other processes and transactions.

Our systems (and those of our third-party business partners and service providers) are subject to numerous and evolving cybersecurity threats and attacks, including ransomware and other malware, and phishing and social engineering schemes, which can compromise our ability to operate, and the confidentiality, availability, and integrity of data in our systems or those of our third-party business partners and service providers. These and other cybersecurity threats may originate with criminal attackers, state-sponsored actors or employee error or malfeasance. Because the techniques used to obtain unauthorized access, or to disable or degrade systems continuously evolve and have become increasingly complex and sophisticated, and can remain undetected for a period of time despite efforts to detect and respond in a timely manner, we (and our third-party business partners and service providers) are subject to the risk of cyberattacks.

Our cybersecurity and infrastructure protection technologies, disaster recovery plans and systems, employee training and vendor risk management may not be sufficient to defend us against all unauthorized attempts to access our information or impact our systems. We and our third-party vendors and service providers have been and may in the future be subject to cybersecurity events of varying degrees. To date, the impacts of prior events have not had a material adverse effect on us.

Cybersecurity events involving our information technology systems or those of our third-party business partners and service providers can result in theft, destruction, loss, misappropriation or release of confidential financial data, regulated personally identifiable information, intellectual property and other information; give rise to remediation or other expenses; result in litigation, claims and increased regulatory review or scrutiny; reduce our customers' willingness to do business with us; disrupt our operations and the services we provide to customers; and subject us to litigation and legal liability under international, U.S. federal and state laws. Any of such results could have a material adverse effect on our reputation, business, financial condition, results of operations and cash flows.

The availability and cost of renewable identification numbers could have an adverse effect on our financial condition and results of operations.

Pursuant to the Energy Policy Act of 2005 and the EISA, Congress established a Renewable Fuel Standard ("RFS") program that requires annual volumes of renewable fuel be blended into domestic transportation fuel. A 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 EPA's quota 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. There is currently no regulatory method for verifying the validity of most RINs sold on the open market. We have developed a RIN integrity program to vet the RINs that we purchase, and we incur costs to audit RIN generators. Nevertheless, if any of the RINs that we purchase and use for compliance are found to be invalid, we could incur costs and penalties for replacing the invalid RINs. See Item 1. Business – Regulatory Matters for additional information on these and other regulatory compliance matters.

Competitors that produce their own supply of feedstocks, own their own retail sites, 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 products. We compete with many companies for available supplies of crude oil and other feedstocks, and we do not produce any of our crude oil feedstocks. Our competitors include multinational, integrated major oil companies that can obtain a significant portion of their feedstocks from company-owned production. Competitors that produce crude oil are at times better positioned to withstand periods of depressed refining margins or feedstock shortages.

We also compete with other companies for customers for our refined petroleum products. The independent entrepreneurs who operate primarily Marathon-branded outlets and the direct dealer locations we supply compete with other convenience store chains, outlets owned or operated by integrated major oil companies or their dealers or jobbers, and other well-recognized national or regional retail outlets, often selling transportation fuels and merchandise at very competitive prices. Non-traditional transportation fuel retailers, such as supermarkets, club stores and mass merchants, may be better able to withstand volatile market conditions or levels of low or no profitability in the retail segment of the market. The loss of market share by those who operate our branded outlets and the direct dealer locations we supply could adversely affect our business, financial condition, results of operations and cash flows.

The COVID-19 pandemic has had, and may continue to have, a material and adverse effect on our and our customers' business and on general economic, financial and business conditions.

The COVID-19 pandemic and existing COVID-19 mitigation measures have had adverse effects on global travel and economic activity and, consequently, demand for the petroleum products that we manufacture, sell, transport and store. While demand for the petroleum products that we manufacture, sell, transport and store witnessed a substantial recovery in 2022, significant uncertainty remains as to the extent to which further resurgences in the virus, the emergence of new variants and waning vaccine effectiveness may spur future actions by individuals, governments and the private sector to stem the spread of the virus.

The extent to which the COVID-19 pandemic continues to impact global economic conditions, our business and the business of our customers, suppliers and other counterparties, will depend largely on future developments that remain uncertain and cannot be predicted, such as the length and severity of the pandemic; the social, economic and epidemiological effects of COVID-19 mitigation measures; the extent to which individuals acquire and retain immunity; emerging virus variants and how those new variants of the disease affect the human body; the stress on access to materials, supplies and contract labor; and general economic conditions.

Additionally, the continuation of the pandemic could precipitate or aggravate the other risks identified in this Form 10-K, which in turn could further materially and adversely affect our business, financial condition and results of operations, including in ways not currently known or considered by us to present significant risks.

We may be negatively impacted by inflation.

Increases in inflation may have an adverse effect on us. Current and future inflationary effects may be driven by, among other things, supply chain disruptions and governmental stimulus or fiscal policies. Continuing increases in inflation could impact the commodity markets generally, the overall demand for our products and services, our costs for labor, material and services and the margins we are able to realize on our products, all of which could have an adverse impact on our business, financial position, results of operations and cash flows. Inflation may also result in higher interest rates, which in turn would result in higher interest expense related to our variable rate indebtedness and any borrowings we undertake to refinance existing fixed rate indebtedness.

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

We utilize the services of third parties to transport crude oil and refined products to and from our refineries. In addition to our own operational risks, we could experience interruptions of supply or increases in costs to deliver refined products to market if the ability of the pipelines, railways or vessels to transport crude oil or refined products is disrupted or limited because of weather events, accidents, labor disputes, governmental regulations or third-party actions.

In particular, pipelines or railroads provide a nearly exclusive form of transportation of crude oil to, or refined products from, some of our refineries. A prolonged interruption, material reduction or cessation of service of such a pipeline or railway, whether due to private party or governmental action or other reason, or any other prolonged disruption of the ability of the trucks, pipelines, railways or vessels to transport crude oil or refined products to or from one or more of our refineries, can adversely affect us.

A significant decrease in oil and natural gas production in MPLX's areas of operation may adversely affect MPLX's business, financial condition, results of operations and cash available for distribution to its unitholders, including MPC.

A significant portion of MPLX's operations is dependent on the continued availability of natural gas and crude oil production. The production from oil and natural gas reserves and wells owned by its producer customers will naturally decline over time, which means that MPLX's cash flows associated with these wells will also decline over time. To maintain or increase throughput levels and the utilization rate of MPLX's facilities, MPLX must continually obtain new oil, natural gas, NGL and refined product supplies, which depend in part on the level of successful drilling activity near its facilities, its ability to compete for volumes from successful new wells and its ability to expand its system capacity as needed.

We have no control over the level of drilling activity in the areas of MPLX's operations, the amount of reserves associated with the wells or the rate at which production from a well will decline. In addition, we have no control over producers or their production decisions, which are affected by demand, prevailing and projected energy prices, drilling costs, operational challenges, access to downstream markets, the level of reserves, geological considerations, governmental regulations and the availability and cost of capital. Reductions in exploration or production activity in MPLX's areas of operations could lead to reduced throughput on its pipelines and utilization rates of its facilities.

Decreases in energy prices can lead to decreases in drilling activity, production rates and investments by third parties in the development of new oil and natural gas reserves. The prices for oil, natural gas and NGLs depend upon factors beyond our control, including global and local demand, production levels, changes in interstate pipeline gas quality specifications, imports and exports, seasonality and weather conditions, economic and political conditions domestically and internationally and governmental regulations. Sustained periods of low prices can result in producers deciding to limit their oil and gas drilling operations, which can substantially delay the production and delivery of volumes of oil, natural gas and NGLs to MPLX's facilities and adversely affect their revenues and cash available for distribution to us.

This impact may also be exacerbated due to the extent of MPLX's commodity-based contracts, which are more directly impacted by changes in natural gas and NGL prices than its fee-based contracts due to frac spread exposure and may result in operating losses when natural gas becomes more expensive on a Btu equivalent basis than NGL products. In addition, the purchase and resale of natural gas and NGLs in the ordinary course exposes our Midstream operations to volatility in natural gas or NGL prices due to the potential difference in the time of the purchases and sales and the potential difference in the price associated with each transaction, and direct exposure may also occur naturally as a result of production processes. Also, the significant volatility in natural gas, NGL and oil prices could adversely impact MPLX's unit price, thereby increasing its distribution yield and cost of capital. Such impacts could adversely impact MPLX's ability to execute its long-term organic growth projects, satisfy obligations to its customers and make distributions to unitholders at intended levels, and may also result in non-cash impairments of long-lived assets or goodwill or other-than-temporary non-cash impairments of our equity method investments.

Severe weather events, other climate conditions and earth movement and other geological hazards may adversely affect our assets and ongoing operations.

Our assets are subject to acute physical risks, such as floods, hurricane-force winds, wildfires, winter storms, and earth movement in variable, steep and rugged terrain and terrain with varied or changing subsurface conditions, and chronic physical risks, such as sea-level rise or water shortages. For example, in 2021, our Galveston Bay refinery was adversely affected by Winter Storm Uri and our Garyville refinery was adversely affected by Hurricane Ida. The occurrence of these and similar events have had, and may in the future have, an adverse effect on our assets and operations. We have incurred and will continue to incur additional costs to protect our assets and operations from such physical risks and employ the evolving technologies and

processes available to mitigate such risks. To the extent such severe weather events or other climate conditions increase in frequency and severity, we may be required to modify operations and incur costs that could materially and adversely affect our business, financial condition, results of operations and cash flows.

We are subject to risks arising from our operations outside the United States and generally to worldwide political and economic developments.

We operate and sell some of our products outside the United States. Our business, financial condition, results of operations and cash flows could be negatively impacted by disruptions in any of these markets, including economic instability, restrictions on the transfer of funds, supply chain disruptions, duties and tariffs, transportation delays, difficulty in enforcing contractual provisions, import and export controls, changes in governmental policies, political and social unrest, security issues involving key personnel and changing regulatory and political environments. Future outbreaks of infectious diseases or pandemics could affect demand for refined products and economic conditions generally, as the COVID-19 pandemic has done in recent years. In addition, the deterioration of trade relationships, modification or termination of existing trade agreements, imposition of new economic sanctions against Russia or other countries and the effects of potential responsive countermeasures, or increased taxes, border adjustments or tariffs can make international business operations more costly, which can have a material adverse effect on our business, financial condition, results of operations and cash flows.

We are required to comply with U.S. and international laws and regulations, including those involving anti-bribery, anti-corruption and anti-money laundering. Our training and compliance program and our internal control policies and procedures may not always protect us from violations committed by our employees or agents. Actual or alleged violations of these laws could disrupt our business and cause us to incur significant legal expenses, and could result in a material adverse effect on our reputation, business, financial condition, results of operations and cash flows.

More broadly, political and economic factors in global markets could impact crude oil and other feedstock supplies and could have a material adverse effect on us in other ways. Hostilities in the Middle East, Russia or elsewhere or the occurrence or threat of future terrorist attacks could adversely affect the economies of the U.S. and other countries. Lower levels of economic activity often result in a decline in energy consumption, which may cause our revenues and margins to decline and limit our future growth prospects. These risks could lead to increased volatility in prices for refined products, NGLs and natural gas. Additionally, these risks could increase instability in the financial and insurance markets and make it more difficult or costly for us to access capital and to obtain the insurance coverage that we consider adequate. Additionally, tax policy, legislative or regulatory action and commercial restrictions could reduce our operating profitability. For example, the U.S. government could prevent or restrict exports of refined products, NGLs, natural gas or the conduct of business in or with certain foreign countries. In addition, foreign countries could restrict imports, investments or commercial transactions or revoke or refuse to grant necessary permits.

Our investments in joint ventures could be adversely affected by our reliance on our joint venture partners and their financial condition, and our joint venture partners may have interests or goals that are inconsistent with ours.

We conduct some of our operations through joint ventures in which we share control over certain economic and business interests with our joint venture partners. Our joint venture partners may have economic, business or legal interests or goals that are inconsistent with our goals and interests or may be unable to meet their obligations. Failure by us, or an entity in which we have an 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 adversely affect our reputation, business, financial condition, results of operations and cash flows.

Terrorist attacks or other targeted operational disruptions may affect our facilities or those of our customers and suppliers.

Refining, gathering and processing, pipeline and terminal infrastructure, and other energy assets, may be the subject of terrorist attacks or other targeted operational disruptions. Any attack or targeted disruption of our operations, those of our customers or, in some cases, those of other energy industry participants, could have a material and adverse effect on our business. Similarly, any similar event that severely disrupts the markets we serve could materially and adversely affect our results of operations, financial position and cash flows.

Financial Risks

We have significant debt obligations; therefore, our business, financial condition, results of operations and cash flows could be harmed by a deterioration of our credit profile or downgrade of our credit ratings, a decrease in debt capacity or unsecured commercial credit available to us, or by factors adversely affecting credit markets generally.

At December 31, 2022, our total debt obligations for borrowed money and finance lease obligations were \$27.08 billion, including \$20.11 billion of obligations of MPLX and its subsidiaries. We may incur substantial additional debt obligations in the future.

Our indebtedness may impose various restrictions and covenants on us that could have material adverse consequences, including:

- increasing our vulnerability to changing economic, regulatory and industry conditions;
- limiting our ability to compete and our flexibility in planning for, or reacting to, changes in our business and the industry;

- limiting our ability to pay dividends to our stockholders;
- limiting our ability to borrow additional funds; and
- requiring us to dedicate a substantial portion of our cash flow from operations to payments on our debt, thereby reducing funds available for working capital, capital expenditures, acquisitions, share repurchases, dividends and other purposes.

A decrease in our debt or commercial credit capacity, including unsecured credit extended by third-party suppliers, or a deterioration in our credit profile could increase our costs of borrowing money and limit our access to the capital markets and commercial credit. Our credit rating is determined by independent credit rating agencies. We cannot provide assurance that any of our credit ratings will remain in effect for any given period of time or that a rating will not be lowered or withdrawn entirely by a rating agency if, in its judgment, circumstances so warrant. Any changes in our credit capacity or credit profile could materially and adversely affect our business, financial condition, results of operations and cash flows.

Significant variations in the market prices of crude oil and refined products can affect our financial performance.

During 2020, there were significant variations in the market prices of products held in our inventories. Those significant variations required us to record either inventory valuation charges or benefits to reflect the valuation of our inventories at the lower of cost or market. Future inventory valuation adjustments could have a negative or positive effect on our financial performance. In addition, a sustained period of low crude oil prices may also result in significant financial constraints on certain producers from which we acquire our crude oil, which could result in long term crude oil supply constraints for our business. Such conditions could also result in an increased risk that our customers and other counterparties may be unable to fully fulfill their obligations in a timely manner, or at all.

A continued period of economic slowdown or recession, or a protracted period of depressed prices for crude oil or refined petroleum products, could have significant and adverse consequences for our financial condition and the financial condition of our customers, suppliers and other counterparties, and could diminish our liquidity, trigger additional impairments and negatively affect our ability to obtain adequate crude oil volumes and to market certain of our products at favorable prices, or at all.

Our working capital, cash flows and liquidity can be significantly affected by decreases in commodity prices.

Payment terms for our crude oil purchases are generally longer than the terms we extend to our customers for refined product sales. As a result, the payables for our crude oil purchases are proportionally larger than the receivables for our refined product sales. Due to this net payables position, a decrease in commodity prices generally results in a use of working capital, and given the significant volume of crude oil that we purchase the impact can materially affect our working capital, cash flows and liquidity.

Increases in interest rates could adversely impact our share price, our ability to issue equity or incur debt for acquisitions or other purposes and our ability to make dividends at our intended levels.

Our revolving credit facility has a variable interest rate. As a result, future interest rates on our debt could be higher than current levels, causing our financing costs to increase accordingly. In addition, we may in the future refinance outstanding borrowings under our revolving credit facility with fixed-rate indebtedness. Interest rates payable on fixed-rate indebtedness typically are higher than the short-term variable interest rates that we pay on borrowings under our revolving credit facility. We also have other fixed-rate indebtedness that we may need or desire to refinance in the future at or prior to the applicable stated maturity. A rising interest rate environment could have an adverse impact on our share price and our ability to issue equity or incur debt for acquisitions or other purposes and to make dividends at our intended levels.

We may incur losses and additional costs as a result of our forward-contract activities and derivative transactions.

We currently use commodity derivative instruments, and we expect to continue their use in the future. If the instruments we use 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. In addition, we may be required to incur additional costs in connection with future regulation of derivative instruments to the extent it is applicable to us.

We do not insure against all potential losses, and, therefore, our business, financial condition, results of operations and cash flows could be adversely affected by unexpected liabilities and increased costs.

We maintain insurance coverage in amounts we believe to be prudent against many, but not all, potential liabilities arising from operating hazards. Uninsured liabilities arising from operating hazards such as explosions, fires, refinery or pipeline releases, cybersecurity breaches or other incidents involving our assets or operations can 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. Historically, we also have maintained insurance coverage for physical damage and resulting business interruption to our major facilities, with significant self-insured retentions. In the future, we may not be able to maintain insurance of the types and amounts we desire at reasonable rates.

We have recorded goodwill and other intangible assets that could become further impaired and result in material non-cash charges to our results of operations.

We accounted for the Andeavor and other acquisitions using the acquisition method of accounting, which requires that the assets and liabilities of the acquired business be recorded to our balance sheet at their respective fair values as of the acquisition date. Any excess of the purchase consideration over the fair value of the acquired net assets is recognized as goodwill.

As of December 31, 2022, our balance sheet reflected \$8.2 billion and \$1.9 billion of goodwill and other intangible assets, respectively. We have in the past recorded significant impairments of our goodwill. To the extent the value of goodwill or intangible assets becomes further impaired, we may be required to incur additional material non-cash charges relating to such impairment. Our operating results may be significantly impacted from both the impairment and the underlying trends in the business that triggered the impairment.

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

We have several large capital projects underway, including the activities associated with the conversion of the Martinez refinery to a renewable diesel facility. Delays in completing capital projects or making required changes or upgrades to our facilities could subject us to fines or penalties as well as affect our ability to supply certain products we produce. Such delays or cost increases may arise as a result of unpredictable factors, many of which are beyond our control, including:

- denials of, delays in receiving, or revocations of requisite regulatory approvals or permits;
- unplanned increases in the cost of construction materials or labor, whether due to inflation or other factors;
- disruptions in transportation of components or construction materials;
- adverse weather conditions, natural disasters or other events (such as equipment malfunctions, explosions, fires or spills) affecting our facilities, or those of vendors or suppliers;
- shortages of sufficiently skilled labor, or labor disagreements resulting in unplanned work stoppages;
- market-related increases in a project's debt or equity financing costs;
- global supply chain disruptions;
- nonperformance by, or disputes with, vendors, suppliers, contractors or subcontractors; and
- delays due to citizen, state or local political or activist pressure.

Moreover, our revenues may not increase immediately upon the expenditure of funds on a particular project. For instance, if we build a new pipeline, the construction will occur over an extended period of time and we may not receive any material increases in revenues until after completion of the project, if at all.

Any one or more of these factors could have a significant impact on our ongoing capital projects. If we were unable to make up the delays associated with such factors or to recover the related costs, or if market conditions change, it could materially and adversely affect our capital project returns and our business, financial condition, results of operations and cash flows.

Legal and Regulatory Risks

We expect to continue to incur substantial capital expenditures and operating costs to meet the requirements of evolving environmental or other laws or regulations. Future environmental laws and regulations may impact our current business plans and reduce demand for our products and services.

Our business is subject to numerous environmental laws and regulations. These laws and regulations continue to increase in both number and complexity and affect our business. Laws and regulations expected to become more stringent relate to the following:

- the emission or discharge of materials into the environment,
- solid and hazardous waste management,
- the regulatory classification of materials currently or formerly used in our business,
- pollution prevention,
- climate change and GHG emissions,
- characteristics and composition of transportation fuels, including the quantity of renewable fuels that must be blended into transportation fuels,
- public and employee safety and health,
- permitting,
- inherently safer technology, and
- facility security.

The specific impact of laws and regulations on us and our competitors may vary depending on a number of factors, including the age and location of operating facilities, marketing areas, crude oil and feedstock sources, production processes and subsequent judicial interpretation of such laws and regulations. We have incurred and will continue to incur substantial capital, operating and maintenance, and remediation expenditures to modify operations, install pollution control equipment, perform site cleanups or curtail operations. We have incurred and may in the future incur liability for personal injury, property damage, natural resource damage or clean-up costs due to alleged contamination and/or exposure to chemicals such as benzene and MTBE. There is also increased regulatory interest in per- and polyfluoroalkyl substances ("PFAS"), which we expect will lead to increased monitoring and remediation obligations and potential liability related thereto. Such expenditures could materially and adversely affect our business, financial condition, results of operations and cash flows.

Increased regulation of hydraulic fracturing and other oil and gas production activities could result in reductions or delays in U.S. production of crude oil and natural gas, which could adversely affect our results of operations and financial condition.

While we do not conduct hydraulic fracturing operations, we do provide gathering, processing and fractionation services with respect to natural gas and natural gas liquids produced by our customers as a result of such operations. Our refineries are also supplied in part with crude oil produced from unconventional oil shale reservoirs. A range of federal, state and local laws and regulations currently govern or, in some cases, prohibit, hydraulic fracturing in some jurisdictions. Stricter laws, regulations and permitting processes may be enacted in the future. If federal, state and local legislation and regulatory initiatives relating to hydraulic fracturing or other oil and gas production activities are enacted or expanded, such efforts could impede oil and gas production, increase producers' cost of compliance, and result in reduced volumes available for our midstream assets to gather, process and fractionate.

The tax treatment of publicly traded partnerships or an investment in MPLX units could be subject to potential legislative, judicial or administrative changes and differing interpretations, possibly on a retroactive basis.

The present U.S. federal income tax treatment of publicly traded partnerships, including MPLX, or an investment in MPLX common units may be modified by administrative, legislative or judicial interpretation at any time. From time to time, the President and members of the U.S. Congress propose and consider substantive changes to the existing U.S. federal income tax laws that would affect publicly traded partnerships, including proposals that would eliminate MPLX's ability to qualify for partnership tax treatment.

We are unable to predict whether any such changes will ultimately be enacted. Any modification to the U.S. federal income tax laws and interpretations thereof may or may not be applied retroactively and could make it more difficult or impossible for MPLX to meet the exception for certain publicly traded partnerships to be treated as partnerships for U.S. federal income tax purposes or increase the amount of taxes payable by unitholders in publicly traded partnerships.

Climate change and GHG emission regulation could affect our operations, energy consumption patterns and regulatory obligations, any of which could affect our results of operations and financial condition.

Currently, multiple legislative and regulatory measures to address GHG (including carbon dioxide, methane and nitrous oxides) 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 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, California and Washington have enacted cap-and-trade programs. 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.

Certain municipalities have also proposed or enacted restrictions on the installation of natural gas appliances and infrastructure in new residential or commercial construction, which could affect demand for the natural gas that MPLX transports and stores.

Regional and state climate change and air emissions goals and regulatory programs are complex, subject to change and 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 societal concerns and a number of international and national measures to limit GHG emissions. Additional stricter 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. Though the United States had withdrawn from the Paris Agreement, President Biden issued an executive order recommitting the United States to the Paris Agreement on January 20, 2021. President Biden also issued an Executive Order on climate change in which he announced putting the U.S. on a path to achieve net-zero carbon emissions, economy-wide, by 2050. The Executive Order also calls for the federal government to pause oil and gas leasing on federal lands, reduce methane

emissions from the oil and gas sector as quickly as possible, and requires federal permitting decisions to consider the effects of GHG emissions and climate change. In a second Executive Order, President Biden reestablished a working group to develop the social cost of carbon and the social cost of methane. The social cost of carbon and social cost of methane can be used to weigh the costs and benefits of proposed regulations. A higher social cost of carbon could support more stringent GHG emission regulation.

The scope and magnitude of the changes to U.S. climate change strategy under the Biden administration and future administrations, however, remain subject to the passage of legislation and interpretation and action of federal and state regulatory bodies; therefore, the impact to our industry and operations due to GHG regulation is unknown at this time.

Energy companies are subject to increasing environmental and climate-related litigation.

Governmental and other entities in various U.S. states have filed lawsuits against various energy companies, including us. The lawsuits allege damages as a result of climate change and the plaintiffs are seeking unspecified damages and abatement under various tort theories. Similar lawsuits may be filed in other jurisdictions. Additionally, private plaintiffs and government parties have undertaken efforts to shut down energy assets by challenging operating permits, the validity of easements or the compliance with easement conditions. For example, the Dakota Access Pipeline, in which MPLX has a minority interest, has been subject to, and may in the future be subject to, litigation seeking a permanent shutdown of the pipeline. There remains a high degree of uncertainty regarding the ultimate outcome of these types of proceedings, as well as their potential effect on our business, financial condition, results of operation and cash flows.

We are subject to risks associated with societal and political pressures and other forms of opposition to the development, transportation and use of carbon-based fuels. Such risks could adversely impact our business and ability to realize certain growth strategies.

We operate and develop our business with the expectation that regulations and societal sentiment will continue to enable the development, transportation and use of carbon-based fuels. However, policy decisions relating to the production, refining, transportation, storage and marketing of carbon-based fuels are subject to political pressures and the influence of public sentiment on GHG emissions, climate change, and climate adaptation. Additionally, societal sentiment regarding carbon-based fuels may adversely impact our reputation and ability to attract and retain employees.

The approval process for storage and transportation projects has become increasingly challenging, due in part to state and local concerns related to pipelines, negative public perception regarding the oil and gas industry, and concerns regarding GHG emissions downstream of pipeline operations. Our expansion or construction projects may not be completed on schedule (or at all), or at the budgeted cost. We also may be required to incur additional costs and expenses in connection with the design and installation of our facilities due to their location and the surrounding terrain. We may be required to install additional facilities, incur additional capital and operating expenditures, or experience interruptions in or impairments of our operations to the extent that the facilities are not designed or installed correctly.

Increasing attention to environmental, social and governance matters may impact our business and financial results.

In recent years, increasing attention has been given to corporate activities related to ESG matters in public discourse and the investment community. A number of advocacy groups, both domestically and internationally, have campaigned for governmental and private action to promote ESG-related change at public companies, including, but not limited to, through the investment and voting practices of investment advisers, pension funds, universities and other members of the investing community. These activities include increasing attention and demands for action related to climate change and energy transition matters, such as promoting the use of substitutes to fossil fuel products and encouraging the divestment of fossil fuel equities, as well as pressuring lenders and other financial services companies to limit or curtail activities with fossil fuel companies. If this were to continue, it could have a material adverse effect on our access to capital. Members of the investment community have begun to screen companies such as ours for sustainability performance, including practices related to GHG emission reduction and energy transition strategies. If we are unable to find economically viable, as well as publicly acceptable, solutions that reduce our GHG emissions, reduce GHG intensity for new and existing projects, increase our non-fossil fuel product portfolio, and/or address other ESG-related stakeholder concerns, our business and results of operations could be materially and adversely affected.

Our goals, targets and disclosures related to ESG matters expose us to numerous risks, including risks to our reputation and stock price.

Companies across all industries are facing increasing scrutiny from stakeholders related to ESG matters, including practices and disclosures regarding climate-related initiatives. In 2022, MPC established a target to reduce GHG emissions and MPLX established a target to reduce methane emissions intensity. These targets reflect our current plans and aspirations and are not guarantees that we will be able to achieve them. Our efforts to accomplish and accurately report on these goals and objectives, which may be, in part, dependent on the actions of suppliers and other third parties, present numerous operational, regulatory, reputational, financial, legal, and other risks, any of which could have a material negative impact, including on our reputation and stock price.

Efforts to achieve goals and targets, such as the foregoing and future internal climate-related initiatives, may increase costs, require purchase of carbon credits, or limit or impact our business plans and financial results, potentially resulting in the reduction

to the economic end-of-life of certain assets and an impairment of the associated net book value, among other material adverse impacts. Additionally, as the nature, scope and complexity of ESG reporting, calculation methodologies, voluntary reporting standards and disclosure requirements expand, including the SEC's proposed disclosure requirements regarding, among other matters, GHG emissions, we may have to undertake additional costs to control, assess and report on ESG metrics. Our failure or perceived failure to pursue or fulfill such goals and targets or to satisfy various reporting standards within the timelines we announce, or at all, could have a negative impact on investor sentiment, ratings outcomes for evaluating our approach to ESG matters, stock price, and cost of capital and expose us to government enforcement actions and private litigation, among other material adverse impacts.

Regulatory and other requirements concerning the transportation of crude oil and other commodities by rail may cause increases in transportation costs or limit the amount of crude oil that we can transport by rail.

We rely on a variety of systems to transport crude oil, including rail. Rail transportation is regulated by federal, state and local authorities. New regulations or changes in existing regulations could result in increased compliance expenditures. For example, in 2015, the U.S. Department of Transportation issued new standards and regulations applicable to crude-by-rail transportation (Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains). These or other regulations that require the reduction of volatile or flammable constituents in crude oil that is transported by rail, change the design or standards for rail cars used to transport the crude oil we purchase, change the routing or scheduling of trains carrying crude oil, or require any other changes that detrimentally affect the economics of delivering North American crude oil by rail could increase the time required to move crude oil from production areas to our refineries, increase the cost of rail transportation and decrease the efficiency of shipments of crude oil by rail within our operations. Any of these outcomes could have a material adverse effect on our business and results of operations.

Historic or current operations could subject us to significant legal liability or restrict our ability to operate.

We currently are defending litigation and anticipate we will be required to defend new litigation in the future. Our operations, including those of MPLX, and those of our predecessors could expose us to litigation and civil claims by private plaintiffs for alleged damages related to contamination of the environment or personal injuries caused by releases of hazardous substances from our facilities, products liability, consumer credit or privacy laws, product pricing or antitrust laws or any other laws or regulations that apply to our operations. While an adverse outcome in most litigation matters would not be expected to be material to us, in class-action litigation, large classes of plaintiffs may allege damages relating to extended periods of time or other alleged facts and circumstances that could increase the amount of potential damages. Attorneys general and other government officials have in the past and may in the future pursue litigation in which they seek to recover civil damages from companies on behalf of a state or its citizens for a variety of claims, including violation of consumer protection and product pricing laws or natural resources damages. If we are not able to successfully defend such litigation, it may result in liability to our company that could materially and adversely affect our business, financial condition, results of operations and cash flows. In addition to substantial liability, plaintiffs in litigation may also seek injunctive relief which, if imposed, could have a material adverse effect on our future business, financial condition, results of operations and cash flows.

A portion of our workforce is unionized, and we may face labor disruptions that could materially and adversely affect our business, financial condition, results of operations and cash flows.

Approximately 3,755 of our employees are covered by collective bargaining agreements. Approximately 2,545 refinery employees are covered by collective bargaining agreements with expiration dates ranging from 2023 to 2027. These agreements may be renewed at an increased cost to us. In addition, we have experienced in the past, and may experience in the future, work stoppages as a result of labor disagreements. Any prolonged work stoppages disrupting operations could have a material adverse effect on our business, financial condition, results of operations and cash flows.

In addition, California requires refinery owners to pay prevailing wages to contract craft workers and restricts refiners' ability to hire qualified employees to a limited pool of applicants. Legislation or changes in regulations could result in labor shortages, higher labor costs, and an increased risk that contract workers become joint employees, which could trigger bargaining issues, and wage and benefit consequences, especially during critical maintenance and construction periods.

One of our subsidiaries acts as the general partner of a master limited partnership, which may expose us to certain legal liabilities.

One of our subsidiaries acts as the general partner of MPLX, a master limited partnership. Our control of the general partner of MPLX may increase the possibility of claims of breach of fiduciary duties, including claims of conflicts of interest. Any liability resulting from such claims could have a material adverse effect on our future business, financial condition, results of operations and cash flows.

If foreign investment in us or MPLX exceeds certain levels, we could be prohibited from operating vessels engaged in U.S. coastwise trade, which could adversely affect our business, financial condition, results of operations and cash flows.

The Shipping Act of 1916 and Merchant Marine Act of 1920 (collectively, the "Maritime Laws"), generally require that vessels engaged in U.S. coastwise trade be owned by U.S. citizens. Among other requirements to establish citizenship, entities that own such vessels must be owned at least 75 percent by U.S. citizens. If we fail to maintain compliance with the Maritime Laws, we

would be prohibited from operating vessels in the U.S. inland waters or otherwise in U.S. coastwise trade. Such a prohibition could materially and adversely affect our business, financial condition, results of operations and cash flows.

Our operations could be disrupted if we are unable to maintain or obtain real property rights required for our business.

We do not own all of the land on which certain of our assets are located, particularly our midstream assets, but rather obtain the rights to construct and operate such assets on land owned by third parties and governmental agencies for a specific period of time. Therefore, we are subject to the possibility of more burdensome terms and increased costs to retain necessary land use if our leases, rights-of-way or other property rights lapse, terminate or are reduced or it is determined that we do not have valid leases, rights-of-way or other property rights. For example, a portion of the Tesoro High Plains pipeline in North Dakota remains shut down following delays in renewing a right-of-way necessary for the operation of a section of the pipeline. Any loss of or reduction in our real property rights, including loss or reduction due to legal, governmental or other actions or difficulty renewing leases, right-of-way agreements or permits on satisfactory terms or at all, could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Certain of our facilities are located on Native American tribal lands and are subject to various federal and tribal approvals and regulations, which can increase our costs and delay or prevent our efforts to conduct operations.

Various federal agencies within the U.S. Department of the Interior, particularly the Bureau of Indian Affairs, along with each Native American tribe, regulate natural gas and oil operations on Native American tribal lands. In addition, each Native American tribe is a sovereign nation having the right to enforce laws and regulations and to grant approvals independent from federal, state and local statutes and regulations. These tribal laws and regulations include various taxes, fees, requirements to employ Native American tribal members and other conditions that apply to operators and contractors conducting operations on Native American tribal lands. Persons conducting operations on tribal lands are generally subject to the Native American tribal court system. In addition, if our relationships with any of the relevant Native American tribes were to deteriorate, we could face significant risks to our ability to continue operations on Native American tribal lands. One or more of these factors has in the past and may in the future increase our cost of doing business on Native American tribal lands and impact the viability of, or prevent or delay our ability to conduct operations on such lands. For example, we are subject to ongoing litigation regarding trespass claims relating to a portion of the Tesoro High Plains pipeline in North Dakota.

The Court of Chancery of the State of Delaware will be, to the extent permitted by law, the sole and exclusive forum for substantially all disputes between us and our shareholders.

Our Restated Certificate of Incorporation provides that the Court of Chancery of the State of Delaware will be the sole and exclusive forum for:

- any derivative action or proceeding brought on behalf of MPC;
- any action asserting a claim of breach of a fiduciary duty owed by any director or officer of MPC to MPC or its stockholders
- any action asserting a claim against MPC arising pursuant to any provision of the General Corporation Law of the State of Delaware, MPC's Restated Certificate of Incorporation, any Preferred Stock Designation or the Bylaws of MPC; or
- any other action asserting a claim against MPC or any Director or officer of MPC that is governed by or subject to the internal affairs doctrine for choice of law purposes.

The forum selection provision may restrict a stockholder's ability to bring a claim against us or directors or officers of MPC in a forum that it finds favorable, which may discourage stockholders from bringing such claims at all. Alternatively, if a court were to find the forum selection provision contained in our Restated Certificate of Incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in another forum, which could materially adversely affect our business, financial condition and results of operations. However, the forum selection provision does not apply to any claims, actions or proceedings arising under the Securities Act or the Exchange Act.

Provisions in our corporate governance documents could operate to delay or prevent a change in control of our company, dilute the voting power or reduce the value of our capital stock or affect its liquidity.

The existence of some provisions within our restated certificate of incorporation and amended and restated bylaws could discourage, delay or prevent a change in control of us that a stockholder may consider favorable. These include provisions:

- providing that our board of directors fixes the number of members of the board;
- providing for the division of our board of directors into three classes with staggered terms;
- providing that only our board of directors may fill board vacancies;
- limiting who may call special meetings of stockholders;
- prohibiting stockholder action by written consent, thereby requiring stockholder action to be taken at a meeting of the stockholders;
- establishing advance notice requirements for nominations of candidates for election to our board of directors or for proposing matters that can be acted on by stockholders at stockholder meetings;
- establishing supermajority vote requirements for certain amendments to our restated certificate of incorporation;

- providing that our directors may only be removed for cause;
- authorizing a large number of shares of common stock that are not yet issued, which would allow our board of directors to issue shares to persons friendly to current management, thereby protecting the continuity of our management, or which could be used to dilute the stock ownership of persons seeking to obtain control of us; and
- authorizing the issuance of “blank check” preferred stock, which could be issued by our board of directors to increase the number of outstanding shares and thwart a takeover attempt.

Our restated certificate of incorporation also authorizes us to issue, without the approval of our stockholders, one or more classes or series of preferred stock having such designation, powers, preferences and relative, participating, optional and other special rights, including preferences over our common stock respecting dividends and distributions, as our board of directors generally may determine. The terms of one or more classes or series of preferred stock could dilute the voting power or reduce the value of our common stock. For example, we could grant holders of preferred stock the right to elect some number of our board of directors in all events or on the happening of specified events or the right to veto specified transactions. Similarly, the repurchase or redemption rights or liquidation preferences we could assign to holders of preferred stock could affect the residual value of our common stock.

Finally, to facilitate compliance with the Maritime Laws, our restated certificate of incorporation limits the aggregate percentage ownership by non-U.S. citizens of our common stock or any other class of our capital stock to 23 percent of the outstanding shares. We may prohibit transfers that would cause ownership of our common stock or any other class of our capital stock by non-U.S. citizens to exceed 23 percent. Our restated certificate of incorporation also authorizes us to effect any and all measures necessary or desirable to monitor and limit foreign ownership of our common stock or any other class of our capital stock. These limitations could have an adverse impact on the liquidity of the market for our common stock if holders are unable to transfer shares to non-U.S. citizens due to the limitations on ownership by non-U.S. citizens. Any such limitation on the liquidity of the market for our common stock could adversely impact the market price of our common stock.

Strategic Transaction Risks

Following the Speedway sale, our diminished diversification of revenue sources may adversely affect our results of operations and financial condition.

On May 14, 2021, we completed the sale of Speedway, our company-owned and operated retail transportation fuel and convenience store business, to 7-Eleven. Following the completion of the sale, our diversification of revenue sources diminished, and our business, financial condition, results of operations and cash flows may be subject to increased volatility as a result.

General Risk Factors

Significant stockholders may attempt to effect changes at our company or acquire control over our company, which could impact the pursuit of business strategies and adversely affect our results of operations and financial condition.

Our stockholders may from time to time engage in proxy solicitations, advance stockholder proposals or otherwise attempt to effect changes or acquire control over our company. Campaigns by stockholders to effect changes at publicly traded companies are sometimes led by investors seeking to increase short-term stockholder value through actions such as financial restructuring, increased debt, special dividends, stock repurchases or sales of assets or the entire company. Responding to proxy contests and other actions by activist stockholders can be costly and time-consuming and could divert the attention of our board of directors and senior management from the management of our operations and the pursuit of our business strategies. As a result, stockholder campaigns could adversely affect our results of operations and financial condition.

Future acquisitions will involve the integration of new assets or businesses and may present substantial risks that could adversely affect our business, financial conditions, results of operations and cash flows.

Future transactions involving the addition of new assets or businesses will present risks, which may include, among others:

- inaccurate assumptions about future synergies, revenues, capital expenditures and operating costs;
- an inability to successfully integrate, or a delay in the successful integration of, assets or businesses we acquire;
- a decrease in our liquidity resulting from using a portion of our available cash or borrowing capacity under our revolving credit agreement to finance transactions;
- a significant increase in our interest expense or financial leverage if we incur additional debt to finance transactions;
- the assumption of unknown environmental and other liabilities, losses or costs for which we are not indemnified or for which our indemnity is inadequate;
- the diversion of management’s attention from other business concerns;
- the loss of customers or key employees from the acquired business; and
- the incurrence of other significant charges, such as impairment of goodwill or other intangible assets, asset devaluation or restructuring charges.

Compliance with and changes in tax laws could materially and adversely impact our financial condition, results of operations and cash flows.

We are subject to extensive tax liabilities, including federal, state and local income taxes in the United States and in foreign jurisdictions, and, transactional, payroll, franchise, withholding and property taxes. New tax laws and regulations and changes in, interpretations of, and guidance regarding tax laws and regulations, including impacts of the Tax Cuts and Jobs Act of 2017, the Coronavirus Aid, Relief, Economic Security Act of 2020, and the Inflation Reduction Act of 2022, could result in increased expenditures by us for tax liabilities in the future and could materially and adversely impact our financial condition, results of operations and cash flows.

In addition, we are subject to the examination of our returns by taxing authorities. We regularly assess the likelihood of adverse outcomes resulting from such examinations to determine the adequacy of our provision for income taxes. Although we believe we have made appropriate provisions for taxes in the jurisdictions in which we operate, changes in the tax laws or challenges from tax authorities under existing tax laws could adversely affect our business, financial condition and results of operations and could subject us to interest and penalties.

Item 1B. Unresolved Staff Comments

None

Item 2. Properties

We believe that our properties and facilities are adequate for our operations and that our facilities are adequately maintained. See the following sections for details of our assets by segment.

REFINING & MARKETING

The table below sets forth the location and crude oil refining capacity for each of our refineries as of December 31, 2022. Refining throughput can exceed crude oil refining capacity due to the processing of other charge and blendstocks in addition to crude oil and the timing of planned turnaround and major maintenance activity.

Refinery	Crude Oil Refining Capacity (mbpcd)
<i>Gulf Coast Region</i>	
Garyville, Louisiana	596
Galveston Bay, Texas City, Texas	593
Subtotal Gulf Coast region	1,189
<i>Mid-Continent Region</i>	
Catlettsburg, Kentucky	291
Robinson, Illinois	253
Detroit, Michigan	140
El Paso, Texas	133
St. Paul Park, Minnesota	105
Canton, Ohio	100
Mandan, North Dakota	71
Salt Lake City, Utah	66
Subtotal Mid-Continent region	1,159
<i>West Coast Region</i>	
Los Angeles, California	363
Anacortes, Washington	119
Kenai, Alaska	68
Subtotal West Coast region	550
<i>Total</i>	2,898

The Dickinson, North Dakota, renewable fuels facility has the capacity to produce 184 million gallons per year of renewable diesel from corn oil, soybean oil, fats and greases. MPC is currently in the process of converting the Martinez refinery to a renewable diesel facility. The full capacity of the Martinez facility is expected to be approximately 730 million gallons per year.

The following table sets forth the approximate number of locations where jobbers maintain branded outlets, marketing fuels under the Marathon, ARCO, Shell, Mobil, Tesoro and other brands, as of December 31, 2022.

Location	Number of Branded Outlets
Alabama	404
Alaska	54
Arizona	79
Arkansas	1
California	114
Colorado	12
District of Columbia	2
Florida	639
Georgia	400
Idaho	105
Illinois	183
Indiana	640
Iowa	4
Kentucky	515
Louisiana	57
Maryland	60
Massachusetts	1
Mexico	281
Michigan	732
Minnesota	299
Mississippi	118
Nevada	19
New Mexico	38
New York	62
North Carolina	208
North Dakota	119
Ohio	811
Oregon	43
Pennsylvania	85
Rhode Island	3
South Carolina	102
South Dakota	33
Tennessee	407
Texas	11
Utah	109
Virginia	192
Washington	95
West Virginia	109
Wisconsin	58
Wyoming	5
Total	7,209

The Refining & Marketing segment sells transportation fuels through long-term fuel supply contracts to direct dealer locations, primarily under the ARCO brand. The following table sets forth the number of direct dealer locations by state as of December 31, 2022.

<u>Location</u>	<u>Number of Locations</u>
Arizona	69
California	1,035
Nevada	68
Total	<u>1,172</u>

The following table sets forth details about our Refining & Marketing owned and operated terminals as of December 31, 2022. See the Midstream - MPLX section for information with respect to MPLX owned and operated terminals.

<u>Owned and Operated Terminals</u>	<u>Number of Terminals</u>	<u>Tank Storage Capacity (thousand barrels)</u>
Light Products Terminals:		
Alaska	1	231
New York	1	352
Subtotal light products terminals	<u>2</u>	<u>583</u>
Asphalt Terminals:		
Florida	1	263
Indiana	1	121
Kentucky	4	549
Louisiana	1	54
Michigan	1	12
New York	1	417
Ohio	4	2,207
Pennsylvania	1	451
Tennessee	2	480
Subtotal asphalt terminals	<u>16</u>	<u>4,554</u>
Total owned and operated terminals	<u>18</u>	<u>5,137</u>

MIDSTREAM - MPLX

The following table sets forth certain information relating to MPLX's crude oil and refined products pipeline systems and storage assets as of December 31, 2022.

Pipeline System or Storage Asset	Diameter (inches)	Length (miles)	Capacity
Total crude oil pipeline systems ^{(a)(b)}	2" - 42"	5,135	Various
Total refined products pipeline systems ^{(a)(b)(c)}	4" - 36"	3,732	Various
Barge Docks (mbpd)			4,834
Storage assets: (mbbls)			
Refining Logistics ^(d)			93,493
Tank Farms			33,190
Caverns			4,209

^(a) Includes approximately 16 miles of crude pipeline and 2 miles of refined product pipeline leased from third parties.

^(b) Includes approximately 1,173 miles of inactive crude pipeline and 203 miles of inactive refined product pipeline.

^(c) Includes approximately 87 miles and 17 miles of refined product pipelines in which MPLX has partial ownership of 65% and 50%, respectively.

^(d) Refining logistics assets primarily include tankage. During 2022, MPC formed the Martinez Renewables joint venture and is currently in the process of converting the Martinez refinery to a renewable diesel facility. MPLX owns refining logistics assets with 5,809 mbbls of storage capacity associated with the facility and has entered into terminalling and storage service agreements with the joint venture and its partners to provide logistics services for the facility.

The following table sets forth information regarding the pipeline systems which MPLX has an interest in through ownership of its equity method investments as of December 31, 2022.

	Diameter (inches)	Length (miles)	Ownership Percentage
Crude Systems:			
MarEn Bakken Company LLC ^(a)	30"	1,916	25%
Minnesota Pipe Line Company LLC	16"-24"	975	17%
Wink to Webster Holdings LLC	36"	522	11%
Illinois Extension Pipeline Company LLC	24"	168	35%
Andeavor Logistics Rio Pipeline LLC	12"	119	67%
LOCAP LLC	48"	57	59%
LOOP LLC	48"	48	41%
Refined Product Systems:			
Explorer Pipeline Company	12" - 28"	1,826	25%
Natural Gas and NGL Systems:			
Whistler Pipeline LLC	36" - 42"	498	38%
BANGL LLC ^(a)	12" - 24"	109	25%

^(a) The investment in MarEn Bakken Company LLC includes MPLX's 9.19 percent indirect interest in a joint venture that owns and operates the Dakota Access Pipeline and Energy Transfer Crude Oil Pipeline projects, collectively referred to as the Bakken Pipeline system or DAPL.

^(b) BANGL LLC also owns a 30% interest in a 323 mile NGL pipeline.

The following table sets forth details about MPLX owned and operated terminals as of December 31, 2022. Additionally, MPLX has partial ownership interest in one terminal.

<u>Owned and Operated Terminals</u>	<u>Number of Terminals</u>	<u>Tank Storage Capacity (mbbls)</u>
Refined Products Terminals:		
Alabama	2	443
Alaska	3	1,573
California	8	3,483
Florida	3	2,265
Georgia	4	982
Idaho	3	999
Illinois	2	562
Indiana	7	3,812
Kentucky	6	2,587
Louisiana	2	5,404
Michigan	8	2,440
Minnesota	1	13
New Mexico	3	471
North Carolina	3	1,356
North Dakota	1	—
Ohio	12	3,200
Pennsylvania	1	390
South Carolina	1	371
Tennessee	4	1,149
Texas	1	76
Utah	1	21
Washington	4	920
West Virginia	2	1,564
Subtotal light products terminals	82	34,081
Asphalt Terminals		
Arizona	3	554
Minnesota	1	—
Nevada ^(a)	1	283
New Mexico	1	38
Texas	1	197
Subtotal asphalt terminals	7	1,072
Total owned and operated terminals	89	35,153

^(a) MPLX accounts for this terminal as an equity method investment.

The following table sets forth details about MPLX barges and towboats as of December 31, 2022.

<u>Class of Equipment</u>	<u>Number in Class</u>	<u>Capacity (mbbls)</u>
Inland tank barges	296	7,820
Inland towboats	23	N/A

The following tables set forth certain information relating to MPLX's consolidated and operated joint venture gas processing facilities, fractionation facilities, natural gas gathering systems, NGL pipelines and natural gas pipelines as of and for the year ended December 31, 2022.

Gas Processing Complexes	Design Throughput Capacity (MMcf/d)	Natural Gas Throughput (MMcf/d) ^(a)	Utilization of Design Capacity ^(a)
Marcellus Operations	6,320	5,515	87 %
Utica Operations	1,325	495	37 %
Southern Appalachia Operations	495	217	44 %
Southwest Operations ^(b)	2,545	1,637	69 %
Bakken Operations	185	146	79 %
Rockies Operations	1,177	438	37 %
Total	12,047	8,448	71 %

^(a) Natural gas throughput is a weighted average for days in operation. The utilization of design capacity has been calculated using the weighted average design throughput capacity.

^(b) The capacity presented above includes MPLX's proportionate share of Centrahoma Processing LLC's processing capacity of 550 MMcf/d, as MPLX owns a non-operating 40 percent interest in this joint venture. Actual throughput of 170 MMcf/d representing MPLX's share of processed volumes is also included and used to compute the utilization presented above.

Fractionation & Condensate Stabilization Facilities	Design Throughput Capacity (mbpd)	NGL Throughput (mbpd) ^(a)	Utilization of Design Capacity ^(a)
Marcellus Operations	413	307	74 %
Utica Operations	23	14	61 %
Southern Appalachia Operations	24	11	46 %
Bakken Operations	33	21	64 %
Rockies Operations	5	4	80 %
Total	498	357	72 %

^(a) NGL throughput is a weighted average for days in operation. The utilization of design capacity has been calculated using the weighted average design throughput capacity.

De-ethanization Facilities	Design Throughput Capacity (mbpd)	NGL Throughput (mbpd) ^(a)	Utilization of Design Capacity ^(a)
Marcellus Operations	309	204	72 %
Utica Operations	40	5	13 %
Rockies Operations	5	—	— %
Total	354	209	64 %

^(a) NGL throughput is a weighted average for days in operation. The utilization of design capacity has been calculated using the weighted average design throughput capacity.

Natural Gas Gathering Systems	Design Throughput Capacity (MMcf/d)	Natural Gas Throughput (MMcf/d) ^(a)	Utilization of Design Capacity ^(a)
Marcellus Operations	1,547	1,321	85 %
Utica Operations	3,183	2,134	67 %
Southwest Operations	2,980	1,629	58 %
Bakken Operations	189	152	80 %
Rockies Operations ^(b)	1,486	448	30 %
Total	9,385	5,684	62 %

^(a) Natural gas throughput is a weighted average for days in operation. The utilization of design capacity has been calculated using the weighted average design throughput capacity.

^(b) This region does not include MPLX's operated joint venture, Rendezvous Gas Services, L.L.C. ("RGS"), which has a gathering capacity of 1,032 MMcf/d; this system supports other systems which are included in the Rockies region and that throughput is presented in the Rockies gathering throughput above. The third party volumes gathered for RGS during the year ended December 31, 2022 were 110 MMcf/d.

The following table sets forth certain information relating to MPLX's NGL pipelines as of December 31, 2022.

NGL Pipelines	Diameter (inches)	Length (miles)	Design Throughput Capacity (mbpd)
Marcellus Operations	4" - 20"	442	Various
Utica Operations	4" - 12"	119	Various
Southern Appalachia Operations	6" - 8"	138	35
Southwest Operations ^(a)	6"	50	39
Bakken Operations	8" - 12"	84	80
Rockies Operations	8"	10	15

^(a) Includes 38 miles of inactive pipeline.

MIDSTREAM - MPC-RETAINED ASSETS AND INVESTMENTS

The following table sets forth certain information related to our crude oil and refined products pipeline systems not owned by MPLX.

As of December 31, 2022, we had partial ownership interests in the following pipeline companies.

Pipeline Company	Diameter (inches)	Length (miles)	Ownership Interest	Operated by MPL
Crude oil pipeline companies:				
Capline Pipeline Company LLC	40"	644	33%	Yes
Gray Oak Pipeline, LLC	8"-30"	845	25%	No
LOOP ^(a)	48"	48	10%	No
Total		1,489		
Refined products pipeline companies:				
Ascension Pipeline Company LLC	12"	32	50%	No
Centennial Pipeline LLC ^(b)	24"-26"	793	50%	Yes
Muskegon Pipeline LLC	10"-12"	170	60%	Yes
Wolverine Pipe Line Company	6"-18"	798	6%	No
Total		1,793		

^(a) Represents interest retained by MPC and excludes MPLX's 40.7 percent ownership interest in LOOP. Pipeline mileage is excluded from total as it is included with MPLX assets.

^(b) All system pipeline miles are inactive.

As of December 31, 2022, we had a partial ownership interest in the following crude oil terminal.

Terminal	Ownership Interest	Tank Storage Capacity (million barrels)
South Texas Gateway Terminal LLC	25%	8.6

The following table sets forth details about our ocean vessels as of December 31, 2022.

Class of Equipment	Number in Class	Capacity (mbbls)
Jones Act product tankers	4	1,320
750 Series ATB vessels ^(a)	3	990

^(a) Represents ownership through our indirect noncontrolling 50% interest in Crowley Blue Water Partners.

Item 3. Legal Proceedings

We are the subject of, or a party to, a number of pending or threatened legal actions, contingencies and commitments involving a variety of matters, including laws and regulations relating to the environment. While it is possible that an adverse result in one or more of the lawsuits or proceedings in which we are a defendant could be material to us, based upon current information and our experience as a defendant in other matters, we believe that these lawsuits and proceedings, individually or in the aggregate, will not have a material adverse effect on our consolidated results of operations, financial position or cash flows.

Item 103 of Regulation S-K promulgated by the SEC requires disclosure of certain environmental matters when a governmental authority is a party to the proceedings and such proceedings involve potential monetary sanctions, unless we reasonably believe that the matter will result in no monetary sanctions, or in monetary sanctions, exclusive of interest and costs, of less than a specified threshold. We use a threshold of \$1 million for this purpose.

Climate Change Litigation

Governmental and other entities in various states have filed climate-related lawsuits against a number of energy companies, including MPC. The lawsuits allege damages as a result of climate change and the plaintiffs are seeking unspecified damages and abatement under various tort theories. Similar lawsuits may be filed in other jurisdictions. The names of the courts in which the proceedings are pending and the dates instituted are as follows:

Plaintiff	Date Instituted	Name of Court(s) where pending
County of San Mateo, California	July 17, 2017	U.S. District Court (Northern District of California); U.S. Court of Appeals for the Ninth Circuit
County of Marin, California	July 17, 2017	U.S. District Court (Northern District of California); U.S. Court of Appeals for the Ninth Circuit
City of Imperial Beach, California	July 17, 2017	U.S. District Court (Northern District of California); U.S. Court of Appeals for the Ninth Circuit
County of Santa Cruz, California	December 20, 2017	U.S. District Court (Northern District of California); U.S. Court of Appeals for the Ninth Circuit
City of Santa Cruz, California	December 20, 2017	U.S. District Court (Northern District of California); U.S. Court of Appeals for the Ninth Circuit
City of Richmond, California	January 22, 2018	U.S. District Court (Northern District of California); U.S. Court of Appeals for the Ninth Circuit
State of Rhode Island	July 2, 2018	Superior Court of Providence County; U.S. Court of Appeals for the First Circuit
Mayor and City Council of Baltimore, Maryland	July 20, 2018	Circuit Court of Baltimore City; U.S. Court of Appeals for the Fourth Circuit
Pacific Coast Federation of Fishermen's Associations, Inc.	November 14, 2018	U.S. District Court (Northern District of California)
City and County of Honolulu, Hawaii	March 9, 2020	U.S. District Court (District of Hawaii); U.S. Court of Appeals for the Ninth Circuit; Circuit Court of the First Circuit (State of Hawaii); Hawaii Intermediate Court of Appeals
City of Charleston, South Carolina	September 9, 2020	U.S. District Court (District of South Carolina)
State of Delaware	September 10, 2020	U.S. District Court (District of Delaware); U.S. Court of Appeals for the Third Circuit
County of Maui, Hawaii	October 12, 2020	U.S. District Court (District of Hawaii); U.S. Court of Appeals for the Ninth Circuit; Circuit Court of the First Circuit (State of Hawaii)
City of Annapolis, Maryland	February 22, 2021	U.S. District Court (District of Maryland); US Court of Appeals for the Fourth Circuit
Anne Arundel County, Maryland	April 26, 2021	U.S. District Court (District of Maryland); U.S. Court of Appeals for the Fourth Circuit

Dakota Access Pipeline

MPLX holds a 9.19 percent indirect interest in a joint venture ("Dakota Access") that owns and operates the Dakota Access Pipeline and Energy Transfer Crude Oil Pipeline projects, collectively referred to as the Bakken Pipeline system or DAPL. In 2020, the D.D.C. ordered the Army Corps, which granted permits and an easement for the Bakken Pipeline system, to prepare an environmental impact statement ("EIS") relating to an easement under Lake Oahe in North Dakota. The D.D.C. later vacated the easement. The Army Corps expects to release a draft EIS in 2023.

In May 2021, the D.D.C. denied a renewed request for an injunction to shut down the pipeline while the EIS is being prepared. In June 2021, the D.D.C. issued an order dismissing without prejudice the tribes' claims against the Dakota Access Pipeline. The litigation could be reopened or new litigation challenging the EIS, once completed, could be filed. The pipeline remains operational.

MPLX has entered into a Contingent Equity Contribution Agreement whereby it, along with the other joint venture owners in the Bakken Pipeline system, has agreed to make equity contributions to the joint venture upon certain events occurring to allow the entities that own and operate the Bakken Pipeline system to satisfy their senior note payment obligations. The senior notes were issued to repay amounts owed by the pipeline companies to fund the cost of construction of the Bakken Pipeline system. If the pipeline were temporarily shut down, MPLX would have to contribute its 9.19 percent pro rata share of funds required to pay interest accruing on the notes and any portion of the principal that matures while the pipeline is shutdown. MPLX also expects to contribute its 9.19 percent pro rata share of any costs to remediate any deficiencies to reinstate the permit and/or return the pipeline into operation. If the vacatur of the easement permit results in a permanent shutdown of the pipeline, MPLX would have to contribute its 9.19 percent pro rata share of the cost to redeem the bonds (including the 1% redemption premium required pursuant to the indenture governing the notes) and any accrued and unpaid interest. As of December 31, 2022, our maximum potential undiscounted payments under the Contingent Equity Contribution Agreement were approximately \$170 million.

Tesoro High Plains Pipeline

In July 2020, Tesoro High Plains Pipeline Company, LLC ("THPP"), a subsidiary of MPLX, received a Notification of Trespass Determination from the Bureau of Indian Affairs ("BIA") relating to a portion of the Tesoro High Plains Pipeline that crosses the Fort Berthold Reservation in North Dakota. The notification demanded the immediate cessation of pipeline operations and assessed trespass damages of approximately \$187 million. After subsequent appeal proceedings and in compliance with a new order issued by the BIA, in December 2020, THPP paid approximately \$4 million in assessed trespass damages and ceased use of the portion of the pipeline that crosses the property at issue. In March 2021, the BIA issued an order purporting to vacate the BIA's prior orders related to THPP's alleged trespass and direct the Regional Director of the BIA to reconsider the issue of THPP's alleged trespass and issue a new order. In April 2021, THPP filed a lawsuit in the District of North Dakota against the United States of America, the U.S. Department of the Interior and the BIA (together, the "U.S. Government Parties") challenging the March 2021 order purporting to vacate all previous orders related to THPP's alleged trespass. On February 8, 2022, the U.S. Government Parties filed their answer and counterclaims to THPP's suit claiming THPP is in continued trespass with respect to the pipeline and seek disgorgement of pipeline profits from June 1, 2013 to present, removal of the pipeline and remediation. We intend to vigorously defend ourselves against these counterclaims.

Martinez Refinery

We have resolved 99 NOVs received from the Bay Area Air Quality Management District ("BAAQMD") through settlement with the BAAQMD that includes payment of a cash penalty of approximately \$1.5 million. The NOVs were issued from 2011 to 2018 and allege violations of air quality regulations and the idled Martinez refinery's air permit.

On July 18, 2016, the U.S. Department of Justice ("DOJ") lodged a complaint on behalf of EPA and a Consent Decree in the U.S. Court for the Western District of Texas. Among other things, the Consent Decree required that the Martinez refinery meet certain annual emission limits for NOx by July 1, 2018. In 2018, TRMC informed EPA that it would need additional time to satisfy requirements of the Consent Decree. In 2019, TRMC and the United States entered into an agreement to amend the Consent Decree to resolve these issues. In light of the actions to strategically reposition the Martinez refinery to a renewable diesel facility, we are renegotiating the Consent Decree modification. Subject to final approval by the court, we expect that, contingent on TRMC completing the conversion of the Martinez refinery to renewable diesel production, the renegotiated Consent Decree modification will no longer require the installation of a Selective Catalytic Reduction system to control NOx emissions from the now-idled fluid catalytic cracking unit, but will result in an increased civil penalty.

Gathering and Processing

MPLX has been negotiating with the EPA with respect to multiple alleged violations of the National Emission Standards for Hazardous Air Pollutants by the Chapita, Coyote Wash, Island, River Bend and Wonsits Valley Compressor Stations in Utah as well as the Robinson Lake Gas Plant in North Dakota. MPLX is in the process of finalizing a settlement with the EPA pursuant to which MPLX expects to pay a cash penalty of \$2 million, incorporate additional remedial measures, mitigate excess emissions associated with events and enter into a consent decree covering MPLX gas plants and compressor stations located in Utah, North Dakota and Wyoming. We expect the settlement to be finalized later in 2023.

Edwardsville Incident

In March 2022, the State of Illinois brought an action in Madison County Circuit Court in Illinois against Marathon Pipe Line LLC, an indirect wholly owned subsidiary of MPLX, asserting various violations and demanding a permanent injunction and civil penalties in connection with a March 2022 release of crude oil on the Wood River to Patoka 22" line near Edwardsville, Illinois. We are negotiating a settlement of the allegations. We cannot currently estimate the amount of any civil penalty or the timing of the resolution of this matter but do not believe any civil penalty will have a material impact on our consolidated results of operations, financial position or cash flows.

Item 4. Mine Safety Disclosures

Not applicable

PART II

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

Our common stock is listed on the NYSE and traded under the symbol "MPC." As of February 16, 2023, there were 26,034 registered holders of our common stock.

Issuer Purchases of Equity Securities

The following table sets forth a summary of our purchases during the quarter ended December 31, 2022, of equity securities that are registered by MPC pursuant to Section 12 of the Securities Exchange Act of 1934, as amended:

Period	Total Number of Shares Purchased ^(a)	Average Price Paid per Share ^(b)	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Millions of Dollars	
				Maximum Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs ^{(c)(d)}	
10/01/2022-10/31/2022	991,728	\$ 105.08	989,787	\$	5,004
11/01/2022-11/30/2022	3,742,961	122.76	3,742,909		4,545
12/01/2022-12/31/2022	10,773,486	112.56	10,773,486		3,332
Total	15,508,175	114.54	15,506,182		

^(a) The amounts in this column include 1,941, 52 and 0 shares of our common stock delivered by employees to MPC, upon vesting of restricted stock, to satisfy tax withholding requirements in October, November and December, respectively.

^(b) Amounts in this column reflect the weighted average price paid for shares repurchased under our share repurchase authorizations and for shares tendered to us in satisfaction of employee tax withholding obligations upon the vesting of restricted stock granted under our stock plans. The weighted average price includes commissions paid to brokers during the quarter.

^(c) On February 2, 2022, we announced that our board of directors had approved an additional \$5 billion share repurchase authorization, which was exhausted during the fourth quarter of 2022. On August 2, 2022, we announced that our board of directors had approved an additional \$5 billion share repurchase authorization. On January 31, 2023, we announced that our board of directors had approved an additional \$5 billion share repurchase authorization, which authorization is not reflected in this column. These share repurchase authorizations have no expiration date.

^(d) Includes the payment of any commissions paid to brokers during the quarter.

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

All statements in this section, other than statements of historical fact, are forward-looking statements that are inherently uncertain. See "Disclosures Regarding Forward-Looking Statements" and Item 1A. Risk Factors for a discussion of the factors that could cause actual results to differ materially from those projected in these statements. The following information concerning our business, results of operations and financial condition should also be read in conjunction with the information included under Item 1. Business, Item 1A. Risk Factors and Item 8. Financial Statements and Supplementary Data.

EXECUTIVE SUMMARY

Business Update

For the year ended December 31, 2022, our results were favorably impacted by the continuing recovery in the environment in which our business operates. The increase in global demand for refined products and global commodity supply constraints have contributed to increases in the market prices of petroleum-based transportation fuels and in Refining & Marketing margins and Midstream throughputs. Supply has remained constrained for a variety of reasons, including, but not limited to, effects from refinery closures and disruptions in the crude oil and petroleum-based products markets resulting from the Russia-Ukraine conflict. We are unable to predict the potential effects that resurgences of COVID-19 or the continuance or escalation of the military conflict between Russia and Ukraine, and related sanctions or market disruptions, may have on our financial position and results. It remains uncertain how long these conditions may last or how severe they may become.

In 2022, data indicated a sharp rise in inflation in the U.S. and globally. Current and future inflationary effects may be driven by, among other things, supply chain disruptions, governmental stimulus or fiscal policies and increasing demand for certain goods and services as recovery from the COVID-19 pandemic continues. We have observed higher costs for feedstocks, labor and materials used in our business. We cannot predict the effect of rising interest rates, the concerns of a recession and higher inflation and fuel prices on demand for our products and services.

In response to this business environment, we continue to focus on the following priorities for our business:

Strengthen Competitive Position of Assets

We are committed to positioning our assets so that we are a leader in operational, financial, and sustainability performance and are evaluating the strength and fit of assets in our portfolio. Our goal is that each individual asset generates free-cash-flow back to the business and contributes to shareholder returns. With our investments, we are focused on high returning projects that we believe will enhance the competitiveness of our portfolio, including our investments in sustainable fuels and technologies that lower our carbon intensity as the global energy mix evolves.

Improve Commercial Performance

We are focused on leveraging advantaged raw material selection, new approaches in the commercial space to be more dynamic amidst changing market conditions and achieving technology improvements to advance our commercial performance. A near-term focus has been securing advantaged renewable feedstocks as we continue to advance our renewable fuels production capabilities. This includes exploring joint venture opportunities and strategic alliances within the renewable fuels value chain.

Continued Capital Discipline and Focus on Low-Cost Culture

We are committed to achieving operational excellence by reducing costs, improving efficiency, driving operational improvements and being disciplined in capital allocation. This means lowering our costs in all aspects of our business and challenging ourselves to be disciplined in every dollar we spend across our organization. We look to optimize our portfolio of investment opportunities to ensure efficient deployment of capital focusing on projects with the highest returns.

Commitment to Sustainability

Our approach to sustainability spans the environmental, social and governance dimensions of our business. That means strengthening resiliency by lowering the carbon intensity and conserving natural resources; innovating for the future by investing in renewables and emerging technologies; and embedding sustainability in decision-making and in how we engage our people and many stakeholders. Specifically, in 2022, we were the first among U.S. independent refiners to establish a 2030 target to reduce absolute Scope 3 - Category 11 GHG emissions. This goal added to our existing targets for reducing Scope 1 & 2 GHG emissions intensity, for lowering methane emissions intensity and for lowering our freshwater withdrawal intensity. Additionally, MPLX is progressing towards meeting its 2025 and 2030 methane intensity reduction goals, as well as its biodiversity target, by applying sustainable landscapes to its compatible right of ways.

Strategic Updates

Martinez Renewable Fuels Project Joint Venture

On September 21, 2022, MPC closed on the formation of the Martinez Renewable joint venture. The partnership is structured as a 50/50 joint venture with Neste expected to contribute a total of \$1 billion. These contributions will continue into 2023. At the closing date, MPC contributed property, plant and equipment, inventory, and working capital valued at \$1.47 billion and Neste contributed \$728 million in cash. MPC recorded a gain of \$549 million resulting from the difference between the carrying value and fair value of the contributed property, plant and equipment and inventory. Subsequent to the closing, the joint venture paid a special distribution to MPC of \$500 million, which is reflected as a return of capital in MPC's consolidated statements of cash flows. At December 31, 2022, MPC's investment value in the entity is approximately \$1.07 billion.

MPC will continue to manage project execution and operate the facility once construction is complete. The annual feedstock supply requirements are split between the joint venture partners, which include specific commitments to supply advantaged feedstocks. The annual production output will be shared evenly between the joint venture partners, and each partner will have the ability to market its share of the products. The joint venture, being optimally located to strengthen both partners' footprint in renewable fuels, will utilize existing processing infrastructure and diverse inbound and outbound logistics.

This strategic partnership is expected to advance the current project objectives of delivering low carbon intensity fuels to support California's climate goals. MPC and Neste will leverage their complementary core competencies in the joint venture. MPC brings experience in renewable diesel facility conversion, large capital project execution and operating expertise in the California market. Neste brings knowledge in sustainable feedstock sourcing and in renewable liquid fuels production. The joint venture reflects both partners' commitment to obtain low carbon intensity feedstocks to achieve the project objectives of providing fuels that meet the demand driven by the Low Carbon Fuel Standard.

The facility is expected to ramp up to producing 730 million gallons per year by the end of 2023, with pretreatment capabilities coming online in 2023.

Share Repurchase Authorization

As of December 31, 2022, MPC had \$3.33 billion remaining under its share repurchase authorizations. On January 31, 2023, the company announced that its Board of Directors had approved an incremental \$5.0 billion share repurchase authorization. Future repurchases under this incremental authorization will depend on the macro environment, cash available after opportunities for capital investment and growth of the business and market conditions. This authorization is in addition to a \$5.0 billion share repurchase authorization announced on August 2, 2022 and a \$5.0 billion share repurchase authorization announced on February 2, 2022. The authorizations have no expiration date.

Results

During the first quarter of 2022, our chief operating decision maker (“CODM”) began to evaluate the performance of our segments using segment adjusted EBITDA. We have modified our presentation of segment performance to be consistent with this change, including prior periods presented for consistent and comparable presentation. Amounts included in net income and excluded from segment adjusted EBITDA include: (i) depreciation and amortization; (ii) provision for income taxes; (iii) net interest and other financial costs; (iv) noncontrolling interests; (v) turnaround expenses and (vi) other adjustments as deemed necessary. These items are either: (i) believed to be non-recurring in nature; (ii) not believed to be allocable or controlled by the segment; or (iii) are not tied to the operational performance of the segment.

Select results for continuing operations for 2022 and 2021 are reflected in the following table.

<i>(Millions of dollars)</i>	2022	2021
Segment adjusted EBITDA for reportable segments		
Refining & Marketing	\$ 19,261	\$ 3,518
Midstream	5,772	5,410
Total reportable segments	<u>\$ 25,033</u>	<u>\$ 8,928</u>
Reconciliation of segment adjusted EBITDA for reportable segments to income from continuing operations before income taxes		
Total reportable segments	\$ 25,033	\$ 8,928
Corporate	(698)	(587)
Refining planned turnaround costs	(1,122)	(582)
Storm impacts	—	(70)
LIFO inventory credit	148	—
Gain on sale of assets ^(a)	1,058	—
Renewable volume obligation requirements ^(b)	238	—
Litigation	27	—
Impairments ^(c)	—	(13)
Idling facility expenses	—	(12)
Depreciation and amortization ^(d)	(3,215)	(3,364)
Net interest and other financial costs	(1,000)	(1,483)
Income from continuing operations before income taxes	<u>\$ 20,469</u>	<u>\$ 2,817</u>

^(a) Includes the non-cash gain related to the contribution of assets by MPC on the formation of the Martinez Renewable joint venture and the non-cash gain on lease reclassification. See Item 8. Financial Statements and Supplementary Data - Notes 16 and 28.

^(b) Represents retroactive changes in renewable volume obligation requirements published by the EPA in June 2022 for the 2020 and 2021 annual obligations.

^(c) Impairment of equity method investments. See Item 8. Financial Statements and Supplementary Data - Note 7.

^(d) 2021 includes \$56 million of impairments of long-lived assets.

The following table includes net income per diluted share data.

Net income per diluted share	2022	2021
Continuing operations	\$ 27.98	\$ 2.02
Discontinued operations	0.14	13.22
Net income attributable to MPC	<u>\$ 28.12</u>	<u>\$ 15.24</u>

Net income attributable to MPC increased \$4.78 billion, or \$12.88 per diluted share, in 2022 compared to 2021 primarily due to increased average refined product sales prices and volumes and non-cash net gains on the disposal of assets, partially offset by increased operating costs and the absence of a gain on the sale of Speedway and a partial period of income from discontinued operations due to the sale of the Speedway business on May 14, 2021.

See Item 8. Financial Statements and Supplementary Data – Note 5 for additional information on discontinued operations.

Refer to the Results of Operations section for a discussion of financial results by segment for the three years ended December 31, 2022.

MPLX

We received limited partner distributions of \$1.87 billion and \$2.16 billion from MPLX during 2022 and 2021, respectively. The decrease in 2022 is primarily due to a supplemental distribution amount of \$0.5750 per common unit in the third quarter of 2021 that did not recur in 2022. We owned approximately 647 million MPLX common units at December 31, 2022 with a market value of \$21.26 billion based on the December 30, 2022 closing unit price of \$32.84. On January 25, 2023, MPLX declared a quarterly cash distribution of \$0.7750 per common unit, which was paid February 14, 2023. As a result, MPLX made distributions totaling \$776 million to its common unitholders. MPC's portion of this distribution was approximately \$502 million.

During the year ended December 31, 2022, MPLX repurchased 15 million common units at an average cost per unit of \$31.96 and paid \$491 million of cash. As of December 31, 2022, \$846 million remained available under the authorization for future repurchases.

On February 9, 2023, MPLX issued \$1.1 billion aggregate principal amount of 5.00% senior notes due 2033 and \$500 million aggregate principal amount of 5.65% senior notes due 2053 in an underwritten public offering.

On February 15, 2023, MPLX redeemed all of the 600,000 outstanding Series B preferred units at the redemption price of \$1,000 per unit. The semi-annual distribution due to Series B unitholders on February 15, 2023, was also paid on that date, in the usual manner. MPLX also provided notice to redeem all of MPLX's and MarkWest's \$1.0 billion aggregate principal amount of 4.50% senior notes due July 2023.

See Item 8. Financial Statements and Supplementary Data – Note 6 for additional information on MPLX.

OVERVIEW OF SEGMENTS

Refining & Marketing

Refining & Marketing segment adjusted EBITDA depends largely on our refinery throughputs, Refining & Marketing margin, refining operating costs and distribution costs. Our total refining capacity was 2,898 mbpcd, 2,887 mbpcd and 2,874 mbpcd as of December 31, 2022, 2021 and 2020, respectively.

Our Refining & Marketing margin is the difference between the prices of refined products sold and the costs of crude oil and other charge and blendstocks refined, including the costs to transport these inputs to our refineries and the costs of products purchased for resale. The crack spread is a measure of the difference between market prices for refined products and crude oil, commonly used by the industry as a proxy for the refining margin. Crack spreads can fluctuate significantly, particularly when prices of refined products do not move in the same relationship as the cost of crude oil. As a performance benchmark and a comparison with other industry participants, we calculate Gulf Coast, Mid-Continent and West Coast crack spreads that we believe most closely track our operations and slate of products. The following will be used for these crack-spread calculations:

- The Gulf Coast crack spread uses three barrels of MEH crude producing two barrels of USGC CBOB gasoline and one barrel of USGC ULSD;
- The Mid-Continent crack spread uses three barrels of WTI crude producing two barrels of Chicago CBOB gasoline and one barrel of Chicago ULSD; and
- The West Coast crack spread uses three barrels of ANS crude producing two barrels of LA CARBOB and one barrel of LA CARB Diesel.

Our refineries process a variety of sweet and sour grades of crude oil, which typically can be purchased at a discount to the crude oils referenced in our Gulf Coast, Mid-Continent and West Coast crack spreads. The amount of these discounts, which we refer to as the sweet differential and the sour differential, can vary significantly, causing our Refining & Marketing margin to differ from blended crack spreads. In general, larger sweet and sour differentials will enhance our Refining & Marketing margin.

Future crude oil differentials will be dependent on a variety of market and economic factors, as well as U.S. energy policy.

The following table provides sensitivities showing an estimated change in annual Refining & Marketing adjusted EBITDA due to potential changes in market conditions.

(In millions)

Blended crack spread sensitivity ^(a) (per \$1.00/barrel change)	\$	1,080
Sour differential sensitivity ^(b) (per \$1.00/barrel change)		500
Sweet differential sensitivity ^(c) (per \$1.00/barrel change)		500
Natural gas price sensitivity ^(d) (per \$1.00/MMBtu)		310

^(a) Crack spread based on 40 percent MEH, 40 percent WTI and 20 percent ANS with Gulf Coast, Mid-Continent and West Coast product pricing, respectively, and assumes all other differentials and pricing relationships remain unchanged.

^(b) Sour crude oil basket consists of the following crudes: ANS, Argus Sour Crude Index, Maya and Western Canadian Select. We assume approximately 50 percent of the crude processed at our refineries in 2023 will be sour crude.

^(c) Sweet crude oil basket consists of the following crudes: Bakken, Brent, MEH, WTI-Cushing and WTI-Midland. We assume approximately 50 percent of the crude processed at our refineries in 2023 will be sweet crude.

^(d) This is consumption based exposure for our Refining & Marketing segment and does not include the sales exposure for our Midstream segment.

In addition to the market changes indicated by the crack spreads, the sour differential and the sweet differential, our Refining & Marketing margin is impacted by factors such as:

- the selling prices realized for refined products;
- the types of crude oil and other charge and blendstocks processed;
- our refinery yields;
- the cost of products purchased for resale;
- the impact of commodity derivative instruments used to hedge price risk;
- the potential impact of LCM adjustments to inventories in periods of declining prices;
- the potential impact of LIFO liquidation charges due to draw-downs from historic inventory levels; and
- the cost of purchasing RINs in the open market to comply with RFS2 requirements.

Inventories are stated at the lower of cost or market. Costs of crude oil, refinery feedstocks and refined products are stated under the LIFO inventory costing method and aggregated on a consolidated basis for purposes of assessing if the cost basis of these inventories may have to be written down to market values. At December 31, 2022, market values for refined products exceed their cost basis and, therefore, there is no LCM inventory valuation reserve at the end of the year. Based on movements of refined product prices, future inventory valuation adjustments could have a negative effect to earnings. Such losses are subject to reversal in subsequent periods if prices recover.

Refining & Marketing segment adjusted EBITDA is also affected by changes in refining operating costs in addition to committed distribution costs. Changes in operating costs are primarily driven by the cost of energy used by our refineries, including purchased natural gas, and the level of maintenance costs. Distribution costs primarily include long-term agreements with MPLX, which as discussed below include minimum commitments to MPLX, and will negatively impact segment adjusted EBITDA in periods when throughput or sales are lower or refineries are idled.

We have various long-term, fee-based commercial agreements with MPLX. Under these agreements, MPLX, which is reported in our Midstream segment, provides transportation, storage, distribution and marketing services to our Refining & Marketing segment. Certain of these agreements include commitments for minimum quarterly throughput and distribution volumes of crude oil and refined products and minimum storage volumes of crude oil, refined products and other products. Certain other agreements include commitments to pay for 100 percent of available capacity for certain marine transportation and refining logistics assets.

Midstream

Our Midstream segment transports, stores, distributes and markets crude oil and refined products, principally for our Refining & Marketing segment. The profitability of our pipeline transportation operations primarily depends on tariff rates and the volumes shipped through the pipelines. The profitability of our marine operations primarily depends on the quantity and availability of our vessels and barges. The profitability of our light product terminal operations primarily depends on the throughput volumes at these terminals. The profitability of our fuels distribution services primarily depends on the sales volumes of certain refined products. The profitability of our refining logistics operations depends on the quantity and availability of our refining logistics assets. A majority of the crude oil and refined product shipments on our pipelines and marine vessels and the refined product throughput at our terminals serve our Refining & Marketing segment. Our refining logistics assets and fuels distribution services are used solely by our Refining & Marketing segment.

As discussed above in the Refining & Marketing section, MPLX, which is reported in our Midstream segment, has various long-term, fee-based commercial agreements related to services provided to our Refining & Marketing segment. Under these agreements, MPLX has received various commitments of minimum throughput, storage and distribution volumes as well as commitments to pay for all available capacity of certain assets. The volume of crude oil that we transport is directly affected by the supply of, and refiner demand for, crude oil in the markets served directly by our crude oil pipelines, terminals and marine operations. Key factors in this supply and demand balance are the production levels of crude oil by producers in various regions or fields, the availability and cost of alternative modes of transportation, the volumes of crude oil processed at refineries and refinery and transportation system maintenance levels. The volume of refined products that we transport, store, distribute and market is directly affected by the production levels of, and user demand for, refined products in the markets served by our refined product pipelines and marine operations. In most of our markets, demand for gasoline and distillate peaks during the summer driving season, which extends from May through September of each year, and declines during the fall and winter months. As with crude oil, other transportation alternatives and system maintenance levels influence refined product movements.

Our Midstream segment also gathers and processes natural gas and NGLs. NGL and natural gas prices are volatile and are impacted by changes in fundamental supply and demand, as well as market uncertainty, availability of NGL transportation and fractionation capacity and a variety of additional factors that are beyond our control. Our Midstream segment profitability is affected by prevailing commodity prices primarily as a result of processing or conditioning at our own or third-party processing plants, purchasing and selling or gathering and transporting volumes of natural gas at index-related prices and the cost of third-party transportation and fractionation services. To the extent that commodity prices influence the level of natural gas drilling by our producer customers, such prices also affect profitability.

RESULTS OF OPERATIONS

The following discussion includes comments and analysis relating to our results of operations for the years ended December 31, 2022, 2021 and 2020. This discussion should be read in conjunction with Item 8. Financial Statements and Supplementary Data and is intended to provide investors with a reasonable basis for assessing our historical operations, but should not serve as the only criteria for predicting our future performance.

Consolidated Results of Operations

<i>(Millions of dollars)</i>	2022	2021	2022 vs. 2021 Variance	2020	2021 vs. 2020 Variance
Revenues and other income:					
Sales and other operating revenues ^(a)	\$ 177,453	\$ 119,983	\$ 57,470	\$ 69,779	\$ 50,204
Income (loss) from equity method investments	655	458	197	(935)	1,393
Net gain on disposal of assets	1,061	21	1,040	70	(49)
Other income	783	468	315	118	350
Total revenues and other income	<u>179,952</u>	<u>120,930</u>	<u>59,022</u>	<u>69,032</u>	<u>51,898</u>
Costs and expenses:					
Cost of revenues (excludes items below)	151,671	110,008	41,663	65,733	44,275
Impairment expense	—	—	—	8,426	(8,426)
Depreciation and amortization	3,215	3,364	(149)	3,375	(11)
Selling, general and administrative expenses	2,772	2,537	235	2,710	(173)
Restructuring expenses	—	—	—	367	(367)
Other taxes	825	721	104	668	53
Total costs and expenses	<u>158,483</u>	<u>116,630</u>	<u>41,853</u>	<u>81,279</u>	<u>35,351</u>
Income (loss) from continuing operations	21,469	4,300	17,169	(12,247)	16,547
Net interest and other financial costs	1,000	1,483	(483)	1,365	118
Income (loss) from continuing operations before income taxes	20,469	2,817	17,652	(13,612)	16,429
Provision (benefit) for income taxes on continuing operations	4,491	264	4,227	(2,430)	2,694
Income (loss) from continuing operations, net of tax	15,978	2,553	13,425	(11,182)	13,735
Income from discontinued operations, net of tax	72	8,448	(8,376)	1,205	7,243
Net income (loss)	<u>16,050</u>	<u>11,001</u>	<u>5,049</u>	<u>(9,977)</u>	<u>20,978</u>
Less net income (loss) attributable to:					
Redeemable noncontrolling interest	88	100	(12)	81	19
Noncontrolling interests	1,446	1,163	283	(232)	1,395
Net income (loss) attributable to MPC	<u>\$ 14,516</u>	<u>\$ 9,738</u>	<u>\$ 4,778</u>	<u>\$ (9,826)</u>	<u>\$ 19,564</u>

^(a) In accordance with discontinued operations accounting, Speedway sales to retail customers and net results are reflected in Income from discontinued operations, net of tax, and Refining & Marketing intercompany sales to Speedway are presented as third-party sales through the close of the sale on May 14, 2021.

2022 Compared to 2021

Net income attributable to MPC increased \$4.78 billion in 2022 compared to 2021, primarily due to increased average refined product sales prices and volumes and net gains on the disposal of assets, partially offset by increased operating costs and the absence of a gain on the sale of Speedway and a partial period of income from discontinued operations due to the sale of the Speedway business on May 14, 2021.

Total revenues and other income increased \$59.02 billion in 2022 compared to 2021 primarily due to:

- increased sales and other operating revenues of \$57.47 billion primarily due to increased average refined product sales prices of \$0.96 per gallon, or 47 percent, and refined product sales volumes of 83 mbpd, or 2 percent, largely due to continuing recovery in demand for our products across all our regions;
- increased income from equity method investments of \$197 million largely due to increased income from midstream equity affiliates;

- increased net gains on disposal of assets of \$1.04 billion mainly due to a gain of \$549 million on the formation of the Martinez Renewable joint venture and a gain of \$509 million on a lease reclassification; and
- increased other income of \$315 million primarily due to higher income on RIN sales.

Total costs and expenses increased \$41.85 billion in 2022 compared to 2021 primarily due to:

- increased cost of revenues of \$41.66 billion primarily due to higher crude oil costs and finished product purchases;
- decreased depreciation and amortization of \$149 million mainly due to 2021 Midstream asset impairments and assets that were fully depreciated in 2021;
- increased selling, general and administrative expenses of \$235 million mainly due to increased salaries, benefits and employee related expenses, credit card processing fees, contract services and insurance; and
- increased other taxes of \$104 million largely due to retroactive operating tax assessments for prior periods.

Net interest and other financial costs decreased \$483 million largely due to increased interest income, decreased debt retirement expenses related to the redemption of MPC senior notes in 2021, decreased interest expense due to lower MPC borrowings and decreased pension and other postretirement non-service costs, partially offset by increased interest expense due to higher MPLX borrowings. We capitalized interest of \$104 million in 2022 and \$73 million in 2021. See Item 8. Financial Statements and Supplementary Data – Note 13 for further details.

We recorded a combined federal, state and foreign income tax expense of \$4.49 billion for the year ended December 31, 2022, which was higher than the tax computed at the U.S. statutory rate primarily due to state taxes, partially offset by permanent tax benefits related to net income attributable to noncontrolling interests. We recorded a combined federal, state and foreign income tax expense of \$264 million for the year ended December 31, 2021, which was lower than the tax computed at the U.S. statutory rate primarily due to certain permanent tax benefits related to net income attributable to noncontrolling interests and a change in benefit related to the net operating loss (“NOL”) carryback provided under the Coronavirus Aid, Relief, and Economic Security Act (“CARES Act”), partially offset by state taxes. See Item 8. Financial Statements and Supplementary Data – Note 14 for further details.

Net income attributable to noncontrolling interests increased \$283 million mainly due to an increase in MPLX’s net income.

2021 Compared to 2020

Net income attributable to MPC increased \$19.56 billion in 2021 compared to 2020 primarily due to the gain on the sale of Speedway, the absence of impairment expenses and a LIFO liquidation charge and increases in average refined product sales prices and volumes, partially offset by a partial period of income from discontinued operations due to the sale of the Speedway business on May 14, 2021. See Segment Results for additional information.

Total revenues and other income increased \$51.90 billion in 2021 compared to 2020 primarily due to:

- increased sales and other operating revenues of \$50.20 billion primarily due to increased average refined product sales prices of \$0.80 per gallon, or 65 percent, and refined product sales volumes of 203 mbpd, or 6 percent, largely due to continuing economic recovery from the impact of the COVID-19 pandemic in 2020;
- increased income from equity method investments of \$1.39 billion largely due to impairments of equity method investments of \$1.32 billion in 2020 primarily driven by the effects of the COVID-19 pandemic and the decline in commodity prices; and
- increased other income of \$350 million primarily due to higher income on RIN sales.

Total costs and expenses decreased \$35.35 billion in 2021 compared to 2020 primarily due to:

- increased cost of revenues of \$44.28 billion primarily due to higher refined product sales volumes in addition to higher crude oil and refined product raw material costs, partially offset by the absence of a LIFO liquidation charge in 2020 of \$561 million;
- decreased impairment expense of \$8.43 billion due to impairments recorded for goodwill and long-lived assets in 2020 primarily driven by the effects of COVID-19 and the decline in commodity prices;
- decreased selling, general and administrative expenses of \$173 million mainly due to cost reductions realized from our 2020 workforce reduction and other cost control efforts; and
- decreased restructuring expenses of \$367 million related to the idling of the Martinez and Gallup refineries and costs related to our announced workforce reduction in 2020. See Item 8. Financial Statements and Supplementary Data – Note 19 for additional information.

Net interest and other financial costs increased \$118 million largely due to debt retirement expenses related to the redemption of MPC senior notes and pension settlement losses of \$75 million, partially offset by decreased interest expense due to lower MPLX and MPC borrowings. We capitalized interest of \$73 million in 2021 and \$129 million in 2020. See Item 8. Financial Statements and Supplementary Data – Note 13 for further details.

We recorded a combined federal, state and foreign income tax expense of \$264 million for the year ended December 31, 2021, which was lower than the tax computed at the U.S. statutory rate primarily due to certain permanent tax benefits related to net income attributable to noncontrolling interests and a change in benefit related to the NOL carryback provided under the CARES Act, partially offset by state taxes. We recorded a combined federal, state and foreign income tax benefit of \$2.43 billion for the year ended December 31, 2020, which is lower than the tax computed at the U.S. statutory rate primarily due to a significant amount of our pre-tax loss consisting of non-tax deductible goodwill impairment charges, partially offset by the tax rate differential resulting from the NOL carryback provided under the CARES Act. Additionally, our effective tax rate is generally benefited by our noncontrolling interest in MPLX, but this benefit was lower for the year ended December 31, 2020 due to goodwill and other impairment charges recorded by MPLX. See Item 8. Financial Statements and Supplementary Data – Note 14 for further details.

Net income attributable to noncontrolling interests increased \$1.40 billion mainly due to an increase in MPLX's net income largely due to impairment expense recognized during 2020.

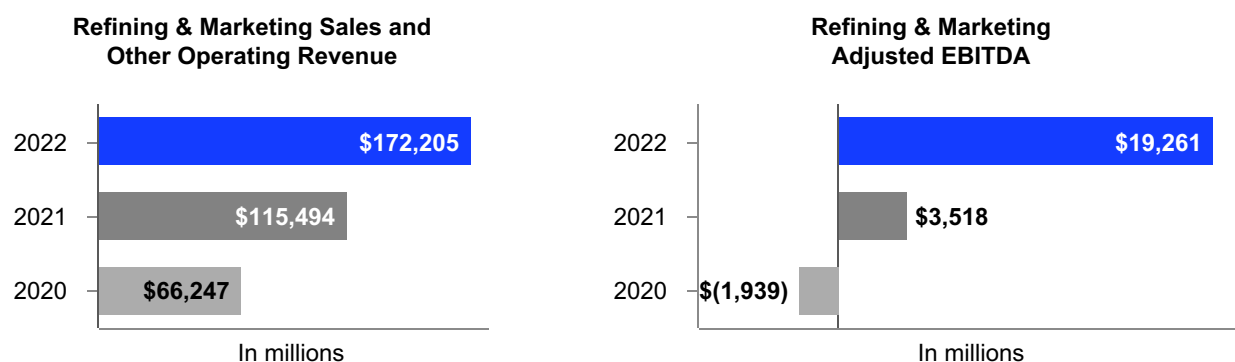
Segment Results

We classify our business in the following reportable segments: Refining & Marketing and Midstream. Segment adjusted EBITDA represents adjusted EBITDA attributable to the reportable segments. Amounts included in net income and excluded from segment adjusted EBITDA include: (i) depreciation and amortization; (ii) provision for income taxes; (iii) net interest and other financial costs; (iv) noncontrolling interests; (v) turnaround expenses and (vi) other adjustments as deemed necessary. These items are either: (i) believed to be non-recurring in nature; (ii) not believed to be allocable or controlled by the segment; or (iii) are not tied to the operational performance of the segment.

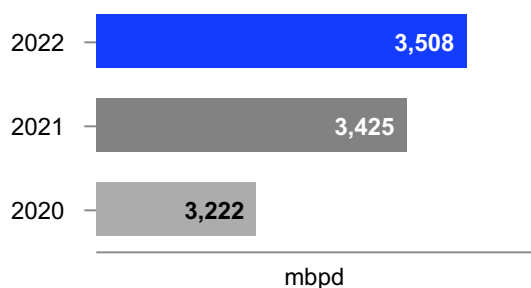
Our segment adjusted EBITDA for reportable segments was approximately \$25.03 billion, \$8.93 billion and \$3.12 billion for the years ended December 31, 2022, 2021 and 2020, respectively.

Refining & Marketing

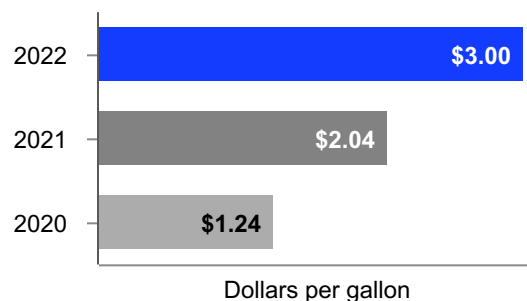
The following includes key financial and operating data for 2022, 2021 and 2020.



Refined Product Sales Volumes (a)



Average Refined Product Sales Prices



(a) Includes intersegment sales to Midstream and sales destined for export.

Refining & Marketing Operating Statistics	2022	2021	2020
Net refinery throughput (<i>mbpd</i>)	2,951	2,799	2,583
Refining & Marketing margin, excluding LIFO inventory credit/charge per barrel ^{(a)(b)}	\$ 28.10	\$ 13.36	\$ 8.96
LIFO inventory credit (charge) per barrel	0.14	—	(0.59)
Refining & Marketing margin per barrel ^{(a)(b)}	28.24	13.36	8.37
Less:			
Refining operating costs per barrel ^(c)	5.41	5.02	5.68
Distribution costs per barrel	4.89	5.04	5.37
LIFO inventory credit (charge) per barrel	0.14	—	(0.59)
Other per barrel ^(d)	(0.08)	(0.14)	(0.03)
Refining & Marketing adjusted EBITDA per barrel	17.88	3.44	(2.06)
Less:			
Storm impacts on refining operating cost per barrel ^(e)	—	0.05	—
Refining planned turnaround costs per barrel	1.04	0.57	0.88
LIFO inventory (credit) charge per barrel	(0.14)	—	0.59
Depreciation and amortization per barrel	1.72	1.83	1.96
Refining & Marketing segment income (loss) per barrel	\$ 15.26	\$ 0.99	\$ (5.49)
Per barrel fees paid to MPLX included in distribution costs above	\$ 3.39	\$ 3.40	\$ 3.66

(a) Sales revenue less cost of refinery inputs and purchased products, divided by net refinery throughput.

(b) See "Non-GAAP Measures" section for reconciliation and further information regarding this non-GAAP measure.

(c) Includes refining operating and major maintenance costs. Excludes planned turnaround and depreciation and amortization expense.

(d) Includes income (loss) from equity method investments, net gain (loss) on disposal of assets and other income.

(e) Storms in the first and third quarters of 2021 resulted in higher costs, including maintenance and repairs.

The following table presents certain benchmark prices in our marketing areas and market indicators that we believe are helpful in understanding the results of our Refining & Marketing segment. The benchmark crack spreads below do not reflect the market cost of RINs necessary to meet EPA renewable volume obligations for attributable products under the Renewable Fuel Standard.

Benchmark spot prices (<i>dollars per gallon</i>)	2022	2021	2020
Chicago CBOB unleaded regular gasoline	\$ 2.87	\$ 2.02	\$ 1.07
Chicago ultra-low sulfur diesel	3.43	2.06	1.19
USGC CBOB unleaded regular gasoline	2.76	2.01	1.10
USGC ultra-low sulfur diesel	3.46	2.01	1.20
LA CARBOB	3.29	2.20	1.28
LA CARB diesel	3.51	2.10	1.30
Market Indicators (<i>dollars per barrel</i>)			
WTI	\$ 94.33	\$ 68.11	\$ 39.34
MEH	96.19	69.01	—
LLS	—	—	41.15
ANS	98.98	70.56	42.28
Crack Spreads			
Mid-Continent WTI 3-2-1	\$ 26.93	\$ 10.95	\$ 5.34
USGC MEH 3-2-1	22.17	8.89	—
USGC LLS 3-2-1	—	—	3.77
West Coast ANS 3-2-1	34.91	13.80	9.26
Blended 3-2-1 ^(a)	26.62	10.70	5.64
Crude Oil Differentials			
Sweet	\$ 0.21	\$ (0.47)	\$ (1.07)
Sour	(6.81)	(4.05)	(3.45)

^(a) The blended crack spreads for 2022, 2021 and the fourth quarter of 2020 are weighted 40 percent of the USGC crack spread, 40 percent of the Mid-Continent crack spread and 20 percent of the West Coast crack spread. The blended crack spreads for the first three quarters of 2020 are weighted 38 percent of the USGC crack spread, 38 percent of the Mid-Continent crack spread and 24 percent of the West Coast crack spread. These blends are based on MPC's refining capacity by region in each period. Beginning in the first quarter of 2021, the prompt price for USGC was transitioned from LLS to MEH.

2022 Compared to 2021

Refining & Marketing segment revenues increased \$56.71 billion primarily due to increased average refined product sales prices of \$0.96 per gallon and higher refined product sales volumes, which increased 83 mbpd.

Refinery crude oil capacity utilization was 96 percent during 2022 and net refinery throughputs increased 152 mbpd primarily due to continuing recovery in demand for our products across all our regions.

Refining & Marketing segment adjusted EBITDA increased \$15.74 billion primarily driven by higher per barrel margins, partially offset by increased refining operating costs and distribution costs, both excluding depreciation and amortization, and turnaround costs.

Refining & Marketing margin, excluding LIFO inventory credit of \$148 million, was \$28.10 per barrel for 2022 compared to \$13.36 per barrel for 2021. Refining & Marketing margin is affected by the market indicators shown earlier, which use spot market values and an estimated mix of crude purchases and product sales. Based on the market indicators and our crude oil throughput, we estimate a net positive impact of approximately \$18 billion on Refining & Marketing margin, primarily due to higher crack spreads. Our reported Refining & Marketing margin differs from market indicators due to the mix of crudes purchased and their costs, the effects of market structure on our crude oil acquisition prices, RIN prices on the crack spread and other items like refinery yields and other feedstock variances, direct dealer fuel margin, and for 2022, a LIFO inventory credit of \$148 million. These factors had an estimated net negative impact on Refining & Marketing segment adjusted EBITDA of approximately \$1.5 billion in 2022 compared to 2021.

For the year ended December 31, 2022, refining operating costs, excluding depreciation and amortization and storm impacts, were \$5.83 billion. This was an increase of \$708 million, or \$0.39 per barrel, compared to the year ended December 31, 2021 primarily due to an increase in energy costs largely as a result of higher natural gas and electricity prices.

Distribution costs, excluding depreciation and amortization, were \$5.27 billion and \$5.15 billion for 2022 and 2021, respectively, and include fees paid to MPLX of \$3.65 billion and \$3.47 billion for 2022 and 2021, respectively. On a per barrel basis, distribution costs, excluding depreciation and amortization, decreased \$0.15 due to higher throughput.

Refining planned turnaround costs increased \$540 million, or \$0.47 per barrel, due to the scope and timing of turnaround activity.

Depreciation and amortization per barrel decreased by \$0.11, primarily due to a decrease in costs and an increase in throughput.

We purchase RINs to satisfy a portion of our RFS2 compliance. Our expenses associated with purchased RINs were \$2.40 billion in 2022 and \$1.49 billion in 2021 and are included in Refining & Marketing margin. The increase in 2022 was primarily due to higher weighted average RIN costs and an increase in RIN obligations due to higher production.

2021 Compared to 2020

Refining & Marketing segment revenues increased \$49.25 billion primarily due to increased average refined product sales prices of \$0.80 per gallon and higher refined product sales volumes, which increased 203 mbpd.

Refinery crude oil capacity utilization was 91 percent during 2021 and net refinery throughputs increased 216 mbpd primarily due to continuing economic recovery from the impact of the COVID-19 pandemic in 2020.

Refining & Marketing segment adjusted EBITDA increased \$5.46 billion primarily driven by higher blended crack spreads.

Refining & Marketing margin, excluding LIFO inventory charge, was \$13.36 per barrel for 2021 compared to \$8.96 per barrel for 2020. Refining & Marketing margin is affected by the market indicators shown earlier, which use spot market values and an estimated mix of crude purchases and product sales. Based on the market indicators and our crude oil throughput, we estimate a net positive impact of \$5.0 billion on Refining & Marketing margin, primarily due to higher crack spreads. Our reported Refining & Marketing margin differs from market indicators due to the mix of crudes purchased and their costs, the effects of market structure on our crude oil acquisition prices, RIN prices on the crack spread and other items like refinery yields and other feedstock variances, direct dealer fuel margin, and for 2020, a LIFO liquidation charge of \$561 million. These factors had an estimated net positive impact on Refining & Marketing segment adjusted EBITDA of approximately \$700 million, including the LIFO inventory charge, in 2021 compared to 2020.

For the year ended December 31, 2021, refining operating costs, excluding depreciation and amortization and storm impacts, were \$5.13 billion. This was a decrease of \$241 million, or \$0.66 per barrel, compared to the year ended December 31, 2020 as we took actions to reduce costs in response to the economic effects of the COVID-19 pandemic, including idling portions of our refining capacity, partially offset by an increase in energy costs largely as a result of higher natural gas prices.

Distribution costs, excluding depreciation and amortization, were \$5.15 billion and \$5.08 billion for 2021 and 2020, respectively, and include fees paid to MPLX of \$3.47 billion and \$3.46 billion for 2021 and 2020, respectively. On a per barrel basis, distribution costs, excluding depreciation and amortization, decreased \$0.33 due to increased throughput.

Refining planned turnaround costs decreased \$250 million, or \$0.31 per barrel, due to the timing of turnaround activity and an increase in throughput.

Depreciation and amortization per barrel decreased by \$0.13, primarily due to an increase in throughput partially offset by an increase in costs.

We purchase RINs to satisfy a portion of our RFS2 compliance. Our expenses associated with purchased RINs were \$1.49 billion in 2021 and \$606 million in 2020 and are included in Refining & Marketing margin. The increase in 2021 was primarily due to higher weighted average RIN costs.

Supplemental Refining & Marketing Statistics

	2022	2021	2020
Refining & Marketing Operating Statistics			
Crude oil capacity utilization percent ^(a)	96	91	82
Refinery throughputs (mbpd):			
Crude oil refined	2,761	2,621	2,418
Other charge and blendstocks	190	178	165
Net refinery throughput	2,951	2,799	2,583
Sour crude oil throughput percent	47	47	49
Sweet crude oil throughput percent	53	53	51
Refined product yields (mbpd):			
Gasoline ^(b)	1,494	1,446	1,314
Distillates ^(b)	1,079	965	905
NGLs and petrochemicals ^(b)	178	250	244
Asphalt	89	91	81
Propane	70	52	51
Heavy fuel oil	73	31	28
Total	2,983	2,835	2,623
Refined product export sales volumes (mbpd) ^(c)	315	371	340

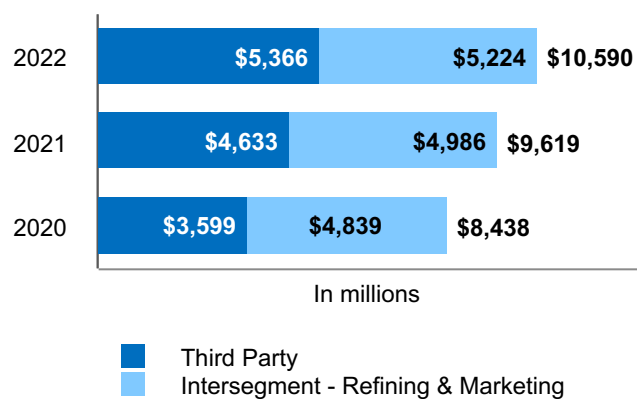
^(a) Based on calendar-day capacity, which is an annual average that includes down time for planned maintenance and other normal operating activities.

^(b) Product yields include renewable production.

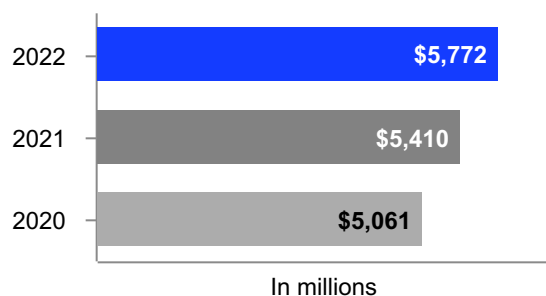
^(c) Represents fully loaded export cargoes for each time period. These sales volumes are included in the total sales volumes amounts.

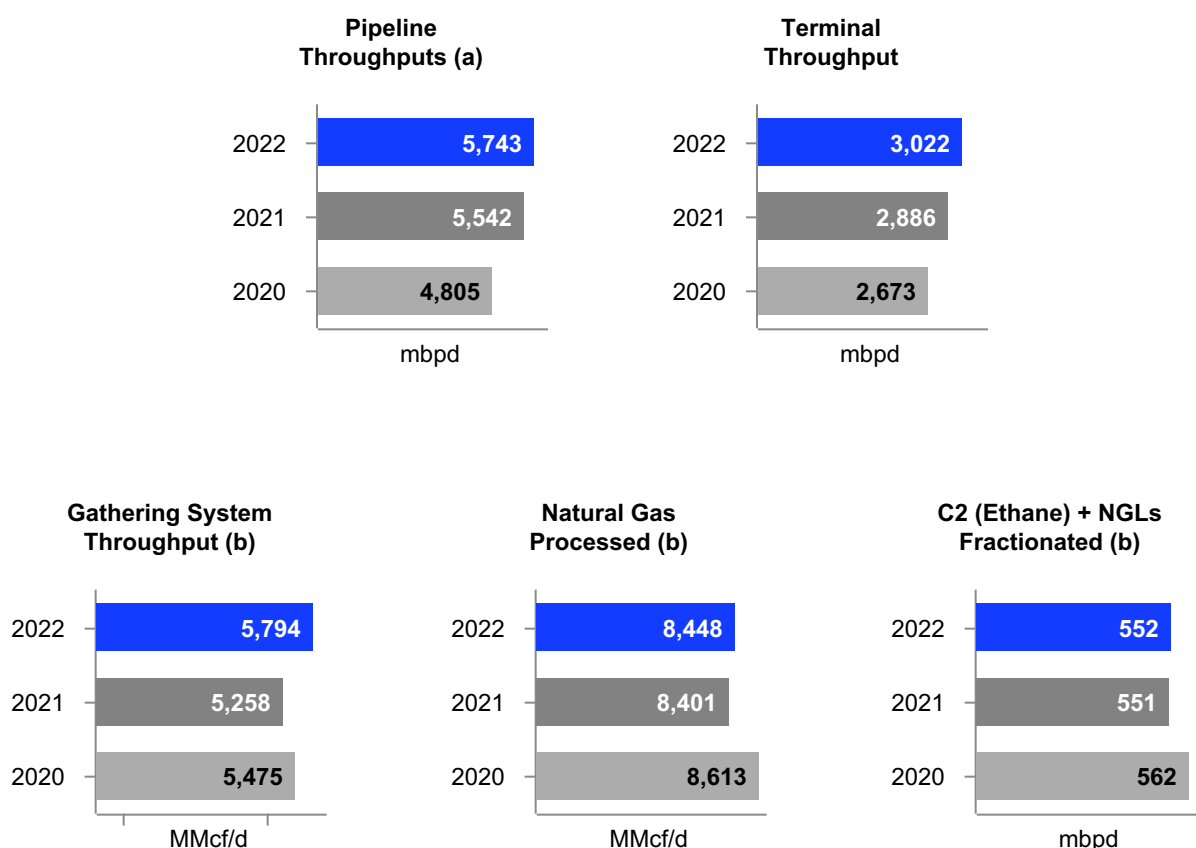
Midstream

Midstream Sales and Other Operating Revenue



Midstream Adjusted EBITDA





(a) On owned common-carrier pipelines, excluding equity method investments.

(b) Includes amounts related to MPLX operated unconsolidated equity method investments on a 100 percent basis.

Benchmark Prices	2022	2021	2020
Natural Gas NYMEX HH (\$ per MMBtu)	\$ 6.52	\$ 3.72	\$ 2.13
C2 + NGL Pricing (\$ per gallon) ^(a)	\$ 1.03	\$ 0.87	\$ 0.43

(a) C2 + NGL pricing based on Mont Belvieu prices assuming an NGL barrel of approximately 35 percent ethane, 35 percent propane, six percent Iso-Butane, 12 percent normal butane and 12 percent natural gasoline.

2022 Compared to 2021

Midstream segment revenue and segment adjusted EBITDA increased \$971 million and \$362 million, respectively. Results largely benefited from higher product pricing, mainly due to increased average C2 + NGL prices of \$0.16 per gallon. These price increases resulted in higher revenues of approximately \$380 million, as well as higher cost of sales of \$315 million. The Midstream segment also benefited from higher gathering system throughputs, resulting in increased revenue of \$356 million, in addition to higher pipeline and terminal throughputs. Segment adjusted EBITDA increased primarily due to income from equity method investments of approximately \$211 million.

2021 Compared to 2020

Midstream segment revenue and segment adjusted EBITDA increased \$1.18 billion and \$349 million, respectively. Results benefited from higher revenue, primarily due to higher natural gas prices, higher pipeline and terminal throughputs and lower operating expenses, partially offset by a decrease in marine transportation fees.

Corporate

Key Financial Information (in millions)	2022	2021	2020
Corporate ^(a)	\$ (753)	\$ (696)	\$ (800)

^(a) Corporate costs consist primarily of MPC's corporate administrative expenses and costs related to certain non-operating assets, except for corporate overhead expenses attributable to MPLX, which are included in the Midstream segment. Corporate costs include depreciation and amortization of \$55 million, \$165 million and \$165 million for the years ended December 31, 2022, 2021 and 2020, respectively.

2022 Compared to 2021

Corporate expenses increased \$57 million in 2022 compared to 2021 primarily driven by stock-based and special award compensation expense and retroactive operating tax assessments for prior periods. The company will continue to pursue recovery of these tax assessments. These increases were partially offset by decreased depreciation and amortization of \$110 million mainly due to 2021 asset impairments of \$56 million and assets that were fully depreciated in 2021.

2021 Compared to 2020

Corporate expenses decreased \$104 million in 2021 compared to 2020 largely due to cost reductions realized from our 2020 workforce reduction and other cost control efforts.

Items not Allocated to Segments

Our CODM evaluates the performance of our segments using segment adjusted EBITDA. Items identified in the table below are either believed to be non-recurring in nature or not believed to be allocable, controlled by the segment or are not tied to the operational performance of the segment.

Key Financial Information (in millions)	2022	2021	2020
Items not allocated to segments:			
Gain on sale of assets	\$ 1,058	\$ —	\$ 66
Renewable volume obligation requirements	238	—	—
Litigation	27	—	84
Impairments	—	(13)	(9,741)
Idling facility expenses	—	(12)	—
Restructuring expense	—	—	(367)
Transaction-related costs ^(a)	—	—	(8)
Total items not allocated to segments	<u>\$ 1,323</u>	<u>\$ (25)</u>	<u>\$ (9,966)</u>

^(a) 2020 includes costs incurred in connection with the Midstream strategic review and other related efforts. Costs incurred in connection with the Speedway separation are included in discontinued operations.

2022 Compared to 2021

Total items not allocated to segments primarily include the non-cash gain of \$549 million on the formation of the Martinez Renewable joint venture, the non-cash gain of \$509 million on a lease reclassification, and a \$238 million benefit related to retroactive changes in renewable volume obligation requirements published by the EPA for 2020 and 2021.

2021 Compared to 2020

Unallocated items in 2020 include impairment charges of \$9.74 billion which includes \$8.43 billion related to goodwill and long-lived assets and \$1.32 billion related to equity method investments. See Item 8. Financial Statements and Supplementary Data – Note 7 for additional information.

During 2020, we indefinitely idled our Gallup refinery, initiated actions to strategically reposition our Martinez refinery to a renewable diesel facility and approved an involuntary workforce reduction plan. In connection with these strategic actions, we recorded restructuring expenses of \$367 million for the year ended December 31, 2020. See Item 8. Financial Statements and Supplementary Data – Note 19 for additional information.

Other unallocated items in 2020 include a favorable litigation settlement of \$84 million and gain on sale of assets of \$66 million related to the sale of three asphalt terminals and certain other Refining & Marketing assets.

Non-GAAP Financial Measure

Management uses a financial measure to evaluate our operating performance that is calculated and presented on the basis of methodologies other than in accordance with GAAP. We believe this non-GAAP financial measure is useful to investors and analysts to assess our ongoing financial performance because, when reconciled to its most comparable GAAP financial measure, it provides improved comparability between periods through the exclusion of certain items that we believe are not indicative of our core operating performance and that may obscure our underlying business results and trends. This measure should not be considered a substitute for, or superior to, measures of financial performance prepared in accordance with GAAP, and our calculation thereof may not be comparable to similarly titled measures reported by other companies. The non-GAAP financial measure we use is as follows:

Refining & Marketing Margin

Refining margin is defined as sales revenue less the cost of refinery inputs and purchased products and excludes other items reflected in the table below.

Reconciliation of Refining & Marketing income (loss) from operations to Refining & Marketing gross margin and Refining & Marketing margin

<i>(In millions)</i>	2022	2021	2020
Refining & Marketing income (loss) from operations	\$ 16,437	\$ 1,016	\$ (5,189)
<i>Plus (Less):</i>			
Selling, general and administrative expenses	2,294	2,021	2,030
Income from equity method investments	(31)	(59)	(2)
Net gain on disposal of assets	(37)	(6)	(1)
Other income	(686)	(369)	(35)
Refining & Marketing gross margin	17,977	2,603	(3,197)
<i>Plus (Less):</i>			
Operating expenses (excluding depreciation and amortization)	10,683	9,806	9,694
Depreciation and amortization	1,850	1,870	1,857
Gross margin and other income excluded from Refining & Marketing margin ^(a)	82	(485)	(365)
Other taxes included in Refining & Marketing margin	(173)	(142)	(79)
Refining & Marketing margin	30,419	13,652	7,910
LIFO inventory (credit) charge	(148)	—	561
Refining & Marketing margin, excluding LIFO inventory (credit) charge	\$ 30,271	\$ 13,652	\$ 8,471

^(a) Reflects the gross margin, excluding depreciation and amortization, of other related operations included in the Refining & Marketing segment and processing of credit card transactions on behalf of certain of our marketing customers, net of other income.

LIQUIDITY AND CAPITAL RESOURCES

Cash Flows

Our cash and cash equivalents balance for continuing operations was \$8.63 billion at December 31, 2022, compared to \$5.29 billion at December 31, 2021. Net cash provided by (used in) operating activities, investing activities and financing activities for the past three years is presented in the following table.

<i>(In millions)</i>	2022	2021	2020
Net cash provided by (used in):			
Operating activities - continuing operations	\$ 16,319	\$ 8,384	\$ 807
Operating activities - discontinued operations	42	(4,024)	1,612
Total operating activities	16,361	4,360	2,419
Investing activities - continuing operations	623	(6,517)	(2,922)
Investing activities - discontinued operations	—	21,314	(335)
Total investing activities	623	14,797	(3,257)
Financing activities	(13,647)	(14,419)	(135)
Total increase (decrease) in cash	\$ 3,337	\$ 4,738	\$ (973)

Operating Activities

Continuing Operations

Net cash provided by operating activities from continuing operations increased \$7.94 billion in 2022 compared to 2021, primarily due to an increase in operating results partially offset by an unfavorable change in working capital of \$2.29 billion. Net cash provided by operating activities from continuing operations increased \$7.58 billion in 2021 compared to 2020, primarily due to an increase in operating results and a favorable change in working capital of \$633 million. The above changes in working capital exclude changes in short-term debt.

For 2022, changes in working capital were a net \$1.34 billion use of cash, primarily due to the effect of increases in energy commodity prices and volumes at the end of the year on working capital. Current receivables increased primarily due to higher crude and refined product volumes and prices. Inventories increased primarily due to increases in crude, refined product and materials and supplies inventories. Accounts payable increased primarily due to increases in crude prices.

For 2021, changes in working capital were a net \$947 million source of cash, primarily due to the effect of increases in energy commodity prices and volumes at the end of the year on working capital. Accounts payable increased primarily due to increases in crude prices and volumes. Current receivables increased primarily due to higher crude and refined product prices and volumes.

For 2020, changes in working capital were a net \$314 million source of cash, primarily due to the effect of decreases in energy commodity prices, inventory and refined product volumes on working capital. Accounts payable decreased primarily due to lower crude payable prices. Current receivables decreased primarily due to lower crude and refined product receivable prices and refined product volumes. Inventories decreased mainly due to decreases in refined product, crude and materials and supplies inventories.

Discontinued Operations

Net cash provided by operating activities from discontinued operations was \$42 million in 2022 largely due to the settlement of working capital related to the Speedway sale, partially offset by the payment of state income tax liabilities. Net cash used in operating activities from discontinued operations was \$4.02 billion in 2021 primarily due to tax payments related to the sale of Speedway, partially offset by a partial year of business income due to the sale of Speedway on May 14, 2021. Net cash provided by operating activities from discontinued operations in 2020 includes Speedway business income.

Investing Activities

Continuing Operations

Net cash provided by investing activities from continuing operations was \$623 million in 2022, compared to net cash used of \$6.52 billion and \$2.92 billion in 2021 and 2020, respectively.

- In 2022, the change in net cash provided by continuing operations was primarily due to maturities and sales of short-term investments of \$7.16 billion and \$1.30 billion, respectively, partially offset by purchases of short-term investments of \$6.02 billion. The cash provided by maturities and sales of short-term investments was primarily used to fund our return of capital initiatives announced as part of the Speedway sale.
- In 2021, proceeds from the sale of Speedway were used to purchase \$12.50 billion of short-term investments and cash of \$5.41 billion and \$1.54 billion was provided by the maturities and sales, respectively, of short-term investments. The cash provided by maturities and sales of short-term investments was primarily used to fund our return of capital initiatives announced as part of the Speedway sale.
- Cash used for additions to property, plant and equipment was \$2.42 billion in 2022, compared to \$1.46 billion in 2021 and \$2.79 billion in 2020, primarily due to spending in our Refining & Marketing and Midstream segments in 2022. See discussion of capital expenditures and investments under the "Capital Spending" section.
- Cash used for acquisitions was \$413 million in 2022 primarily due to the purchase of Crowley Coastal Partner's interest in Crowley Ocean Partners LLC and its four subsidiaries for approximately \$485 million, which included \$196 million to pay off the debt associated with the four tankers.
- Cash provided by net investments was \$110 million in 2022 compared to a net use of cash of \$171 million in 2021 and \$348 million in 2020. Investments in 2022 include a \$500 million cash distribution received from the Martinez Renewable joint venture at its formation, partially offset by increased contributions to equity method investments, which included the \$60 million contribution to MPLX's Bakken Pipeline joint venture to fund its share of a debt repayment by the joint venture. Investments in 2021 primarily include midstream projects and our joint venture with ADM. The decrease from 2020 is due to the completion of the South Texas Gateway Terminal, the Gray Oak Pipeline and the Whistler Pipeline projects which were included in 2020 net investments.
- Cash provided by disposal of assets totaled \$90 million, \$153 million and \$150 million in 2022, 2021 and 2020, respectively. In 2022 and 2021, we primarily sold Midstream assets and in 2020, we sold three asphalt terminals and other Refining & Marketing assets.

The consolidated statements of cash flows exclude changes to the consolidated balance sheets that did not affect cash. A reconciliation of additions to property, plant and equipment to total capital expenditures and investments follows for each of the last three years.

<i>(In millions)</i>	2022	2021	2020
Additions to property, plant and equipment per consolidated statements of cash flows	\$ 2,420	\$ 1,464	\$ 2,787
Increase (decrease) in capital accruals	(37)	141	(518)
Total capital expenditures	2,383	1,605	2,269
Investments in equity method investees	405	210	485
Total capital expenditures and investments	<u>\$ 2,788</u>	<u>\$ 1,815</u>	<u>\$ 2,754</u>

Discontinued Operations

Net cash provided by investing activities from discontinued operations in 2021 primarily includes the \$21.38 billion proceeds from the sale of Speedway, partially offset primarily by cash used for Speedway capital expenditures of \$177 million. Net cash used in investing activities for discontinued operations for 2020 primarily includes Speedway capital expenditures.

Financing Activities

Financing activities were a use of cash of \$13.65 billion in 2022, \$14.42 billion in 2021 and \$135 million in 2020.

- During 2022, MPLX issued \$2.5 billion of senior notes, redeemed \$1.0 billion of senior notes and had net payments of \$300 million under its revolving credit facility.
- During 2021, we reduced debt through the following actions:
 - On December 2, 2021, all of the \$1.25 billion outstanding aggregate principal amount of MPC's 4.5% senior notes due May 2023 and the \$850 million outstanding aggregate principal amount of MPC's 4.75% senior notes due December 2023, including the portion of such notes for which Andeavor LLC was the obligor, were redeemed at a price equal to par, plus a make-whole premium calculated in accordance with the terms of the senior notes and accrued and unpaid interest to, but not including, the redemption date. MPC funded the redemption amount with cash on hand.
 - In June 2021, we redeemed all of the \$300 million outstanding aggregate principal amount of MPC's 5.125% senior notes due April 2024 at a price equal to 100.854% of the principal amount, plus accrued and unpaid interest to, but not including, the redemption date.
 - In May 2021, we repaid all outstanding commercial paper borrowings, which, along with cash had been used to finance the fourth quarter 2020 repayments of two series of MPC's senior notes in the aggregate total principal amount of \$1.13 billion.
 - On March 1, 2021, we repaid the \$1 billion outstanding aggregate principal amount of MPC's 5.125% senior notes due March 2021.
- In 2021, MPLX redeemed \$1.75 billion of senior notes and had net borrowings of \$300 million under its revolving credit facility.
- During 2020, MPC issued \$2.5 billion of senior notes, redeemed \$1.13 billion of senior notes, borrowed and repaid \$4.23 billion under its revolving credit facility and borrowed and repaid \$3.55 billion under its trade receivables facility. MPLX issued \$3.0 billion of senior notes, which were used to repay \$1.0 billion of outstanding borrowings under its term loan, \$1.0 billion of floating rate senior notes and to redeem \$750 million of fixed rate senior notes and had net borrowings of \$175 million under its revolving credit facility.
- Cash used in common stock repurchases totaled \$11.92 billion in 2022 and \$4.65 billion in 2021. See the "Capital Requirements" section for further discussion of our stock repurchases.
- Cash used in dividend payments totaled \$1.28 billion in 2022, \$1.48 billion in 2021 and \$1.51 billion in 2020. Dividends per share were \$2.49 in 2022, \$2.32 in 2021 and \$2.32 in 2020. The decreases in 2022 and 2021 are primarily due to share repurchases, partially offset by an increase in per share dividends in 2022.
- Cash used in distributions to noncontrolling interests totaled \$1.21 billion in 2022, \$1.45 billion in 2021 and \$1.24 billion in 2020. MPLX's distributions in 2021 included a supplemental distribution amount of \$0.5750 per common unit.
- Cash used in repurchases of noncontrolling interests totaled \$491 million in 2022, \$630 million in 2021 and \$33 million in 2020 due to MPLX's repurchases of its common units. See the "Capital Requirements" section for further discussion of MPLX's unit repurchases.

Derivative Instruments

See Item 7A. Quantitative and Qualitative Disclosures about Market Risk for a discussion of derivative instruments and associated market risk.

Capital Resources

MPC, Excluding MPLX

We control MPLX through our ownership of the general partner; however, the creditors of MPLX do not have recourse to MPC's general credit through guarantees or other financial arrangements, except as noted. MPC has effectively guaranteed certain indebtedness of LOOP and LOCAP, in which MPLX holds an interest. Therefore, in the following table, we present the liquidity of MPC, excluding MPLX. MPLX liquidity is discussed in the following section.

Our liquidity, excluding MPLX, totaled \$16.53 billion at December 31, 2022 consisting of:

	December 31, 2022			
<i>(In millions)</i>	Total Capacity	Outstanding Borrowings	Outstanding Letters of Credit	Available Capacity
Bank revolving credit facility	\$ 5,000	\$ —	\$ 1	\$ 4,999
Trade receivables facility ^(a)	100	—	100	—
Total	<u>\$ 5,100</u>	<u>\$ —</u>	<u>\$ 101</u>	<u>\$ 4,999</u>
Cash and cash equivalents and short-term investments ^(b)				11,532
Total liquidity				<u>16,531</u>

^(a) The committed borrowing and letter of credit issuance capacity of the trade receivables securitization facility is \$100 million. In addition, the facility allows for the issuance of letters of credit in excess of the committed capacity at the discretion of the issuing banks. As of December 31, 2022, letters of credit in the total amount of \$1.05 billion were issued and outstanding under the facility to secure contracts awarded by the Department of Energy to purchase crude oil from the Strategic Petroleum Reserve.

^(b) Excludes \$238 million of MPLX cash and cash equivalents.

Because of the alternatives available to us, including internally generated cash flow and access to capital markets and a commercial paper program, we believe that our short-term and long-term liquidity is adequate to fund not only our current operations, but also our near-term (less than twelve months) and long-term funding requirements, including capital spending programs, the repurchase of shares of our common stock, dividend payments, defined benefit plan contributions, repayment of debt maturities and other amounts that may ultimately be paid in connection with contingencies.

We have a commercial paper program that allows us to have a maximum of \$2.0 billion in commercial paper outstanding, with maturities up to 397 days from the date of issuance. We do not intend to have outstanding commercial paper borrowings in excess of available capacity under our bank revolving credit facilities. At December 31, 2022, we had no borrowings outstanding under the commercial paper program.

On July 7, 2022, MPC entered into a new five-year revolving credit agreement (the "MPC Credit Agreement") to replace its previous \$5.0 billion credit facility that was scheduled to expire in October 2023. The MPC Credit Agreement, among other things, provides for a \$5.0 billion unsecured revolving credit facility that matures in July 2027 and letter of credit issuing capacity under the facility of up to \$2.2 billion. Letters of credit issuing capacity is included in, not in addition to, the \$5.0 billion borrowing capacity. The financial covenants of the MPC Credit Agreement are substantially the same as those contained in the previous credit agreement.

The MPC Credit Agreement and trade receivables facility contain representations and warranties, affirmative and negative covenants and events of default that we consider usual and customary for agreements of these types. The financial covenant included in the MPC Credit Agreement requires us to maintain, as of the last day of each fiscal quarter, a ratio of Consolidated Net Debt to Total Capitalization (as defined in the MPC Credit Agreement) of no greater than 0.65 to 1.00. Other covenants restrict us and/or certain of our subsidiaries from incurring debt, creating liens on assets and entering into transactions with affiliates. As of December 31, 2022, we were in compliance with the covenants contained in the MPC Credit Agreement and our trade receivables facility, including the financial covenant with a ratio of Consolidated Net Debt to Total Capitalization of approximately 0 to 1.00.

Our intention is to maintain an investment-grade credit profile. As of February 1, 2023, the credit ratings on our senior unsecured debt are as follows.

<u>Company</u>	<u>Rating Agency</u>	<u>Rating</u>
MPC	Moody's	Baa2 (stable outlook)
	Standard & Poor's	BBB (stable outlook)
	Fitch	BBB (stable outlook)

The ratings reflect the respective views of the rating agencies. Although it is our intention to maintain a credit profile that supports an investment-grade rating, there is no assurance that these ratings will continue for any given period of time. The ratings may be revised or withdrawn entirely by the rating agencies if, in their respective judgments, circumstances so warrant.

The MPC Credit Agreement does not contain credit rating triggers that would result in the acceleration of interest, principal or other payments in the event that our credit ratings are downgraded. However, any downgrades of our senior unsecured debt could increase the applicable interest rates, yields and other fees payable under such agreements and may limit our flexibility to obtain financing in the future, including to refinance existing indebtedness. In addition, a downgrade of our senior unsecured debt rating to below investment-grade levels could, under certain circumstances, impact our ability to purchase crude oil on an unsecured basis and could result in us having to post letters of credit under existing transportation services or other agreements.

See Item 8. Financial Statements and Supplementary Data – Note 22 for further discussion of our debt.

MPLX

MPLX's liquidity totaled \$3.74 billion at December 31, 2022 consisting of:

	December 31, 2022			
<i>(In millions)</i>	Total Capacity	Outstanding Borrowings	Outstanding Letters of Credit	Available Capacity
MPLX bank revolving credit facility	\$ 2,000	\$ —	\$ —	\$ 2,000
MPC intercompany loan agreement	1,500	—	—	1,500
Total	<u>\$ 3,500</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 3,500</u>
Cash and cash equivalents				238
Total liquidity				<u>\$ 3,738</u>

On March 14, 2022, MPLX issued \$1.5 billion aggregate principal amount of 4.950% senior notes due March 2052 in an underwritten public offering. The net proceeds were used to repay amounts outstanding under the MPC intercompany loan agreement and under the previous MPLX credit agreement.

On July 7, 2022, MPLX entered into a new five-year revolving credit agreement (the "MPLX Credit Agreement") to replace its previous \$3.5 billion credit facility that was scheduled to expire in July 2024. The MPLX Credit Agreement, among other things, provides for a \$2.0 billion unsecured revolving credit facility that matures in July 2027 and letter of credit issuing capacity under the facility of up to \$150 million. Letters of credit issuing capacity is included in, not in addition to, the \$2.0 billion borrowing capacity. The financial covenants of the MPLX Credit Agreement are substantially the same as those contained in the previous credit agreement.

On August 11, 2022, MPLX issued \$1.0 billion aggregate principal amount of 4.950% senior notes due September 2032 in an underwritten public offering. The net proceeds were used to redeem all of the \$500 million aggregate principal amount of 3.500% senior notes due December 2022, \$14 million of which was issued by Andeavor Logistics LP, and to redeem all of the \$500 million aggregate principal amount of 3.375% senior notes due March 2023.

The MPLX Credit Agreement contains certain representations and warranties, affirmative and restrictive covenants and events of default that we consider to be usual and customary for an agreement of this type. The financial covenant requires MPLX to maintain a ratio of Consolidated Total Debt as of the end of each fiscal quarter to Consolidated EBITDA (both as defined in the MPLX Credit Agreement) for the prior four fiscal quarters of no greater than 5.0 to 1.0 (or 5.5 to 1.0 for up to two fiscal quarters following certain acquisitions). Consolidated EBITDA is subject to adjustments for certain acquisitions completed and capital projects undertaken during the relevant period. Other covenants restrict MPLX and/or certain of its subsidiaries from incurring debt, creating liens on assets and entering into transactions with affiliates. As of December 31, 2022, MPLX was in compliance with the covenants, including the financial covenant with a ratio of Consolidated Total Debt to Consolidated EBITDA of 3.5 to 1.0.

Our intention is to maintain an investment-grade credit profile for MPLX. As of February 1, 2023, the credit ratings on MPLX's senior unsecured debt are as follows.

<u>Company</u>	<u>Rating Agency</u>	<u>Rating</u>
MPLX	Moody's	Baa2 (stable outlook)
	Standard & Poor's	BBB (stable outlook)
	Fitch	BBB (stable outlook)

The ratings reflect the respective views of the rating agencies. Although it is our intention to maintain a credit profile that supports an investment-grade rating for MPLX, there is no assurance that these ratings will continue for any given period of time. The ratings may be revised or withdrawn entirely by the rating agencies if, in their respective judgments, circumstances so warrant.

The agreements governing MPLX's debt obligations do not contain credit rating triggers that would result in the acceleration of interest, principal or other payments in the event that MPLX credit ratings are downgraded. However, any downgrades of MPLX senior unsecured debt to below investment grade ratings could increase the applicable interest rates, yields and other fees payable under such agreements. In addition, a downgrade of MPLX senior unsecured debt ratings to below investment-grade levels may limit MPLX's ability to obtain future financing, including to refinance existing indebtedness.

See Item 8. Financial Statements and Supplementary Data – Note 22 for further discussion of MPLX's debt.

Capital Requirements

Capital Spending

MPC's capital investment plan for 2023 totals approximately \$1.3 billion for capital projects and investments, excluding capitalized interest, potential acquisitions and MPLX's capital investment plan. MPC's 2023 capital investment plan includes all of the planned capital spending for Refining & Marketing and Corporate as well as a portion of the planned capital investments for Midstream. The remainder of the planned capital spending for Midstream reflects the capital investment plan for MPLX. We continuously evaluate our capital plan and make changes as conditions warrant. The 2023 capital investment plan for MPC and MPLX and capital expenditures and investments for each of the last three years are summarized by segment below.

<i>(In millions)</i>	2023 Plan	2022	2021	2020
Capital expenditures and investments: ^(a)				
MPC, excluding MPLX				
Refining & Marketing	\$ 1,250	\$ 1,508	\$ 911	\$ 1,170
Midstream - Other	—	8	50	221
Corporate and Other ^(b)	50	108	105	80
Total MPC, excluding MPLX	<u>\$ 1,300</u>	<u>\$ 1,624</u>	<u>\$ 1,066</u>	<u>\$ 1,471</u>
MPC discontinued operations - Speedway	\$ —	\$ —	\$ 177	\$ 277
Midstream - MPLX ^(c)	\$ 950	\$ 1,061	\$ 681	\$ 1,177

^(a) Capital expenditures include changes in capital accruals.

^(b) Excludes capitalized interest of \$103 million, \$68 million and \$106 million for 2022, 2021 and 2020, respectively. The 2023 capital investment plan excludes capitalized interest.

^(c) The 2023 capital investment plan excludes reimbursable capital.

Refining & Marketing

The Refining & Marketing segment's forecasted 2023 capital spending and investments is approximately \$1.25 billion. This amount includes approximately \$350 million of growth capital for low carbon projects, primarily the Martinez facility conversion and an emissions reduction project at our Los Angeles refinery. There is also \$550 million of growth capital focused on traditional projects such as the STAR project and projects that we expect will help us reduce future operating costs and improve the competitive position of our assets. Maintenance capital is expected to be approximately \$350 million which is essential to maintain the safety, integrity and reliability of our assets.

Major capital projects completed over the last three years have focused on refinery optimization, production of higher value products, increased capacity to upgrade residual fuel oil and expanded export capacity. We also focused on projects such as the Martinez facility conversion, the STAR project at our Galveston Bay refinery, which is scheduled to complete in the first half of 2023, and projects expected to reduce future operating costs.

Midstream

MPLX's capital investment plan of \$950 million, net of reimbursements, includes approximately \$800 million of organic growth capital and \$150 million of maintenance capital. MPLX's growth capital plans are anchored in the Marcellus, Permian, and Bakken basins. In addition to new gas processing plants in the Marcellus and Permian, the remainder of MPLX's capital plan is mostly focused on other investments targeted at the expansion or debottlenecking of existing assets to meet customer demand.

Major capital projects over the last three years included investments for the development of natural gas and natural gas liquids infrastructure to support MPLX's producer customers, primarily in the Marcellus, Utica and Permian regions and development of various crude oil and refined petroleum products infrastructure projects.

Corporate and Other

The 2023 capital forecast includes approximately \$50 million to support corporate and other activities. Major projects over the last three years included upgrades to information technology systems.

Share Repurchases

From January 1, 2012 through December 31, 2022, our board of directors has approved \$35.05 billion in total share repurchase authorizations and we have repurchased a total of \$31.72 billion of our common stock. As of December 31, 2022, MPC had \$3.33 billion remaining under its share repurchase authorizations, which reflects the repurchase of 830,000 common shares for \$96 million that settled in the first quarter of 2023. On January 31, 2023, we announced our board of directors approved an incremental \$5.0 billion share repurchase authorization. The authorization has no expiration date. The table below summarizes our total share repurchases. See Item 8. Financial Statements and Supplementary Data – Note 11 for further discussion of the share repurchase plans.

<i>(In millions, except per share data)</i>	2022	2021	2020
Number of shares repurchased	131	76	—
Cash paid for shares repurchased	\$ 11,922	\$ 4,654	\$ —
Average cost per share	\$ 91.20	\$ 62.65	\$ —

We may utilize various methods to effect the repurchases, which could include open market repurchases, negotiated block transactions, tender offers, accelerated share repurchases or open market solicitations for shares, some of which may be effected through Rule 10b5-1 plans. The timing and amount of future repurchases, if any, will depend upon several factors, including market and business conditions, and such repurchases may be suspended or discontinued at any time.

MPLX Unit Repurchases

The table below summarizes MPLX's total unit repurchases.

<i>(In millions, except per share data)</i>	2022	2021	2020
Number of common units repurchased	15	23	1
Cash paid for common units repurchased	\$ 491	\$ 630	\$ 33
Average cost per unit	\$ 31.96	\$ 27.52	\$ 22.29

As of December 31, 2022, MPLX had approximately \$846 million remaining under its unit repurchase authorizations. The repurchase authorizations have no expiration date.

MPLX may utilize various methods to effect the repurchases, which could include open market repurchases, negotiated block transactions, accelerated unit repurchases, tender offers or open market solicitations for units, some of which may be effected through Rule 10b5-1 plans. The timing and amount of future repurchases, if any, will depend upon several factors, including market and business conditions, and such repurchases may be discontinued at any time.

See Item 8. Financial Statements and Supplementary Data – Note 6 for further discussion of the MPLX unit repurchase program.

Material Cash Commitments

Contractual Obligations

We have purchase commitments primarily consisting of obligations to purchase and transport crude oil and feedstocks used in our refining operations. As of December 31, 2022, we had purchase obligations for crude oil, NGLs and renewable feedstocks of \$23.11 billion, with \$16.96 billion payable within 12 months, and crude oil transportation obligations of \$6.19 billion, with \$655 million payable within 12 months. These contracts include variable price arrangements. For purposes of this disclosure, we have estimated prices to be paid primarily based on futures curves for the commodities to the extent available. Our contractual obligations do not include our contractual obligations to MPLX under various fee-based commercial agreements as these transactions are eliminated in the consolidated financial statements.

At December 31, 2022, we have non-cancelable obligations to acquire property, plant and equipment of \$289 million, with \$261 million payable within 12 months.

At December 31, 2022, we have aggregate principal amount of outstanding debt of \$26.55 billion, with \$1.0 billion payable within 12 months, and interest on the debt of \$16.70 billion, with \$1.20 billion payable within 12 months. See Item 8. Financial Statements and Supplementary Data – Note 22 for additional information on our debt.

Our other contractual obligations primarily consist of finance and operating leases and pension and post-retirement obligations, for which additional information is included in Item 8. Financial Statements and Supplementary Data – Notes 28 and 26, respectively.

Other Cash Commitments

On January 27, 2023, we announced our board of directors approved a \$0.75 per share dividend, payable March 10, 2023 to shareholders of record at the close of business on February 16, 2023.

We may, from time to time, repurchase our senior notes and preferred units in the open market, in tender offers, in privately-negotiated transactions or otherwise in such volumes, at such prices and upon such other terms as we deem appropriate.

TRANSACTIONS WITH RELATED PARTIES

See Item 8. Financial Statements and Supplementary Data – Note 9 for discussion of activity with related parties.

ENVIRONMENTAL MATTERS AND COMPLIANCE COSTS

We have incurred and may continue to incur substantial capital, operating and maintenance, and remediation expenditures as a result of environmental laws and regulations. If these expenditures, as with all costs, are not ultimately reflected in the prices of our products and services, our operating results will be adversely affected. We believe that substantially all of our competitors must comply with similar environmental laws and regulations. However, the specific impact on each competitor may vary depending on a number of factors, including the age and location of its operating facilities, marketing areas, production processes and whether it is also engaged in the petrochemical business or the marine transportation of crude oil and refined products.

Legislation and regulations pertaining to fuel specifications, climate change and GHG emissions have the potential to materially adversely impact our business, financial condition, results of operations and cash flows, including costs of compliance and permitting delays. The extent and magnitude of these adverse impacts cannot be reliably or accurately estimated at this time because specific regulatory and legislative requirements have not been finalized and uncertainty exists with respect to the measures being considered, the costs and the time frames for compliance, and our ability to pass compliance costs on to our customers.

Our environmental expenditures, including non-regulatory expenditures, for each of the last three years were:

<i>(In millions)</i>	2022	2021	2020
Capital	\$ 167	\$ 118	\$ 121
Compliance: ^(a)			
Operating and maintenance	987	819	469
Remediation ^(b)	72	54	40
Total	<u>\$ 1,226</u>	<u>\$ 991</u>	<u>\$ 630</u>

^(a) Based on the American Petroleum Institute's definition of environmental expenditures.

^(b) These amounts include spending charged against remediation reserves, where permissible, but exclude non-cash provisions recorded for environmental remediation. Environmental remediation costs increased in 2022 compared to 2021 primarily due to a release of crude oil on an MPLX pipeline near Edwardsville, Illinois in March of 2022.

We accrue for environmental remediation activities when the responsibility to remediate is probable and the amount of associated costs can be reasonably estimated. As environmental remediation matters proceed toward ultimate resolution or as additional remediation obligations arise, charges in excess of those previously accrued may be required.

New or expanded environmental requirements, which could increase our environmental costs, may arise in the future. It is not possible to predict all of the ultimate costs of compliance, including remediation costs that may be incurred and penalties that may be imposed.

Our environmental capital expenditures accounted for 7 percent, 8 percent and 6 percent of capital expenditures, for 2022, 2021 and 2020, respectively, excluding acquisitions. Our environmental capital expenditures are expected to be approximately \$179 million, or 8 percent, of total planned capital expenditures in 2023. Actual expenditures may vary as the number and scope of environmental projects are revised as a result of improved technology or changes in regulatory requirements and could increase if additional projects are identified or additional requirements are imposed.

For more information on environmental regulations that impact us, or could impact us, see Item 1. Business – Regulatory Matters and Item 1A. Risk Factors.

CRITICAL ACCOUNTING ESTIMATES

The preparation of financial statements in accordance with GAAP requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities as of the date of the consolidated financial statements and the reported amounts of revenues and expenses during the respective reporting periods. Accounting estimates are considered to be critical if (1) the nature of the estimates and assumptions is material due to the levels of subjectivity and judgment necessary to account for highly uncertain matters or the susceptibility of such matters to change; and (2) the impact of the estimates and assumptions on financial condition or operating performance is material. Actual results could differ from the estimates and assumptions used.

Fair Value Estimates

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. There are three approaches for measuring the fair value of assets and liabilities: the market approach, the income approach and the cost approach, each of which includes multiple valuation techniques. The market approach uses prices and other relevant information generated by market transactions involving identical or comparable assets or liabilities. The income approach uses valuation techniques to measure fair value by converting future amounts, such as cash flows or earnings, into a single present value amount using current market expectations about those future amounts. The cost approach is based on the amount that would currently be required to replace the service capacity of an asset. This is often referred to as current replacement cost. The cost approach assumes that the fair value would not exceed what it would cost a market participant to acquire or construct a substitute asset of comparable utility, adjusted for obsolescence.

The fair value accounting standards do not prescribe which valuation technique should be used when measuring fair value and does not prioritize among the techniques. These standards establish a fair value hierarchy that prioritizes the inputs used in applying the various valuation techniques. Inputs broadly refer to the assumptions that market participants use to make pricing decisions, including assumptions about risk. Level 1 inputs are given the highest priority in the fair value hierarchy while Level 3 inputs are given the lowest priority. The three levels of the fair value hierarchy are as follows:

- Level 1 – Observable inputs that reflect unadjusted quoted prices for identical assets or liabilities in active markets as of the measurement date. Active markets are those in which transactions for the asset or liability occur in sufficient frequency and volume to provide pricing information on an ongoing basis.
- Level 2 – Observable market-based inputs or unobservable inputs that are corroborated by market data. These are inputs other than quoted prices in active markets included in Level 1, which are either directly or indirectly observable as of the measurement date.
- Level 3 – Unobservable inputs that are not corroborated by market data and may be used with internally developed methodologies that result in management's best estimate of fair value.

Valuation techniques that maximize the use of observable inputs are favored. Assets and liabilities are classified in their entirety based on the lowest priority level of input that is significant to the fair value measurement. The assessment of the significance of a particular input to the fair value measurement requires judgment and may affect the placement of assets and liabilities within the levels of the fair value hierarchy. We use an income or market approach for recurring fair value measurements and endeavor to use the best information available. See Item 8. Financial Statements and Supplementary Data – Note 20 for disclosures regarding our fair value measurements.

Significant uses of fair value measurements include:

- assessment of impairment of long-lived assets;
- assessment of impairment of intangible assets;
- assessment of impairment of goodwill;
- assessment of impairment of equity method investments;
- recorded values for assets acquired and liabilities assumed in connection with acquisitions; and
- recorded values of derivative instruments.

Impairment Assessments of Long-Lived Assets, Intangible Assets, Goodwill and Equity Method Investments

Fair value calculated for the purpose of testing our long-lived assets, intangible assets, goodwill and equity method investments for impairment is estimated using the expected present value of future cash flows method and comparative market prices when appropriate. Significant judgment is involved in performing these fair value estimates since the results are based on forecasted financial information prepared using significant assumptions including:

- *Future operating performance.* Our estimates of future operating performance are based on our analysis of various supply and demand factors, which include, among other things, industry-wide capacity, our planned utilization rate, end-user demand, capital expenditures and economic conditions. Such estimates are consistent with those used in our planning and capital investment reviews.

- *Future volumes.* Our estimates of future refinery, pipeline throughput and natural gas and natural gas liquid processing volumes are based on internal forecasts prepared by our Refining & Marketing and Midstream segments operations personnel. Assumptions about the effects of the COVID-19 pandemic on our future volumes are inherently subjective and contingent upon the duration of the pandemic, which is difficult to forecast.
- *Discount rate commensurate with the risks involved.* We apply a discount rate to our cash flows based on a variety of factors, including market and economic conditions, operational risk, regulatory risk and political risk. This discount rate is also compared to recent observable market transactions, if possible. A higher discount rate decreases the net present value of cash flows.
- *Future capital requirements.* These are based on authorized spending and internal forecasts.

Assumptions about the macroeconomic environment are inherently subjective and difficult to forecast. We base our fair value estimates on projected financial information which we believe to be reasonable. However, actual results may differ from these projections.

The need to test for impairment can be based on several indicators, including a significant reduction in prices of or demand for products produced, a weakened outlook for profitability, a significant reduction in pipeline throughput volumes, a significant reduction in natural gas or natural gas liquids processed, a significant reduction in refining margins, other changes to contracts or changes in the regulatory environment. The following sections detail our critical accounting estimates related to impairment assessments for long-lived assets, goodwill and equity method investments.

Long-lived Asset Impairment Assessments

Long-lived assets used in operations are assessed for impairment whenever changes in facts and circumstances indicate that the carrying value of the assets may not be recoverable based on the expected undiscounted future cash flow of an asset group. For purposes of impairment evaluation, long-lived assets must be grouped at the lowest level for which independent cash flows can be identified, which generally is the refinery and associated distribution system level for Refining & Marketing segment assets, and the plant level or pipeline system level for Midstream segment assets. If the sum of the undiscounted estimated pretax cash flows is less than the carrying value of an asset group, fair value is calculated, and the carrying value is written down to the calculated fair value.

Goodwill Impairment Assessments

Unlike long-lived assets, goodwill is subject to annual, or more frequent if necessary, impairment testing at the reporting unit level. A goodwill impairment loss is measured as the amount by which a reporting unit's carrying value exceeds its fair value, without exceeding the recorded amount of goodwill.

At December 31, 2022, MPC had four reporting units with goodwill totaling approximately \$8.24 billion. The majority of this balance is comprised of the Midstream reporting units, including \$1.1 billion for the MPLX Crude Gathering reporting unit and \$6.6 billion for the MPLX Transportation & Storage reporting unit. For the annual impairment assessment as of November 30, 2022, management performed only a qualitative assessment for three reporting units as we determined it was more likely than not that the fair value of the reporting units exceeded the carrying value. Significant assumptions used to estimate the reporting units' fair value under a qualitative approach included estimates of future cash flows and market information for comparable assets. A quantitative assessment was performed for the MPLX Crude Gathering reporting unit, which resulted in the fair value of the reporting unit exceeding its carrying value by greater than 10 percent. The fair value of the reporting unit was determined based on applying both a discounted cash flow method (i.e., income approach) as well as a market approach. An increase of one percentage point to the discount rate used to estimate the fair value of the reporting units would not have resulted in a goodwill impairment charge as of November 30, 2022. Significant assumptions that were used to estimate the Crude Gathering reporting unit's fair values under the discounted cash flow method included management's best estimates of the discount rate, as well as estimates of future cash flows, which are impacted primarily by producer customers' development plans, which impact future volumes and capital requirements. If estimates for future cash flows were to decline, the overall reporting units' fair values would decrease, resulting in potential goodwill impairment charges. Fair value determinations require considerable judgment and are sensitive to changes in underlying assumptions and factors. As a result, there can be no assurance that the estimates and assumptions made for purposes of the impairment tests will prove to be an accurate prediction of the future.

Equity Method Investment Impairment Assessment

Equity method investments are assessed for impairment whenever factors indicate an other than temporary loss in value. Factors providing evidence of such a loss include the fair value of an investment that is less than its carrying value, absence of an ability to recover the carrying value or the investee's inability to generate income sufficient to justify our carrying value. At December 31, 2022, we had \$6.47 billion of investments in equity method investments recorded on our consolidated balance sheet.

See Item 8. Financial Statements and Supplementary Data – Note 16 for additional information on our equity method investments. See Item 8. Financial Statements and Supplementary Data – Note 18 for additional information on our goodwill and intangibles, including a table summarizing our recorded goodwill by segment.

Derivatives

We record all derivative instruments at fair value. Substantially all of our commodity derivatives are cleared through exchanges which provide active trading information for identical derivatives and do not require any assumptions in arriving at fair value. Fair value estimation for all our derivative instruments is discussed in Item 8. Financial Statements and Supplementary Data – Note 20. Additional information about derivatives and their valuation may be found in Item 7A. Quantitative and Qualitative Disclosures about Market Risk.

Variable Interest Entities

We evaluate all legal entities in which we hold an ownership or other pecuniary interest to determine if the entity is a VIE. Our interests in a VIE are referred to as variable interests. Variable interests can be contractual, ownership or other pecuniary interests in an entity that change with changes in the fair value of the VIE's assets. When we conclude that we hold an interest in a VIE we must determine if we are the entity's primary beneficiary. A primary beneficiary is deemed to have a controlling financial interest in a VIE. This controlling financial interest is evidenced by both (a) the power to direct the activities of the VIE that most significantly impact the VIE's economic performance and (b) the obligation to absorb losses that could potentially be significant to the VIE or the right to receive benefits that could potentially be significant to the VIE. We consolidate any VIE when we determine that we are the primary beneficiary. We must disclose the nature of any interests in a VIE that is not consolidated.

Significant judgment is exercised in determining that a legal entity is a VIE and in evaluating our interest in a VIE. We use primarily a qualitative analysis to determine if an entity is a VIE. We evaluate the entity's need for continuing financial support; the equity holder's lack of a controlling financial interest; and/or if an equity holder's voting interests are disproportionate to its obligation to absorb expected losses or receive residual returns. We evaluate our interests in a VIE to determine whether we are the primary beneficiary. We use a primarily qualitative analysis to determine if we are deemed to have a controlling financial interest in the VIE, either on a standalone basis or as part of a related party group. We continually monitor our interests in legal entities for changes in the design or activities of an entity and changes in our interests, including our status as the primary beneficiary to determine if the changes require us to revise our previous conclusions.

Changes in the design or nature of the activities of a VIE, or our involvement with a VIE, may require us to reconsider our conclusions on the entity's status as a VIE and/or our status as the primary beneficiary. Such reconsideration requires significant judgment and understanding of the organization. This could result in the deconsolidation or consolidation of the affected subsidiary, which would have a significant impact on our financial statements.

Variable Interest Entities are discussed in Item 8. Financial Statements and Supplementary Data – Note 8.

Pension and Other Postretirement Benefit Obligations

Accounting for pension and other postretirement benefit obligations involves numerous assumptions, the most significant of which relate to the following:

- the discount rate for measuring the present value of future plan obligations;
- the expected long-term return on plan assets;
- the rate of future increases in compensation levels;
- health care cost projections; and
- the mortality table used in determining future plan obligations.

We utilize the work of third-party actuaries to assist in the measurement of these obligations. We have selected different discount rates for each of our pension plans and retiree health and welfare based on the projected benefit payment patterns of each individual plan. The selected rates are compared to various similar bond indexes for reasonableness. In determining the assumed discount rates, we use our third-party actuaries' discount rate models. These models calculate an equivalent single discount rate for the projected benefit plan cash flows using yield curves derived from Aa or higher corporate bond yields. The yield curves represent a series of annualized individual spot discount rates from 0.5 to 99 years. The bonds used have an average rating of Aa or higher from a recognized rating agency and generally only non-callable bonds are included. Outlier bonds that have a yield to maturity that deviate significantly from the average yield within each maturity grouping are not included. Each issue is required to have at least \$300 million par value outstanding.

Of the assumptions used to measure the year-end obligations and estimated annual net periodic benefit cost, the discount rate has the most significant effect on the periodic benefit cost reported for the plans. Decreasing the discount rates of 5.10 percent for our pension plans and 5.00 percent for our other postretirement benefit plans by 0.25 percent would increase pension obligations and other postretirement benefit plan obligations by \$64 million and \$16 million, respectively, and would increase defined benefit pension expense and other postretirement benefit plan expense by \$4 million and less than \$1 million, respectively.

The long-term asset rate of return assumption considers the asset mix of the plans (currently targeted at approximately 50 percent equity securities and 50 percent fixed income securities for the primary funded pension plan), past performance and other factors. Certain components of the asset mix are modeled with various assumptions regarding inflation and returns. In

addition, our long-term asset rate of return assumption is compared to those of other companies and to historical returns for reasonableness. We used the 5.75 percent long-term rate of return to determine our 2022 defined benefit pension expense. After evaluating activity in the capital markets, along with the current and projected plan investments, we increased the asset rate of return for our primary plan to 7.00 percent effective for 2023. Decreasing the 6.00 percent asset rate of return assumption by 0.25 percentage points would increase our defined benefit pension expense by \$6 million.

Compensation change assumptions are based on historical experience, anticipated future management actions and demographics of the benefit plans.

Health care cost trend assumptions are developed based on historical cost data, the near-term outlook and an assessment of likely long-term trends.

We utilized the 2021 mortality tables from the U.S. Society of Actuaries.

Item 8. Financial Statements and Supplementary Data – Note 26 includes detailed information about the assumptions used to calculate the components of our annual defined benefit pension and other postretirement plan expense, as well as the obligations and accumulated other comprehensive loss reported on the year-end balance sheets.

ACCOUNTING STANDARDS NOT YET ADOPTED

Refer to Item 8. Financial Statements and Supplementary Data – Note 3 to our audited consolidated financial statements for recently issued financial accounting pronouncements.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

GENERAL

We are exposed to market risks related to the volatility of crude oil and refined product prices. We employ various strategies, including the use of commodity derivative instruments, to hedge the risks related to these price fluctuations. We are also exposed to market risks related to changes in interest rates and foreign currency exchange rates. As of December 31, 2022, we did not have any financial derivative instruments to hedge the risks related to interest rate fluctuations; however, we have used them in the past, and we continually monitor the market and our exposure and may enter into these agreements again in the future. We are at risk for changes in fair value of all of our derivative instruments; however, such risk should be mitigated by price or rate changes related to the underlying commodity or financial transaction.

We believe that our use of derivative instruments, along with our risk assessment procedures and internal controls, does not expose us to material adverse consequences. While the use of derivative instruments could materially affect our results of operations in particular quarterly or annual periods, we believe that the use of these instruments will not have a material adverse effect on our financial position or liquidity.

See Item 8. Financial Statements and Supplementary Data – Notes 20 and 21 for more information about the fair value measurement of our derivatives, as well as the amounts recorded in our consolidated balance sheets and statements of income. We do not designate any of our commodity derivative instruments as hedges for accounting purposes.

Commodity Price Risk

Refining & Marketing

Our strategy is to obtain competitive prices for our products and allow operating results to reflect market price movements dictated by supply and demand. We use a variety of commodity derivative instruments, including futures, swaps and options, as part of an overall program to hedge commodity price risk. We also do a limited amount of trading not directly related to our physical transactions.

We use derivative instruments related to the acquisition of foreign-sourced crude oil and ethanol blended with refined petroleum products to hedge price risk associated with market volatility between the time we purchase the product and when we use it in the refinery production process or it is blended. In addition, we may use commodity derivative instruments on fixed price contracts for the sale of refined products to hedge risk by converting the refined product sales to market-based prices. The majority of these derivatives are exchange-traded contracts, but we also enter into over-the-counter swaps, options and over-the-counter options. We closely monitor and hedge our exposure to market risk on a daily basis in accordance with policies approved by our board of directors. Our positions are monitored daily by a risk control group to ensure compliance with our stated risk management policy.

Midstream

NGL and natural gas prices are volatile and are impacted by changes in fundamental supply and demand, as well as market uncertainty, availability of NGL transportation and fractionation capacity and a variety of additional factors that are beyond MPLX's control. MPLX may at times use a variety of commodity derivative instruments, including futures and options, as part of an overall program to economically hedge commodity price risk. A portion of MPLX's profitability is directly affected by prevailing commodity prices primarily as a result of purchasing and selling NGLs and natural gas at index-related prices. To the extent that commodity prices influence the level of drilling by MPLX producer customers, such prices also indirectly affect profitability. MPLX may enter into derivative contracts, which are primarily swaps traded on the OTC market as well as fixed price forward contracts. MPLX's risk management policy does not allow it to enter into speculative positions with its derivative contracts. Execution of MPLX's hedge strategy and the continuous monitoring of commodity markets and its open derivative positions are carried out by its hedge committee, comprised of members of senior management.

To mitigate MPLX's cash flow exposure to fluctuations in the price of NGLs, it may use NGL derivative swap contracts. A small portion of its NGL price exposure may be managed by using crude oil contracts. To mitigate MPLX's cash flow exposure to fluctuations in the price of natural gas, it may use natural gas derivative swap contracts, taking into account the partial offset of its long and short natural gas positions resulting from normal operating activities.

MPLX would be exposed to additional commodity risk in certain situations such as if producers under-deliver or over-deliver products or if processing facilities are operated in different recovery modes. In the event that MPLX has derivative positions in excess of the product delivered or expected to be delivered, the excess derivative positions may be terminated.

MPLX management conducts a standard credit review on counterparties to derivative contracts, and it has provided the counterparties with a guaranty as credit support for its obligations. MPLX uses standardized agreements that allow for offset of certain positive and negative exposures in the event of default or other terminating events, including bankruptcy.

Open Derivative Positions and Sensitivity Analysis

The following table includes the composition of net losses/gains on our commodity derivative positions for the years ended December 31, 2022 and 2021, respectively.

<i>(In millions)</i>	2022	2021
Realized loss on settled derivative positions	\$ (93)	\$ (359)
Unrealized gain (loss) on open net derivative positions	35	(21)
Net loss	<u>\$ (58)</u>	<u>\$ (380)</u>

See Item 8. Financial Statements and Supplementary Data – Note 21 for additional information on our open derivative positions at December 31, 2022.

Sensitivity analysis of the incremental effects on income from operations ("IFO") of hypothetical 10 percent and 25 percent increases and decreases in commodity prices for open commodity derivative instruments as of December 31, 2022 is provided in the following table.

<i>(In millions)</i>	Change in IFO from a Hypothetical Price Increase of		Change in IFO from a Hypothetical Price Decrease of	
	10%	25%	10%	25%
As of December 31, 2022				
Crude	\$ (109)	\$ (273)	\$ 109	\$ 273
Refined products	67	169	(67)	(169)
Blending products	(16)	(39)	16	39
Soybean oil	(11)	(27)	11	27

We remain at risk for possible changes in the market value of commodity derivative instruments; however, such risk should be mitigated by price changes in the underlying physical commodity. Effects of these offsets are not reflected in the above sensitivity analysis.

We evaluate our portfolio of commodity derivative instruments on an ongoing basis and add or revise strategies in anticipation of changes in market conditions and in risk profiles. Changes to the portfolio after December 31, 2022 would cause future IFO effects to differ from those presented above.

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 our current fixed rate debt may be higher than the current market. Variable-rate debt, such as borrowings under our revolving credit facilities, exposes us to short-term changes in market rates that impact our interest expense. See Item 8. Financial Statements and Supplementary Data – Note 22 for additional information on our debt.

Sensitivity analysis of the effect of a hypothetical 100-basis-point change in interest rates on long-term debt, including the portion classified as current and excluding finance leases, as of December 31, 2022 is provided in the following table. The fair value of cash and cash equivalents, receivables, accounts payable and accrued interest approximate carrying value and, in addition to short-term investments which are recorded at fair value, are relatively insensitive to changes in interest rates due to the short-term maturity of the instruments. Accordingly, these instruments are excluded from the table.

<i>(In millions)</i>	Fair Value ^(a)	Change in Fair Value ^(b)	Change in Net Income for the Year ended December 31, 2022 ^(c)
Long-term debt			
Fixed-rate	\$ 24,209	\$ 1,901	n/a
Variable-rate	\$ —	\$ —	\$ —

^(a) Fair value was based on market prices, where available, or current borrowing rates for financings with similar terms and maturities.

^(b) Assumes a 100-basis point decrease in the weighted average yield-to-maturity at December 31, 2022.

^(c) Assumes a 100-basis-point change in interest rates. The change in net income was based on the weighted average balance of debt outstanding for the year ended December 31, 2022.

See Item 8. Financial Statements and Supplementary Data – Note 20 for additional information on the fair value of our debt.

Foreign Currency Exchange Rate Risk

We are impacted by foreign exchange rate fluctuations related to some of our purchases of crude oil denominated in Canadian dollars and some of our sales of finished products denominated in Mexican pesos. We did not use derivatives to hedge our market risk exposure to these foreign exchange rate fluctuations in 2022.

Counterparty Risk

MPLX is subject to risk of loss resulting from nonpayment by its customers to whom it provides services, leases assets, or sells natural gas or NGLs. MPLX believes that certain contracts where it sells NGLs and acts as its producer customers' agent would allow it to pass those losses through to its customers, thus reducing its risk, when it is selling NGLs and acting as its producer customers' agent. Its credit exposure related to these customers is represented by the value of its trade receivables or lease receivables. Where exposed to credit risk, MPLX analyzes the customer's financial condition prior to entering into a transaction or agreement, establishes credit terms and monitors the appropriateness of these terms on an ongoing basis. In the event of a customer default, MPLX may sustain a loss and its cash receipts could be negatively impacted.

We are subject to risk of loss resulting from nonpayment or nonperformance by counterparties to our derivative contracts. Our credit exposure related to commodity derivative instruments is represented by the fair value of contracts with a net positive fair value at the reporting date. Outstanding instruments expose us to credit loss in the event of nonperformance by the counterparties to the agreements. Should the creditworthiness of one or more of our counterparties decline, our ability to mitigate nonperformance risk is limited to a counterparty agreeing to either a voluntary termination and subsequent cash settlement or a novation of the derivative contract to a third party. In the event of a counterparty default, we may sustain a loss and our cash receipts could be negatively impacted.

Item 8. Financial Statements and Supplementary Data

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Management's Responsibilities for Financial Statements

The accompanying consolidated financial statements of Marathon Petroleum Corporation and its subsidiaries ("MPC") are the responsibility of management and have been prepared in conformity with accounting principles generally accepted in the United States of America. They necessarily include some amounts that are based on best judgments and estimates. The financial information displayed in other sections of this Annual Report on Form 10-K is consistent with these consolidated financial statements.

MPC seeks to assure the objectivity and integrity of its financial records by careful selection of its managers, by organizational arrangements that provide an appropriate division of responsibility and by communications programs aimed at assuring that its policies and methods are understood throughout the organization.

The board of directors pursues its oversight role in the area of financial reporting and internal control over financial reporting through its Audit Committee. This committee, composed solely of independent directors, regularly meets (jointly and separately) with the independent registered public accounting firm, management and internal auditors to monitor the proper discharge by each of their responsibilities relative to internal accounting controls and the consolidated financial statements.

/s/ Michael J. Hennigan

*Michael J. Hennigan
President and
Chief Executive Officer*

/s/ Maryann T. Mannen

*Maryann T. Mannen
Executive Vice President and
Chief Financial Officer*

/s/ C. Kristopher Hagedorn

*C. Kristopher Hagedorn
Senior Vice President and
Controller*

Management's Report on Internal Control over Financial Reporting

MPC's management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) under the Securities Exchange Act of 1934, as amended). An evaluation of the design and effectiveness of our internal control over financial reporting, based on the framework in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, was conducted under the supervision and with the participation of management, including our chief executive officer and chief financial officer. Based on the results of this evaluation, MPC's management concluded that its internal control over financial reporting was effective as of December 31, 2022.

The effectiveness of MPC's internal control over financial reporting as of December 31, 2022 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which is included herein.

/s/ Michael J. Hennigan

*Michael J. Hennigan
President and
Chief Executive Officer*

/s/ Maryann T. Mannen

*Maryann T. Mannen
Executive Vice President and
Chief Financial Officer*

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Marathon Petroleum Corporation

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Marathon Petroleum Corporation and its subsidiaries (the "Company") as of December 31, 2022 and 2021, and the related consolidated statements of income, of comprehensive income, of equity and redeemable noncontrolling interest and of cash flows for each of the three years in the period ended December 31, 2022, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (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 audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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 (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) 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 (iii) 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.

Critical Audit Matters

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

Goodwill Impairment Test - Crude Gathering Reporting Unit

As described in Note 18 to the consolidated financial statements and as disclosed by management, the Company's consolidated goodwill balance was \$8.2 billion as of December 31, 2022, which includes, within the Midstream segment, the goodwill associated with MPLX's Crude Gathering reporting unit of \$1.1 billion. Management annually evaluates goodwill for impairment as of November 30, as well as whenever events or changes in circumstances indicate it is more likely than not that the fair value of a reporting unit with goodwill is less than its carrying amount. The fair value of the MPLX Crude Gathering reporting unit was determined based on applying both a discounted cash flow method (i.e. income approach) as well as a market approach. Significant assumptions that were used to estimate the reporting unit's fair value under the discounted cash flow method included management's best estimates of the discount rate, as well as estimates of future cash flows, which are impacted primarily by producer customers' development plans, which impact future volumes and capital requirements.

The principal considerations for our determination that performing procedures relating to the goodwill impairment test of the Crude Gathering reporting unit of the Midstream segment is a critical audit matter are (i) the significant judgment by management when determining the fair value of the reporting unit; and (ii) the high degree of auditor judgment, subjectivity, and effort in performing procedures and evaluating audit evidence relating to management's significant assumption related to future volumes.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's goodwill impairment test, including controls over the determination of the fair value of the Crude Gathering reporting unit. These procedures also included, among others (i) testing management's process for determining the fair value of the reporting unit; (ii) evaluating the appropriateness of the income and market approaches used; (iii) testing the completeness and accuracy of underlying data used by management in the approaches; and (iv) evaluating the reasonableness of the significant assumption related to future volumes. Evaluating the assumption related to future volumes involved (i) considering whether the assumption used was reasonable considering past performance of the reporting unit, producer customers' historical and future production volumes, and industry outlook reports; and (ii) considering whether the assumption was consistent with evidence obtained in other areas of the audit.

/s/ PricewaterhouseCoopers LLP

Toledo, Ohio

February 23, 2023

We have served as the Company's auditor since 2010.

Marathon Petroleum Corporation
Consolidated Statements of Income

(In millions, except per share data)

	2022	2021	2020
Revenues and other income:			
Sales and other operating revenues	\$ 177,453	\$ 119,983	\$ 69,779
Income (loss) from equity method investments ^(a)	655	458	(935)
Net gain on disposal of assets	1,061	21	70
Other income	783	468	118
Total revenues and other income	<u>179,952</u>	<u>120,930</u>	<u>69,032</u>
Costs and expenses:			
Cost of revenues (excludes items below)	151,671	110,008	65,733
Impairment expense	—	—	8,426
Depreciation and amortization	3,215	3,364	3,375
Selling, general and administrative expenses	2,772	2,537	2,710
Restructuring expenses	—	—	367
Other taxes	825	721	668
Total costs and expenses	<u>158,483</u>	<u>116,630</u>	<u>81,279</u>
Income (loss) from continuing operations	21,469	4,300	(12,247)
Net interest and other financial costs	1,000	1,483	1,365
Income (loss) from continuing operations before income taxes	20,469	2,817	(13,612)
Provision (benefit) for income taxes on continuing operations	4,491	264	(2,430)
Income (loss) from continuing operations, net of tax	15,978	2,553	(11,182)
Income from discontinued operations, net of tax	72	8,448	1,205
Net income (loss)	<u>16,050</u>	<u>11,001</u>	<u>(9,977)</u>
Less net income (loss) attributable to:			
Redeemable noncontrolling interest	88	100	81
Noncontrolling interests	1,446	1,163	(232)
Net income (loss) attributable to MPC	<u>\$ 14,516</u>	<u>\$ 9,738</u>	<u>\$ (9,826)</u>
Per share data (See Note 10)			
Basic:			
Continuing operations	\$ 28.17	\$ 2.03	\$ (16.99)
Discontinued operations	0.14	13.31	1.86
Net income (loss) per share	<u>\$ 28.31</u>	<u>\$ 15.34</u>	<u>\$ (15.13)</u>
Weighted average shares outstanding	512	634	649
Diluted:			
Continuing operations	\$ 27.98	\$ 2.02	\$ (16.99)
Discontinued operations	0.14	13.22	1.86
Net income (loss) per share	<u>\$ 28.12</u>	<u>\$ 15.24</u>	<u>\$ (15.13)</u>
Weighted average shares outstanding	516	638	649

^(a) 2020 includes impairment expense. See Note 7 for further information.

The accompanying notes are an integral part of these consolidated financial statements.

Marathon Petroleum Corporation
Consolidated Statements of Comprehensive Income

(Millions of dollars)

	2022	2021	2020
Net income (loss)	\$ 16,050	\$ 11,001	\$ (9,977)
Defined benefit plans:			
Actuarial changes, net of tax of \$36, \$91 and \$(51), respectively	122	276	(157)
Prior service, net of tax of \$(15), \$58 and \$(11), respectively	(52)	175	(34)
Other, net of tax of \$—, \$(2) and \$—, respectively	(1)	(6)	(1)
Other comprehensive income (loss)	69	445	(192)
Comprehensive income (loss)	16,119	11,446	(10,169)
Less comprehensive income (loss) attributable to:			
Redeemable noncontrolling interest	88	100	81
Noncontrolling interests	1,446	1,163	(232)
Comprehensive income (loss) attributable to MPC	<u>\$ 14,585</u>	<u>\$ 10,183</u>	<u>\$ (10,018)</u>

The accompanying notes are an integral part of these consolidated financial statements.

Marathon Petroleum Corporation
Consolidated Balance Sheets

(Millions of dollars, except share data)

Assets

	December 31,	
	2022	2021
Cash and cash equivalents	\$ 8,625	\$ 5,291
Short-term investments	3,145	5,548
Receivables, less allowance for doubtful accounts of \$29 and \$40, respectively	13,477	11,034
Inventories	8,827	8,055
Other current assets	1,168	568
Total current assets	35,242	30,496
Equity method investments	6,466	5,409
Property, plant and equipment, net	35,657	37,440
Goodwill	8,244	8,256
Right of use assets	1,214	1,372
Other noncurrent assets	3,081	2,400
Total assets	<u>\$ 89,904</u>	<u>\$ 85,373</u>

Liabilities

Accounts payable	\$ 15,312	\$ 13,700
Payroll and benefits payable	967	911
Accrued taxes	1,140	1,231
Debt due within one year	1,066	571
Operating lease liabilities	368	438
Other current liabilities	1,167	1,047
Total current liabilities	20,020	17,898
Long-term debt	25,634	24,968
Deferred income taxes	5,904	5,638
Defined benefit postretirement plan obligations	1,114	1,015
Long-term operating lease liabilities	841	927
Deferred credits and other liabilities	1,304	1,346
Total liabilities	<u>54,817</u>	<u>51,792</u>

Commitments and contingencies (see Note 29)

Redeemable noncontrolling interest	968	965
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Equity

Preferred stock, no shares issued and outstanding (par value \$0.01 per share, 30 million shares authorized)	—	—
Common stock:		
Issued – 990 million and 984 million shares (par value \$0.01 per share, 2 billion shares authorized)	10	10
Held in treasury, at cost – 536 million and 405 million shares	(31,841)	(19,904)
Additional paid-in capital	33,402	33,262
Retained earnings	26,142	12,905
Accumulated other comprehensive income (loss)	2	(67)
Total MPC stockholders' equity	27,715	26,206
Noncontrolling interests	6,404	6,410
Total equity	34,119	32,616
Total liabilities, redeemable noncontrolling interest and equity	<u>\$ 89,904</u>	<u>\$ 85,373</u>

The accompanying notes are an integral part of these consolidated financial statements.

Marathon Petroleum Corporation
Consolidated Statements of Cash Flows

(Millions of dollars)

	2022	2021	2020
Operating activities:			
Net income (loss)	\$ 16,050	\$ 11,001	\$ (9,977)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:			
Amortization of deferred financing costs and debt discount	50	79	69
Impairment expense	—	—	8,426
Depreciation and amortization	3,215	3,364	3,375
Pension and other postretirement benefits, net	172	(499)	220
Deferred income taxes	290	(169)	(241)
Net gain on disposal of assets	(1,061)	(21)	(70)
(Income) loss from equity method investments	(655)	(458)	935
Distributions from equity method investments	772	652	577
Income from discontinued operations	(72)	(8,448)	(1,205)
Changes in income tax receivable	(555)	2,089	(1,807)
Changes in the fair value of derivative instruments	(147)	16	45
Changes in:			
Current receivables	(2,315)	(5,299)	1,465
Inventories	(787)	(33)	1,750
Current accounts payable and accrued liabilities	1,909	6,260	(2,927)
Right of use assets and operating lease liabilities, net	—	3	(19)
All other, net	(547)	(153)	191
Cash provided by operating activities - continuing operations	16,319	8,384	807
Cash provided by (used in) operating activities - discontinued operations	42	(4,024)	1,612
Net cash provided by operating activities	16,361	4,360	2,419
Investing activities:			
Additions to property, plant and equipment	(2,420)	(1,464)	(2,787)
Acquisitions, net of cash acquired	(413)	—	—
Disposal of assets	90	153	150
Investments – acquisitions and contributions	(405)	(210)	(485)
– redemptions, repayments and return of capital	515	39	137
Purchases of short-term investments	(6,023)	(12,498)	—
Sales of short-term investments	1,296	1,544	—
Maturities of short-term investments	7,159	5,406	—
All other, net	824	513	63
Cash provided by (used in) investing activities - continuing operations	623	(6,517)	(2,922)
Cash provided by (used in) investing activities - discontinued operations	—	21,314	(335)
Net cash provided by (used in) investing activities	623	14,797	(3,257)
Financing activities:			
Commercial paper – issued	—	7,414	2,055
– repayments	—	(8,437)	(1,031)
Long-term debt – borrowings	3,379	12,150	17,082
– repayments	(2,280)	(17,400)	(15,380)
Debt issuance costs	(39)	—	(50)

(Millions of dollars)

	2022	2021	2020
Issuance of common stock	243	106	11
Common stock repurchased	(11,922)	(4,654)	—
Dividends paid	(1,279)	(1,484)	(1,510)
Distributions to noncontrolling interests	(1,214)	(1,449)	(1,244)
Repurchases of noncontrolling interests	(491)	(630)	(33)
All other, net	(44)	(35)	(35)
Net cash used in financing activities	(13,647)	(14,419)	(135)
Net change in cash, cash equivalents and restricted cash	\$ 3,337	\$ 4,738	\$ (973)

Cash, cash equivalents and restricted cash balances:^(a)

Continuing operations - beginning of year	5,294	416	1,395
Discontinued operations - beginning of year	—	140	134
Less: Discontinued operations - end of year	—	—	140
Continuing operations - end of year	<u>\$ 8,631</u>	<u>\$ 5,294</u>	<u>\$ 416</u>

^(a) Restricted cash is included in other current assets on our consolidated balance sheets.

The accompanying notes are an integral part of these consolidated financial statements.

Marathon Petroleum Corporation
Consolidated Statements of Equity and Redeemable Noncontrolling Interest

	MPC Stockholders' Equity									
	Common Stock		Treasury Stock		Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Non- controlling Interests	Total Equity	Redeemable Non- controlling Interest
<i>(Shares in millions; amounts in millions of dollars)</i>	Shares	Amount	Shares	Amount						
Balance as of December 31, 2019	978	\$ 10	(329)	\$(15,143)	\$33,157	\$15,990	\$ (320)	\$ 8,445	\$42,139	\$ 968
Net income (loss)	—	—	—	—	—	(9,826)	—	(232)	(10,058)	81
Dividends declared on common stock (\$2.32 per share)	—	—	—	—	—	(1,514)	—	—	(1,514)	—
Distributions to noncontrolling interests	—	—	—	—	—	—	—	(1,163)	(1,163)	(81)
Other comprehensive loss	—	—	—	—	—	—	(192)	—	(192)	—
Share-based compensation	2	—	—	(14)	92	—	—	8	86	—
Equity transactions of MPLX	—	—	—	—	(41)	—	—	(5)	(46)	—
Balance as of December 31, 2020	980	\$ 10	(329)	\$(15,157)	\$33,208	\$ 4,650	\$ (512)	\$ 7,053	\$29,252	\$ 968
Net income	—	—	—	—	—	9,738	—	1,163	10,901	100
Dividends declared on common stock (\$2.32 per share)	—	—	—	—	—	(1,483)	—	—	(1,483)	—
Distributions to noncontrolling interests	—	—	—	—	—	—	—	(1,349)	(1,349)	(100)
Other comprehensive income	—	—	—	—	—	—	445	—	445	—
Shares repurchased	—	—	(76)	(4,740)	—	—	—	—	(4,740)	—
Share-based compensation	4	—	—	(7)	147	—	—	4	144	—
Equity transactions of MPLX	—	—	—	—	(93)	—	—	(461)	(554)	(3)
Balance as of December 31, 2021	984	\$ 10	(405)	\$(19,904)	\$33,262	\$12,905	\$ (67)	\$ 6,410	\$32,616	\$ 965
Net income	—	—	—	—	—	14,516	—	1,446	15,962	88
Dividends declared on common stock (\$2.49 per share)	—	—	—	—	—	(1,279)	—	—	(1,279)	—
Distributions to noncontrolling interests	—	—	—	—	—	—	—	(1,129)	(1,129)	(85)
Other comprehensive income	—	—	—	—	—	—	69	—	69	—
Shares repurchased	—	—	(131)	(11,933)	—	—	—	—	(11,933)	—
Share-based compensation	6	—	—	(4)	260	—	—	4	260	—
Equity transactions of MPLX	—	—	—	—	(120)	—	—	(327)	(447)	—
Balance as of December 31, 2022	990	\$ 10	(536)	\$(31,841)	\$33,402	\$26,142	\$ 2	\$ 6,404	\$34,119	\$ 968

The accompanying notes are an integral part of these consolidated financial statements.

Notes to Consolidated Financial Statements

1. Description of the Business and Basis of Presentation

Description of the Business

We are a leading, integrated, downstream energy company headquartered in Findlay, Ohio. We operate the nation's largest refining system. We sell refined products to wholesale marketing customers domestically and internationally, to buyers on the spot market and to independent entrepreneurs who operate branded outlets. We also sell transportation fuel to consumers through direct dealer locations under long-term supply contracts. MPC's midstream operations are primarily conducted through MPLX LP ("MPLX"), which owns and operates crude oil and light product transportation and logistics infrastructure as well as gathering, processing and fractionation assets. We own the general partner and a majority limited partner interest in MPLX.

On May 14, 2021, we completed the sale of Speedway, our company-owned and operated retail transportation fuel and convenience store business, to 7-Eleven, Inc. ("7-Eleven"). Speedway's results are reported separately as discontinued operations, net of tax, in our consolidated statements of income for all periods presented. In addition, we separately disclosed the operating and investing cash flows of Speedway as discontinued operations within our consolidated statements of cash flow. See Note 5 for discontinued operations disclosures.

Refer to Notes 6 and 12 for additional information about our operations.

Basis of Presentation

All significant intercompany transactions and accounts have been eliminated.

In accordance with ASC 205, *Discontinued Operations*, intersegment sales from our Refining & Marketing segment to Speedway are no longer eliminated as intercompany transactions and are now presented within sales and other operating revenues, since we continue to supply fuel to Speedway subsequent to the sale to 7-Eleven. All periods presented have been retrospectively adjusted through the sale date of May 14, 2021 to reflect this change. Additionally, from August 2, 2020 through May 14, 2021, in accordance with ASC 360, *Property, Plant, and Equipment*, we ceased recording depreciation and amortization for Speedway's PP&E, finite-lived intangible assets and right of use lease assets.

2. Summary of Principal Accounting Policies

Principles Applied in Consolidation

These consolidated financial statements include the accounts of our majority-owned, controlled subsidiaries and MPLX. As of December 31, 2022, we owned the general partner and approximately 65 percent of the outstanding MPLX common units. Due to our ownership of the general partner interest, we have determined that we control MPLX and therefore we consolidate MPLX and record a noncontrolling interest for the interest owned by the public. Changes in ownership interest in consolidated subsidiaries that do not result in a change in control are recorded as equity transactions.

Investments in entities over which we have significant influence, but not control, are accounted for using the equity method of accounting. This includes entities in which we hold majority ownership but the minority shareholders have substantive participating rights. Income from equity method investments represents our proportionate share of net income generated by the equity method investees.

Differences in the basis of the investments and the separate net asset values of the investees, if any, are amortized into net income over the remaining useful lives of the underlying assets and liabilities, except for any excess related to goodwill. Equity method investments are evaluated for impairment whenever changes in the facts and circumstances indicate an other than temporary loss in value has occurred. When the loss is deemed to be other than temporary, the carrying value of the equity method investment is written down to fair value.

Use of Estimates

The preparation of financial statements in accordance with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities as of the date of the consolidated financial statements and the reported amounts of revenues and expenses during the respective reporting periods. Actual results could differ from those estimates.

Revenue Recognition

We recognize revenue based on consideration specified in contracts or agreements with customers when we satisfy our performance obligations by transferring control over products or services to a customer. We made an accounting policy election that all taxes assessed by a governmental authority that are both imposed on and concurrent with a revenue-producing transaction and collected from our customers will be recognized on a net basis within sales and other operating revenues.

Our revenue recognition patterns are described below by reportable segment:

- Refining & Marketing - The vast majority of our Refining & Marketing contracts contain pricing that is based on the market price for the product at the time of delivery. Our obligations to deliver product volumes are typically satisfied and revenue is recognized when control of the product transfers to our customers. Concurrent with the transfer of control, we typically receive the right to payment for the delivered product, the customer accepts the product and the customer has significant risks and rewards of ownership of the product. Payment terms require customers to pay shortly after delivery and do not contain significant financing components.
- Midstream - Midstream revenue transactions typically are defined by contracts under which we sell a product or provide a service. Revenues from sales of product are recognized when control of the product transfers to the customer. Revenues from services are recognized over time when the performance obligation is satisfied as services are provided in a series. We have elected to use the output measure of progress to recognize revenue based on the units delivered, processed or transported. The transaction prices in our Midstream contracts often have both fixed components, related to minimum volume commitments, and variable components, which are primarily dependent on volumes. Variable consideration will generally not be estimated at contract inception as the transaction price is specifically allocable to the services provided at each period end.

Refer to Note 23 for disclosure of our revenue disaggregated by segment and product line and to Note 12 for a description of our reportable segment operations.

Crude Oil and Refined Product Exchanges and Matching Buy/Sell Transactions

We enter into exchange contracts and matching buy/sell arrangements whereby we agree to deliver a particular quantity and quality of crude oil or refined products at a specified location and date to a particular counterparty and to receive from the same counterparty the same commodity at a specified location on the same or another specified date. The exchange receipts and deliveries are nonmonetary transactions, with the exception of associated grade or location differentials that are settled in cash. The matching buy/sell purchase and sale transactions are settled in cash. No revenues are recorded for exchange and matching buy/sell transactions as they are accounted for as exchanges of inventory. The exchange transactions are recognized at the carrying amount of the inventory transferred.

Cash and Cash Equivalents

Cash and cash equivalents include cash on hand and on deposit and investments in highly liquid debt instruments with maturities of three months or less.

Short-Term Investments

Investments with a maturity date greater than three months that we intend to convert to cash or cash equivalents within a year or less are classified as short-term investments in our consolidated balance sheets. Additionally, in accordance with ASC 320, *Investments - Debt Securities*, we have classified all short-term investments as available-for-sale securities and changes in fair market value are reported in other comprehensive income.

Accounts Receivable and Allowance for Doubtful Accounts

Our receivables primarily consist of customer accounts receivable. Customer receivables are recorded at the invoiced amounts and generally do not bear interest. Allowances for doubtful accounts are generally recorded when it becomes probable the receivable will not be collected and are booked to bad debt expense. The allowance for doubtful accounts is the best estimate of the amount of probable credit losses in customer accounts receivable. We review the allowance quarterly and past-due balances over 150 days are reviewed individually for collectability.

We mitigate credit risk with master netting agreements with companies engaged in the crude oil or refinery feedstock trading and supply business or the petroleum refining industry. A master netting agreement generally provides for a once per month net cash settlement of the accounts receivable from and the accounts payable to a particular counterparty.

Leases

Contracts with a term greater than one year that convey the right to direct the use of and obtain substantially all of the economic benefit of an asset are accounted for as right of use assets.

Right of use asset and lease liability balances are recorded at the commencement date at present value of the fixed lease payments using a secured incremental borrowing rate with a maturity similar to the lease term because our leases do not provide implicit rates. We have elected to include both lease and non-lease components in the present value of the lease payments for all lessee asset classes with the exception of our marine and third-party contractor service equipment leases. The lease component of the payment for the marine and equipment asset classes is determined using a relative standalone selling price. See Note 28 for additional disclosures about our lease contracts.

As a lessor under ASU No. 2016-02, *Leases* ("ASC 842"), MPLX may be required to re-classify existing operating leases to sales-type leases upon modification and related reassessment of the leases. See Note 28 for further information regarding our ongoing evaluation of the impacts of lease reassessments as modifications occur. The net investment in sales-type leases is recorded within receivables, net and other noncurrent assets on the consolidated balance sheets. These amounts are comprised of the present value of the sum of the future minimum lease payments representing the value of the lease receivable and the unguaranteed residual value of the lease assets. Management assesses the net investment in sales-type leases for recoverability quarterly.

Inventories

Inventories are carried at the lower of cost or market value. Cost of inventories is determined primarily under the LIFO method. Costs for crude oil and refined product inventories are aggregated on a consolidated basis for purposes of assessing if the LIFO cost basis of these inventories may have to be written down to market value.

Fair Value

We account for certain assets and liabilities at fair value. The hierarchy below lists three levels of fair value based on the extent to which inputs used in measuring fair value are observable in the market. We categorize each of our fair value measurements in one of these three levels based on the lowest level input that is significant to the fair value measurement in its entirety. These levels are:

- Level 1 – inputs are based upon unadjusted quoted prices for identical instruments in active markets. Our Level 1 derivative assets and liabilities include exchange-traded contracts for crude oil and refined products measured at fair value with a market approach using the close-of-day settlement prices for the market. Commodity derivatives are covered under master netting agreements with an unconditional right to offset. Collateral deposits in futures commission merchant accounts covered by master netting agreements related to Level 1 commodity derivatives are classified as Level 1.
- Level 2 – inputs are based upon quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-based valuation techniques for which all significant inputs are observable in the market or can be corroborated by observable market data for substantially the full term of the assets or liabilities. Where applicable, these models project future cash flows and discount the future amounts to a present value using market-based observable inputs including interest rate curves, credit spreads, and forward and spot prices for currencies. Our Level 2 investments include commercial paper, certificates of deposit, time deposits and corporate notes and bonds. Our Level 2 derivative assets and liabilities primarily include certain OTC contracts.
- Level 3 – inputs are generally unobservable and typically reflect management's estimates of assumptions that market participants would use in pricing the asset or liability. The fair values are therefore determined using model-based techniques, including option pricing models and discounted cash flow models. Our Level 3 assets and liabilities include goodwill, long-lived assets and intangible assets, when they are recorded at fair value due to an impairment charge and an embedded derivative liability relates to a natural gas purchase agreement embedded in a keep-whole processing agreement. Unobservable inputs used in the models are significant to the fair values of the assets and liabilities.

Derivative Instruments

We use derivatives to economically hedge a portion of our exposure to commodity price risk and, historically, to interest rate risk. Our use of selective derivative instruments that assume market risk is limited. All derivative instruments (including derivative instruments embedded in other contracts) are recorded at fair value. Certain commodity derivatives are reflected on the consolidated balance sheets on a net basis by counterparty as they are governed by master netting agreements. Cash flows related to derivatives used to hedge commodity price risk and interest rate risk are classified in operating activities with the underlying transactions.

Derivatives not designated as accounting hedges

Derivatives that are not designated as accounting hedges may include commodity derivatives used to hedge price risk on (1) inventories, (2) fixed price sales of refined products, (3) the acquisition of foreign-sourced crude oil, (4) the acquisition of ethanol for blending with refined products, (5) the sale of NGLs, (6) the purchase of natural gas and (7) the purchase of soybean oil. Changes in the fair value of derivatives not designated as accounting hedges are recognized immediately in net income.

Concentrations of credit risk

All of our financial instruments, including derivatives, involve elements of credit and market risk. The most significant portion of our credit risk relates to nonperformance by counterparties. The counterparties to our financial instruments consist primarily of major financial institutions and companies within the energy industry. To manage counterparty risk associated with financial instruments, we select and monitor counterparties based on an assessment of their financial strength and on credit ratings, if available. Additionally, we limit the level of exposure with any single counterparty.

Property, Plant and Equipment

Property, plant and equipment are recorded at cost and depreciated on a straight-line basis over the estimated useful lives of the assets, generally 10 to 40 years for refining and midstream assets, 25 years for office buildings and 4 to 7 years for other miscellaneous fixed assets. Such assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset group may not be recoverable. If the sum of the expected undiscounted future cash flows from the use of the asset group and its eventual disposition is less than the carrying amount of the asset group, an impairment assessment is performed and the excess of the book value over the fair value of the asset group is recorded as an impairment loss.

When items of property, plant and equipment are sold or otherwise disposed of, any gains or losses are reported in net income. Gains on the disposal of property, plant and equipment are recognized when earned, which is generally at the time of closing. If a loss on disposal is expected, such losses are recognized when the assets are classified as held for sale.

Interest expense is capitalized for qualifying assets under construction. Capitalized interest costs are included in property, plant and equipment and are depreciated over the useful life of the related asset.

Goodwill and Intangible Assets

Goodwill represents the excess of the purchase price over the estimated fair value of the net assets acquired in the acquisition of a business. Goodwill is not amortized, but rather is tested for impairment at the reporting unit level annually and when events or changes in circumstances indicate that the fair value of a reporting unit with goodwill has been reduced below carrying value. If we determine, based on a qualitative assessment, that it is not more likely than not that a reporting unit's fair value is less than its carrying amount, no further impairment testing is required. If we do not perform a qualitative assessment or if that assessment indicates that further impairment testing is required, the fair value of each reporting unit is determined using an income and/or market approach which is compared to the carrying value of the reporting unit. If the carrying amount of the reporting unit exceeds its fair value, an impairment loss would be recognized in an amount equal to that excess, limited to the total amount of goodwill allocated to that reporting unit. The fair value under the income approach is calculated using the expected present value of future cash flows method. Significant assumptions used in the cash flow forecasts include future volumes, discount rates, and future capital requirements.

Amortization of intangibles with definite lives is calculated using the straight-line method, which is reflective of the benefit pattern in which the estimated economic benefit is expected to be received over the estimated useful life of the intangible asset. Intangibles subject to amortization are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of the intangible may not be recoverable. If the sum of the expected undiscounted future cash flows related to the asset is less than the carrying amount of the asset, an impairment loss is recognized based on the fair value of the asset. Intangibles not subject to amortization are tested for impairment annually and when circumstances indicate that the fair value is less than the carrying amount of the intangible. If the fair value is less than the carrying value, an impairment is recorded for the difference.

Major Maintenance Activities

Costs for planned turnaround and other major maintenance activities are expensed in the period incurred. These types of costs include contractor repair services, materials and supplies, equipment rentals and our labor costs.

Environmental Costs

Environmental expenditures for additional equipment that mitigates or prevents future contamination or improves environmental safety or efficiency of the existing assets are capitalized. We recognize remediation costs and penalties when the responsibility to remediate is probable and the amount of associated costs can be reasonably estimated. The timing of remediation accruals coincides with completion of a feasibility study or the commitment to a formal plan of action. Remediation liabilities are accrued based on estimates of known environmental exposure and are discounted when the estimated amounts are reasonably fixed and determinable. If recoveries of remediation costs from third parties are probable, a receivable is recorded and is discounted when the estimated amount is reasonably fixed and determinable.

Asset Retirement Obligations

The fair value of asset retirement obligations is recognized in the period in which the obligations are incurred if a reasonable estimate of fair value can be made. The majority of our recognized asset retirement liability relates to conditional asset retirement obligations for removal and disposal of fire-retardant material from certain refining facilities. The remaining recognized asset retirement liability relates to other refining assets, certain pipelines and processing facilities and other related pipeline assets. The fair values recorded for such obligations are based on the most probable current cost projections.

Asset retirement obligations have not been recognized for some assets because the fair value cannot be reasonably estimated since the settlement dates of the obligations are indeterminate. Such obligations will be recognized in the period when sufficient information becomes available to estimate a range of potential settlement dates. The asset retirement obligations principally include the hazardous material disposal and removal or dismantlement requirements associated with the closure of certain refining, terminal, pipeline and processing assets.

Our practice is to keep our 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 settlement date 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.

Income Taxes

Deferred tax assets and liabilities are recognized for the estimated future tax consequences attributable to differences between the financial statement carrying amounts of assets and liabilities and their tax bases. Deferred tax assets are recorded when it is more likely than not that they will be realized. The realization of deferred tax assets is assessed periodically based on several factors, primarily our expectation to generate sufficient future taxable income.

Share-Based Compensation Arrangements

The fair value of stock options granted to our employees is estimated on the date of grant using the Black-Scholes option pricing model. The model employs various assumptions based on management's estimates at the time of grant, which impact the calculation of fair value and ultimately, the amount of expense that is recognized over the vesting period of the stock option award. Of the required assumptions, the expected life of the stock option award and the expected volatility of our stock price have the most significant impact on the fair value calculation. The average expected life is based on our historical employee exercise behavior. The assumption for expected volatility of our stock price reflects a weighting of 50 percent of our common stock implied volatility and 50 percent of our common stock historical volatility.

The fair value of restricted stock awards granted to our employees is determined based on the fair market value of our common stock on the date of grant. The fair value of performance unit awards granted to our employees is estimated on the date of grant using a Monte Carlo valuation model.

Our share-based compensation expense is recognized based on management's estimate of the awards that are expected to vest, using the straight-line attribution method for all service-based awards with a graded vesting feature. If actual forfeiture results are different than expected, adjustments to recognized compensation expense may be required in future periods. Unearned share-based compensation is charged to equity when restricted stock awards are granted. Compensation expense is recognized over the vesting period and is adjusted if conditions of the restricted stock award are not met.

Business Combinations

We recognize and measure the assets acquired and liabilities assumed in a business combination based on their estimated fair values at the acquisition date. Any excess or deficiency of the purchase consideration when compared to the fair value of the net tangible assets acquired, if any, is recorded as goodwill or gain from a bargain purchase. For material acquisitions, management engages an independent valuation specialist to assist with the determination of fair value of the assets acquired, liabilities assumed, noncontrolling interest, if any, and goodwill, based on recognized business valuation methodologies. An income, market or cost valuation method may be utilized to estimate the fair value of the assets acquired, liabilities assumed, and noncontrolling interest, if any, in a business combination. The income valuation method represents the present value of future cash flows over the life of the asset using: (i) discrete financial forecasts, which rely on management's estimates of revenue and operating expenses; (ii) long-term growth rates; and (iii) appropriate discount rates. The market valuation method uses prices paid for a reasonably similar asset by other purchasers in the market, with adjustments relating to any differences between the assets. The cost valuation method is based on the replacement cost of a comparable asset at prices at the time of the acquisition reduced for depreciation of the asset. If the initial accounting for the business combination is incomplete by the end of the reporting period in which the acquisition occurs, an estimate will be recorded. Subsequent to the acquisition date, and not later than one year from the acquisition date, we will record any material adjustments to the initial estimate based on new information obtained that would have existed as of the date of the acquisition. Any adjustment that arises from information obtained that did not exist as of the date of the acquisition will be recorded in the period of the adjustment. Acquisition-related costs are expensed as incurred in connection with each business combination.

Environmental Credits and Obligations

In order to comply with certain regulations, specifically the RFS2 requirements implemented by the EPA and the cap-and-trade emission reduction program and low carbon fuel standard implemented by state programs, we are required to reduce our emissions, blend certain levels of biofuels or obtain allowances or credits to offset the obligations created by our operations. In regard to each program, we record an asset, included in other current assets or other noncurrent assets on the consolidated balance sheets, for allowances or credits owned in excess of our anticipated current period compliance requirements. The asset value is based on the product of the excess allowances or credits as of the balance sheet date, if any, and the weighted average cost of those allowances or credits. We record a liability, included in other current liabilities or deferred credits and other liabilities on the consolidated balance sheets, when we are deficient allowances or credits based on the product of the deficient amount as of the balance sheet date, if any, and the market price of the allowances or credits at the balance sheet date. The cost of allowances or credits used for compliance is reflected in cost of revenues on the consolidated statements of income. Any gains or losses on the sale or expiration of allowances or credits are classified as other income on the consolidated statements of income. Proceeds from the sale of allowances or credits are reported in investing activities - all other, net on the consolidated statements of cash flow.

3. Accounting Standards

Recently Adopted

We adopted the following ASU during 2022, which did not have a material impact to our financial statements or financial statement disclosures:

ASU	Effective Date
2021-10 <i>Government Assistance (Topic 832): Disclosures by Business Entities about Government Assistance</i>	January 1, 2022

4. Short-Term Investments

Investments Components

The components of investments were as follows:

December 31, 2022							
(Millions of dollars)	Fair Value Level	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value	Cash and Cash Equivalents	Short-term Investments
Available-for-sale debt securities							
Commercial paper	Level 2	\$ 3,074	\$ —	\$ (1)	\$ 3,073	\$ 1,106	\$ 1,967
Certificates of deposit and time deposits	Level 2	2,093	—	—	2,093	1,500	593
U.S. government securities	Level 1	1,071	—	—	1,071	498	573
Corporate notes and bonds	Level 2	66	—	—	66	54	12
Total available-for-sale debt securities		<u>\$ 6,304</u>	<u>\$ —</u>	<u>\$ (1)</u>	<u>\$ 6,303</u>	<u>\$ 3,158</u>	<u>\$ 3,145</u>
Cash					5,467	5,467	—
Total					<u>\$ 11,770</u>	<u>\$ 8,625</u>	<u>\$ 3,145</u>

December 31, 2021							
(Millions of dollars)	Fair Value Level	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value	Cash and Cash Equivalents	Short-term Investments
Available-for-sale debt securities							
Commercial paper	Level 2	\$ 4,905	\$ —	\$ (1)	\$ 4,904	\$ 868	\$ 4,036
Certificates of deposit and time deposits	Level 2	2,024	—	—	2,024	750	1,274
U.S. government securities	Level 1	28	—	—	28	—	28
Corporate notes and bonds	Level 2	271	—	—	271	61	210
Total available-for-sale debt securities		<u>\$ 7,228</u>	<u>\$ —</u>	<u>\$ (1)</u>	<u>\$ 7,227</u>	<u>\$ 1,679</u>	<u>\$ 5,548</u>
Cash					3,612	3,612	—
Total					<u>\$ 10,839</u>	<u>\$ 5,291</u>	<u>\$ 5,548</u>

Our investment policy includes concentration limits and credit rating requirements which limits our investments to high quality, short term and highly liquid securities.

Unrealized losses on debt investments held from May 14, 2021, which coincides with the sale of Speedway, to December 31, 2022 were not material. Realized gains/losses were not material. All of our available-for-sale debt securities held as of December 31, 2022 mature within one year or less or are readily available for use.

5. Discontinued Operations

On May 14, 2021, we completed the sale of Speedway, our company-owned and operated retail transportation fuel and convenience store business, to 7-Eleven for cash proceeds of approximately \$21.38 billion. After-tax proceeds were approximately \$17.22 billion. This transaction resulted in a pretax gain of \$11.68 billion (\$8.02 billion after income taxes) after deducting the book value of the net assets and certain other adjustments.

The transaction provided for adjustments for working capital and other miscellaneous items, which were finalized with 7-Eleven in the fourth quarter of 2022, resulting in an additional pretax gain of \$60 million.

Results of operations for Speedway are reflected through the close of the sale. The following table presents Speedway results and the gain on sale as reported in income from discontinued operations, net of tax, within our consolidated statements of income.

(Millions of dollars)

	2022	2021	2020
Revenues, other income and net gain on disposal of assets:			
Revenues and other income	\$ —	\$ 8,420	\$ 19,919
Net gain on disposal of assets	60	11,682	1
Total revenues, other income and net gain on disposal of assets	60	20,102	19,920
Costs and expenses:			
Cost of revenues (excludes items below)	—	7,654	17,573
Depreciation and amortization	—	3	244
Selling, general and administrative expenses	—	121	323
Other taxes	—	75	193
Total costs and expenses	—	7,853	18,333
Income from operations	60	12,249	1,587
Net interest and other financial costs	—	6	20
Income before income taxes	60	12,243	1,567
Provision (benefit) for income taxes	(12)	3,795	362
Income from discontinued operations, net of tax	\$ 72	\$ 8,448	\$ 1,205

Fuel Supply Agreements

During the second quarter of 2021, we entered into various 15-year fuel supply agreements through which we continue to supply fuel to Speedway.

6. Master Limited Partnership

We own the general partner and a majority limited partner interest in MPLX, which owns and operates crude oil and light product transportation and logistics infrastructure as well as gathering, processing and fractionation assets. We control MPLX through our ownership of the general partner interest and, as of December 31, 2022, we owned approximately 65 percent of the outstanding MPLX common units.

Unit Repurchase Program

On November 2, 2020, MPLX announced the board authorization of a unit repurchase program for the repurchase of up to \$1.0 billion of MPLX's outstanding common units held by the public, which was exhausted during the fourth quarter of 2022. On August 2, 2022, MPLX announced its board of directors approved an incremental \$1.0 billion unit repurchase authorization. The unit repurchase authorizations have no expiration date. MPLX may utilize various methods to effect the repurchases, which could include open market repurchases, negotiated block transactions, accelerated unit repurchases, tender offers or open market solicitations for units, some of which may be effected through Rule 10b5-1 plans. The timing and amount of future repurchases, if any, will depend upon several factors, including market and business conditions, and such repurchases may be discontinued at any time.

Total unit repurchases were as follows for the respective periods:

(In millions, except per share data)

	2022	2021	2020
Number of common units repurchased	15	23	1
Cash paid for common units repurchased	\$ 491	\$ 630	\$ 33
Average cost per unit	\$ 31.96	\$ 27.52	\$ 22.29

As of December 31, 2022, MPLX had approximately \$846 million remaining under its unit repurchase authorizations.

Redemption of Business from MPLX

On July 31, 2020, Western Refining Southwest, Inc. (now known as Western Refining Southwest LLC) ("WRSW"), a wholly owned subsidiary of MPC, entered into a Redemption Agreement (the "Redemption Agreement") with MPLX, pursuant to which

MPLX transferred to WRSW all of the outstanding membership interests in Western Refining Wholesale, LLC, ("WRW") in exchange for the redemption of MPLX common units held by WRSW. The transaction effected the transfer to MPC of the Western wholesale distribution business that MPLX acquired as a result of its acquisition of Andeavor Logistics LP ("ANDX"). Beginning in the third quarter of 2020, the results of these operations are presented in MPC's Refining & Marketing segment.

At the closing, per the terms of Redemption Agreement, MPLX redeemed 18,582,088 MPLX common units (the "Redeemed Units") held by WRSW. The number of Redeemed Units was calculated by dividing WRW's aggregate valuation of \$340 million by the simple average of the volume weighted average NYSE prices of an MPLX common unit for the ten trading days ending at market close on July 27, 2020. The transaction resulted in a minor decrease in MPC's ownership interest in MPLX.

Series B Preferred Units

As of December 31, 2022, MPLX had 600,000 preferred units ("Series B preferred units") representing limited partner interests of MPLX and having a liquidation value of \$1,000 per unit. On February 15, 2023, MPLX exercised its right to redeem all of the Series B preferred units at the redemption price of \$1,000 per unit.

The Series B preferred units are included in noncontrolling interests on our consolidated balance sheets.

Agreements

We have various long-term, fee-based commercial agreements with MPLX. Under these agreements, MPLX provides transportation, storage, distribution and marketing services to us. With certain exceptions, these agreements generally contain minimum volume commitments. These transactions are eliminated in consolidation but are reflected as intersegment transactions between our Refining & Marketing and Midstream segments. We also have agreements with MPLX that establish fees for operational and management services provided between us and MPLX and for executive management services and certain general and administrative services provided by us to MPLX. These transactions are eliminated in consolidation but are reflected as intersegment transactions between our Corporate and Midstream segments.

Noncontrolling Interest

As a result of equity transactions of MPLX, we are required to adjust non-controlling interest and additional paid-in capital. Changes in MPC's additional paid-in capital resulting from changes in its ownership interest in MPLX were as follows:

<i>(Millions of dollars)</i>	2022	2021	2020
Decrease due to change in ownership	\$ (164)	\$ (166)	\$ (27)
Tax impact	44	73	(14)
Decrease in MPC's additional paid-in capital, net of tax	<u>\$ (120)</u>	<u>\$ (93)</u>	<u>\$ (41)</u>

7. Impairments

During 2021, we recognized \$69 million of impairment expense within our Midstream segment related to the divestiture, abandonment or closure of certain assets as detailed in the table below.

During the first quarter of 2020, the outbreak of COVID-19 caused overall deterioration in the economy and the environment in which we operate. The related changes to our expected future cash flows, as well as a sustained decrease in share price, were considered triggering events requiring the performance of various tests of the carrying values of our assets. Triggering events requiring the performance of various tests of the carrying value of our Midstream assets were also identified by MPLX as a result of the overall deterioration in the economy and the environment in which MPLX and its customers operate, which led to a reduction in forecasted volumes processed by the systems operated by MarkWest Utica EMG, L.L.C., MPLX's equity method investee, as well as a sustained decrease in the MPLX unit price. These tests resulted in the majority of the impairment charges in 2020, as discussed below.

The table below provides information related to the impairments recognized, along with the location of these impairments within the consolidated statements of income.

<i>(Millions of dollars)</i>	<i>Income Statement Line</i>	2022	2021	2020
Goodwill	Impairment expense	\$ —	\$ —	\$ 7,394
Equity method investments	Income (loss) from equity method investments	—	13	1,315
Long-lived assets	Impairment expense ^(a)	—	—	1,032
Long-lived assets	Depreciation and amortization	—	56	—
Total impairments		<u>\$ —</u>	<u>\$ 69</u>	<u>\$ 9,741</u>

^(a) The amount of 2020 impairment expense not described in the narrative below is related to certain immaterial Midstream assets.

Goodwill

During the first quarter of 2020, we recorded an impairment of goodwill of \$7.33 billion. The goodwill impairment within the Refining & Marketing segment was primarily driven by the effects of the COVID-19 pandemic and the decline in commodity prices. The impairment within the Midstream segment was primarily driven by additional information related to the slowing of drilling activity, which reduced production growth forecasts from MPLX's producer customers.

During the third quarter of 2020, we recorded an impairment of goodwill of \$64 million. The \$64 million of goodwill was transferred from our Midstream segment to our Refining & Marketing segment during the third quarter of 2020 in connection with the transfer to MPC of the MPLX wholesale distribution business as described in Note 6. The transfer required goodwill impairment tests for the transferor and transferee reporting units. Our Refining & Marketing reporting unit that recorded the \$64 million impairment expense has no remaining goodwill.

The fair values of the reporting units for the first quarter of 2020 goodwill impairment analysis were determined based on applying both a discounted cash flow method, or income approach, as well as a market approach. The discounted cash flow fair value estimate is based on known or knowable information at the measurement date. The significant assumptions that were used to develop the estimates of the fair values under the discounted cash flow method included management's best estimates of the expected future results and discount rates, which range from 9.0 percent to 13.5 percent across all reporting units. Significant assumptions that were used to estimate the MPLX Eastern Gathering and Processing and MPLX Crude Gathering reporting units' fair values under the discounted cash flow method included management's best estimates of the discount rate, as well as estimates of future cash flows, which are impacted primarily by producer customer's development plans, which impact future volumes and capital requirements. Fair value determinations require considerable judgment and are sensitive to changes in underlying assumptions and factors. As a result, there can be no assurance that the estimates and assumptions made for purposes of the interim goodwill impairment test will prove to be an accurate prediction of the future. The fair value measurements for the individual reporting units' overall fair values represent Level 3 measurements.

Equity Method Investments

During the first quarter of 2020, we recorded equity method investment impairment charges totaling \$1.32 billion, of which \$1.25 billion related to MarkWest Utica EMG, L.L.C. and its investment in Ohio Gathering Company, L.L.C. The impairments were largely due to a reduction in forecasted volumes gathered and processed by the systems operated by the equity method investments. The fair value of the investments were determined based upon applying a discounted cash flow method, an income approach. The discounted cash flow fair value estimate is based on known or knowable information at the interim measurement date. The significant assumptions that were used to develop the estimate of the fair value under the discounted cash flow method include management's best estimates of the expected future cash flows, including prices and volumes, the weighted average cost of capital and the long-term growth rate. Fair value determinations require considerable judgment and are sensitive to changes in underlying assumptions and factors. As a result, there can be no assurance that the estimates and assumptions made for purposes of the impairment test will prove to be an accurate prediction of the future. The fair value of these equity method investments represents a Level 3 measurement.

Long-lived Assets

Long-lived assets (primarily consisting of property, plant and equipment, intangible assets other than goodwill, and right of use assets) used in operations are assessed for impairment whenever changes in facts and circumstances indicate that the carrying value of the assets may not be recoverable based on the expected undiscounted future cash flow of an asset group. For purposes of impairment evaluation, long-lived assets must be grouped at the lowest level for which independent cash flows can be identified, which generally is the refinery and associated distribution system level for Refining & Marketing segment assets and the plant level or pipeline system level for Midstream segment assets. If the sum of the undiscounted estimated pretax cash flows is less than the carrying value of an asset group, fair value is determined, and the carrying value is written down to the determined fair value.

During the first quarter of 2020, we identified long-lived asset impairment triggers relating to all of our refinery asset groups within the Refining & Marketing segment as a result of decreases to the Refining & Marketing segment expected future cash flows. The cash flows associated with these assets were significantly impacted by the effects of the COVID-19 pandemic and commodity price declines. We performed recoverability tests for each refinery asset group by comparing the undiscounted estimated pretax cash flows to the carrying value of each asset group. Only the Gallup refinery's carrying value exceeded its undiscounted estimated pretax cash flows. It was determined that the fair value of the Gallup refinery's property, plant and equipment was less than the carrying value. As a result, we recorded a charge of \$142 million in the first quarter of 2020 to impairment expense on the consolidated statements of income. The fair value measurements for the Gallup refinery assets represent Level 3 measurements.

During the second quarter of 2020, we identified long-lived asset impairment triggers relating to all of our refinery asset groups within the Refining & Marketing segment, except the Gallup refinery as it had been impaired to its estimated salvage value in the first quarter, as a result of continued unfavorable macroeconomic conditions impacting the Refining & Marketing segment expected future cash flows. We performed recoverability tests for each refinery asset group by comparing the undiscounted estimated pretax cash flows to the carrying value of each asset group. All of these refinery asset groups' undiscounted estimated pretax cash flows exceeded their carrying value by at least 17 percent.

The determination of undiscounted estimated pretax cash flows for the first and second quarter refinery asset group recoverability tests utilized significant assumptions including management's best estimates of the expected future cash flows, allocation of certain Refining & Marketing segment cash flows to the individual refinery asset groups, the estimated useful life of certain refinery asset groups, and the estimated salvage value of certain refinery asset groups.

On August 3, 2020, we announced our plans to evaluate possibilities to strategically reposition our Martinez refinery, including the potential conversion of the refinery into a renewable diesel facility. The facility is expected to ramp up to producing 730 million gallons per year by the end of 2023, with pretreatment capabilities coming online in 2023. As a result of the progression of these activities, we identified assets that would be repurposed and utilized in a renewable diesel facility configuration and assets that would be abandoned since they had no function in a renewable diesel facility configuration. This change in our intended use for the Martinez refinery is a long-lived asset impairment trigger for the assets that would be repurposed and remain as part of the Martinez asset group. We assessed the asset group for impairment by comparing the undiscounted estimated pretax cash flows to the carrying value of the asset group and the undiscounted estimated pretax cash flows exceeded the Martinez asset group carrying value. We recorded impairment expense of \$342 million for the abandoned assets as we are no longer using these assets and have no expectation to use these assets in the future. Additionally, as a result of our efforts to progress the conversion of Martinez refinery into a renewable diesel facility, MPLX cancelled in-process capital projects related to its Martinez refinery logistics operations resulting in impairments of \$27 million in the third quarter of 2020.

In the fourth quarter of 2020, we concluded the evaluation of our intended use of MPLX terminal assets near the Gallup refinery and determined that the assets were abandoned, resulting in an impairment charge of \$67 million. Following this conclusion, we revised the estimate of the salvage value for the Gallup refinery asset group resulting in an additional \$44 million impairment charge. These charges are included in impairment expense on our consolidated statements of income.

The determinations of expected future cash flows and the salvage values of refineries, as described earlier, require considerable judgment and are sensitive to changes in underlying assumptions and factors. As a result, there can be no assurance that the estimates and assumptions made for purposes of our impairment analysis will prove to be an accurate prediction of the future. Should our assumptions significantly change in future periods, it is possible we may determine the carrying values of certain of our refinery asset groups exceed the undiscounted estimated pretax cash flows of their refinery asset groups, which would result in future impairment charges.

During the first quarter of 2020, MPLX identified an impairment trigger relating to asset groups within MPLX's Western Gathering and Processing ("G&P") reporting unit as a result of significant changes to expected future cash flows for these asset groups resulting from the effects of the COVID-19 pandemic. The cash flows associated with these assets were significantly impacted by volume declines reflecting decreased forecasted producer customer production as a result of lower commodity prices. MPLX assessed each asset group within the Western G&P reporting unit for impairment. It was determined that the fair value of the East Texas G&P asset group's underlying assets were less than the carrying value. As a result, MPLX recorded impairment charges totaling \$350 million related to its property, plant and equipment and intangibles, which are included in impairment expense on our consolidated statements of income. Fair value of property, plant and equipment was determined using a combination of an income and cost approach. The income approach utilized significant assumptions including management's best estimates of the expected future cash flows and the estimated useful life of the asset group. The cost approach utilized assumptions for the current replacement costs of similar assets adjusted for estimated depreciation and deterioration of the existing equipment and economic obsolescence. The fair value of the intangibles was determined based on applying the multi-period excess earnings method, which is an income approach. Key assumptions included management's best estimates of the expected future cash flows from existing customers, customer attrition rates and the discount rate. Fair value determinations require considerable judgment and are sensitive to changes in underlying assumptions and factors. As a result, there can be no assurance that the estimates and assumptions made for purposes of the impairment analysis will prove to be an accurate prediction of the future. The fair value measurements for the asset group fair values represent Level 3 measurements.

8. Variable Interest Entities

Consolidated VIE

We control MPLX through our ownership of its general partner. MPLX is a VIE because the limited partners do not have substantive kick-out or participating rights over the general partner. We are the primary beneficiary of MPLX because in addition to our significant economic interest, we also have the ability, through our ownership of the general partner, to control the decisions that most significantly impact MPLX. We therefore consolidate MPLX and record a noncontrolling interest for the interest owned by the public. We also record a redeemable noncontrolling interest related to MPLX's Series A preferred units.

The creditors of MPLX do not have recourse to MPC's general credit through guarantees or other financial arrangements, except as noted. MPC has effectively guaranteed certain indebtedness of LOOP LLC ("LOOP") and LOCAP LLC ("LOCAP"), in which MPLX holds an interest. See Note 29 for more information. The assets of MPLX can only be used to settle its own obligations and its creditors have no recourse to our assets, except as noted earlier.

The following table presents balance sheet information for the assets and liabilities of MPLX, which are included in our consolidated balance sheets.

<i>(Millions of dollars)</i>	December 31, 2022	December 31, 2021
Assets		
Cash and cash equivalents	\$ 238	\$ 13
Receivables, less allowance for doubtful accounts	747	660
Inventories	148	142
Other current assets	56	55
Equity method investments	4,095	3,981
Property, plant and equipment, net	18,848	20,042
Goodwill	7,645	7,657
Right of use assets	283	268
Other noncurrent assets	1,664	891
Liabilities		
Accounts payable	\$ 664	\$ 671
Payroll and benefits payable	4	6
Accrued taxes	67	75
Debt due within one year	988	499
Operating lease liabilities	46	59
Other current liabilities	338	304
Long-term debt	18,808	18,072
Deferred income taxes	13	10
Long-term operating lease liabilities	230	205
Deferred credits and other liabilities	366	559

Non-Consolidated VIEs

Martinez Renewables LLC

On September 21, 2022, MPC closed on the formation of the Martinez Renewable Fuels joint venture (the “Martinez Renewable joint venture”) with Neste Corporation (“Neste”). We determined that, as of the closing date, Martinez Renewables LLC is a VIE because the entity does not have sufficient equity to complete the modification of the plant to produce renewable fuels without additional financial support from its owners. We are not the primary beneficiary of this VIE because we do not have the ability to control the activities that significantly influence the economic outcomes of the entity and, therefore, do not consolidate the entity.

Capline LLC

Capline LLC is unable to fund its operations without financial support from its equity owners and is a VIE. Our maximum exposure to loss as a result of our involvement with Capline LLC includes our equity method investment, any additional capital contribution commitments and any operating expenses incurred by Capline LLC in excess of compensation received for performance of the operating services. We are not the primary beneficiary of this VIE because we do not have the ability to control the activities that significantly influence the economic outcomes of the entity and, therefore, do not consolidate the entity.

Crowley Coastal Partners

We have determined that Crowley Coastal Partners LLC (“Crowley Coastal Partners”) is a VIE based on the terms of the existing financing arrangement for Crowley Blue Water Partners LLC (“Crowley Blue Water Partners”) and the associated debt guarantee by MPC and Crowley Maritime Corporation. Our maximum exposure to loss includes our equity method investment in Crowley Coastal Partners and the debt guarantees provided to each of the lenders to Crowley Blue Water Partners. We are not the primary beneficiary of this VIE because we do not have the ability to control the activities that significantly influence the economic outcomes of the entity and, therefore, do not consolidate the entity.

MPLX VIEs

For those entities that have been deemed to be VIEs, neither MPLX nor any of its subsidiaries have been deemed to be the primary beneficiary due to voting rights on significant matters. While we have the ability to exercise influence through participation in the management committees which make all significant decisions, we have equal influence over each committee as a joint interest partner and all significant decisions require the consent of the other investors without regard to economic

interest and as such we have determined that these entities should not be consolidated and apply the equity method of accounting with respect to our investments in each entity.

Sherwood Midstream LLC ("Sherwood Midstream") has been deemed the primary beneficiary of Sherwood Midstream Holdings LLC ("Sherwood Midstream Holdings") due to its controlling financial interest through its authority to manage the joint venture. As a result, Sherwood Midstream consolidates Sherwood Midstream Holdings.

MPLX's maximum exposure to loss as a result of its involvement with equity method investments includes its equity investment, any additional capital contribution commitments and any operating expenses incurred by the subsidiary operator in excess of its compensation received for the performance of the operating services.

We account for our ownership interest in each of these investments as an equity method investment. See Note 16 for ownership percentages and investment balances and Note 29 for our exposure to guarantees related to our non-consolidated VIEs.

9. Related Party Transactions

Transactions with related parties were as follows:

<i>(Millions of dollars)</i>	2022	2021	2020
Sales to related parties	\$ 144	\$ 93	\$ 123
Purchases from related parties	1,175	962	738

Sales to related parties, which are included in sales and other operating revenues, consist primarily of refined product sales and renewable feedstock sales to certain of our equity affiliates.

Purchases from related parties are included in cost of revenues. We obtain utilities, transportation services and purchase ethanol from certain of our equity affiliates.

10. Earnings Per Share

We compute basic earnings (loss) per share by dividing net income (loss) attributable to MPC less income allocated to participating securities by the weighted average number of shares of common stock outstanding. Since MPC grants certain incentive compensation awards to employees and non-employee directors that are considered to be participating securities, we have calculated our earnings (loss) per share using the two-class method. Diluted income (loss) per share assumes exercise of certain share-based compensation awards, provided the effect is not anti-dilutive.

<i>(In millions, except per share data)</i>	2022	2021	2020
Income (loss) from continuing operations, net of tax	\$ 15,978	\$ 2,553	\$ (11,182)
Less: Net income (loss) attributable to noncontrolling interest	1,534	1,263	(151)
Net income allocated to participating securities	8	2	1
Income (loss) from continuing operations available to common stockholders	14,436	1,288	(11,032)
Income from discontinued operations, net of tax	72	8,448	1,205
Income (loss) available to common stockholders	<u>\$ 14,508</u>	<u>\$ 9,736</u>	<u>\$ (9,827)</u>
Weighted average common shares outstanding:			
Basic	512	634	649
Effect of dilutive securities	4	4	—
Diluted	<u>516</u>	<u>638</u>	<u>649</u>

(In millions, except per share data)

Income (loss) available to common stockholders per share:

Basic:

	2022	2021	2020
Continuing operations	\$ 28.17	\$ 2.03	\$ (16.99)
Discontinued operations	0.14	13.31	1.86
Net income (loss) per share	<u>\$ 28.31</u>	<u>\$ 15.34</u>	<u>\$ (15.13)</u>

Diluted:

Continuing operations	\$ 27.98	\$ 2.02	\$ (16.99)
Discontinued operations	0.14	13.22	1.86
Net income (loss) per share	<u>\$ 28.12</u>	<u>\$ 15.24</u>	<u>\$ (15.13)</u>

The following table summarizes the shares that were anti-dilutive, and therefore, were excluded from the diluted share calculation.

(In millions)

	2022	2021	2020
Shares issuable under share-based compensation plans	—	3	11

11. Equity

We announced our board of directors approved a \$5.0 billion share repurchase authorization on February 2, 2022, which was exhausted during the fourth quarter of 2022, and an additional \$5.0 billion share repurchase authorization on August 2, 2022. These authorization have no expiration date.

We may utilize various methods to effect the repurchases, which could include open market repurchases, negotiated block transactions, tender offers, accelerated share repurchases or open market solicitations for shares, some of which may be effected through Rule 10b5-1 plans. The timing and amount of future repurchases, if any, will depend upon several factors, including market and business conditions, and such repurchases may be suspended or discontinued at any time.

Total share repurchases were as follows for the respective periods:

(In millions, except per share data)

	2022	2021	2020
Number of shares repurchased	131	76	—
Cash paid for shares repurchased	\$ 11,922	\$ 4,654	\$ —
Average cost per share	\$ 91.20	\$ 62.65	\$ —

As of December 31, 2022, MPC had \$3.33 billion remaining under its share repurchase authorizations, which reflects the repurchase of 830,000 common shares for \$96 million that settled in the first quarter of 2023.

12. Segment Information

We have two reportable segments: Refining & Marketing and Midstream. Each of these segments is organized and managed based upon the nature of the products and services it offers.

- Refining & Marketing – refines crude oil and other feedstocks, including renewable feedstocks, at our refineries in the Gulf Coast, Mid-Continent and West Coast regions of the United States, purchases refined products and ethanol for resale and distributes refined products, including renewable diesel, through transportation, storage, distribution and marketing services provided largely by our Midstream segment. We sell refined products to wholesale marketing customers domestically and internationally, to buyers on the spot market, to independent entrepreneurs who operate primarily Marathon® branded outlets and through long-term fuel supply contracts with direct dealers who operate locations mainly under the ARCO® brand.
- Midstream – transports, stores, distributes and markets crude oil and refined products principally for the Refining & Marketing segment via refining logistics assets, pipelines, terminals, towboats and barges; gathers, processes and transports natural gas; and gathers, transports, fractionates, stores and markets NGLs. The Midstream segment primarily reflects the results of MPLX.

During the first quarter of 2022, our chief operating decision maker (“CODM”) began to evaluate the performance of our segments using segment adjusted EBITDA. We have modified our presentation of segment performance to be consistent with this change, including prior periods presented for consistent and comparable presentation. Amounts included in income (loss) from continuing operations before income taxes and excluded from adjusted EBITDA include: (i) depreciation and amortization; (ii) net interest and other financial costs; (iii) turnaround expenses and (iv) other adjustments as deemed necessary. These items are either: (i) believed to be non-recurring in nature; (ii) not believed to be allocable or controlled by the segment; or (iii) not tied to the operational performance of the segment. Assets by segment are not a measure used to assess the performance of the company by the CODM and thus are not reported in our disclosures.

(Millions of dollars)

	2022	2021	2020
Segment adjusted EBITDA for reportable segments			
Refining & Marketing	19,261	\$ 3,518	\$ (1,939)
Midstream	5,772	5,410	5,061
Total reportable segments	<u>\$ 25,033</u>	<u>\$ 8,928</u>	<u>\$ 3,122</u>

Reconciliation of segment adjusted EBITDA for reportable segments to income (loss) from continuing operations before income taxes

Total reportable segments	\$ 25,033	\$ 8,928	\$ 3,122
Corporate	(698)	(587)	(635)
Refining planned turnaround costs	(1,122)	(582)	(832)
Storm impacts	—	(70)	—
LIFO inventory (charge) credit	148	—	(561)
Gain on sale of assets ^(a)	1,058	—	66
Renewable volume obligation requirements ^(b)	238	—	—
Litigation	27	—	84
Impairments ^(c)	—	(13)	(9,741)
Idling facility expenses	—	(12)	—
Restructuring expenses ^(d)	—	—	(367)
Transaction related costs ^(e)	—	—	(8)
Depreciation and amortization	(3,215)	(3,364)	(3,375)
Net interest and other financial costs	(1,000)	(1,483)	(1,365)
Income (loss) from continuing operations before income taxes	<u>\$ 20,469</u>	<u>\$ 2,817</u>	<u>\$ (13,612)</u>

^(a) 2022 includes the non-cash gain related to the contribution of assets by MPC on the formation of the Martinez Renewables joint venture and the non-cash gain on lease reclassification. See Note 16 and 28 for additional information.

^(b) Represents retroactive changes in renewable volume obligation requirements published by the EPA in June 2022 for the 2020 and 2021 annual obligations.

^(c) 2021 reflects impairments of equity method investments. 2020 reflects impairments of goodwill, equity method investments and long lived assets. See Note 7.

^(d) See Note 19.

^(e) 2020 includes costs incurred in connection with the Midstream strategic review and other related efforts. Costs incurred in connection with the Speedway separation are included in discontinued operations. See Note 5.

(Millions of dollars)

	2022	2021	2020
Sales and other operating revenues			
Refining & Marketing			
Revenues from external customers ^(a)	\$ 172,087	\$ 115,350	\$ 66,180
Intersegment revenues	118	144	67
Refining & Marketing segment revenues	172,205	115,494	66,247
Midstream			
Revenues from external customers ^(a)	5,366	4,633	3,599
Intersegment revenues	5,224	4,986	4,839
Midstream segment revenues	10,590	9,619	8,438
Total segment revenues	182,795	125,113	74,685
Less: intersegment revenues	5,342	5,130	4,906
Consolidated sales and other operating revenues	\$ 177,453	\$ 119,983	\$ 69,779

^(a) Includes Refining & Marketing intercompany sales to Speedway prior to May 14, 2021 and related party sales. See Notes 5 and 9 for additional information.

(Millions of dollars)

	2022	2021	2020
Income (loss) from equity method investments			
Refining & Marketing	\$ 31	\$ 59	\$ 2
Midstream	624	412	378
Corporate ^(a)	—	(13)	(1,315)
Consolidated income (loss) from equity method investments	\$ 655	\$ 458	\$ (935)

Depreciation and amortization

Refining & Marketing	\$ 1,850	\$ 1,870	\$ 1,857
Midstream	1,310	1,329	1,353
Corporate ^(b)	55	165	165
Consolidated depreciation and amortization	\$ 3,215	\$ 3,364	\$ 3,375

Capital expenditures

Refining & Marketing	\$ 1,508	\$ 911	\$ 1,170
Midstream	1,069	731	1,398
Segment capital expenditures and investments	2,577	1,642	2,568
Less investments in equity method investees	405	210	485
Plus:			
Corporate	108	105	80
Capitalized interest	103	68	106
Consolidated capital expenditures ^(c)	\$ 2,383	\$ 1,605	\$ 2,269

^(a) Impairment of equity method investment. See Note 7.

^(b) 2021 includes an impairment of \$56 million. See Note 7.

^(c) Includes changes in capital expenditure accruals. See Note 24 for a reconciliation of total capital expenditures to additions to property, plant and equipment as reported in the consolidated statements of cash flows.

Since we will continue to supply fuel to Speedway subsequent to the sale to 7-Eleven, we have reported intersegment sales to Speedway, that were previously eliminated in consolidation, as third-party sales. All periods presented have been retrospectively adjusted through the sale date of May 14, 2021 to reflect this change. Sales to Speedway/7-Eleven from the Refining & Marketing segment represented 10 percent, 11 percent and 11 percent of our total annual revenues for the years ended December 31, 2022, 2021 and 2020, respectively. See Note 23 for the disaggregation of our revenue by segment and product line.

We do not have significant operations in foreign countries. Therefore, revenues in foreign countries and long-lived assets located in foreign countries, including property, plant and equipment and investments, are not material to our operations.

13. Net Interest and Other Financial Costs

Net interest and other financial costs were as follows:

<i>(Millions of dollars)</i>	2022	2021	2020
Interest income	\$ (191)	\$ (14)	\$ (9)
Interest expense	1,299	1,340	1,462
Interest capitalized	(104)	(73)	(129)
Pension and other postretirement non-service costs ^(a)	3	64	11
(Gain) loss on extinguishment of debt	2	133	(9)
Investments - net premium (discount) amortization	(30)	(1)	—
Other financial costs	21	34	39
Net interest and other financial costs	<u>\$ 1,000</u>	<u>\$ 1,483</u>	<u>\$ 1,365</u>

^(a) See Note 26.

14. Income Taxes

The provision (benefit) for income taxes from continuing operations consisted of:

<i>(Millions of dollars)</i>	2022	2021	2020
Current:			
Federal	\$ 3,565	\$ 380	\$ (2,267)
State and local	629	48	69
Foreign	7	5	9
Total current	<u>4,201</u>	<u>433</u>	<u>(2,189)</u>
Deferred:			
Federal	191	(164)	90
State and local	98	(6)	(347)
Foreign	1	1	16
Total deferred	<u>290</u>	<u>(169)</u>	<u>(241)</u>
Income tax provision (benefit)	<u>\$ 4,491</u>	<u>\$ 264</u>	<u>\$ (2,430)</u>

Our effective tax rate for the year ended December 31, 2022 was higher than the tax computed at the U.S. statutory rate primarily due to state taxes, partially offset by permanent tax benefits related to net income attributable to noncontrolling interests.

Our effective tax rate for the year ended December 31, 2021 was lower than the tax computed at the U.S. statutory rate primarily due to permanent tax benefits related to net income attributable to noncontrolling interests and an increase in benefit related to the net operating loss ("NOL") carryback provided under the Coronavirus Aid, Relief, and Economic Security Act ("CARES Act"), partially offset by state taxes and local income taxes.

Our effective income tax benefit rate for the year ended December 31, 2020 was lower than the tax benefit computed at the U.S. statutory rate due to a significant amount of our pre-tax loss consisting of non-deductible goodwill impairment charges, partially offset by the tax rate differential resulting from the NOL carryback provided under the CARES Act. Additionally, our non-controlling interest in MPLX generally provides an effective tax rate benefit since the tax associated with these ownership interests is paid by those interests, but this benefit was lower for the year ended December 31, 2020 due to impairment charges recorded by MPLX.

A reconciliation of the federal statutory income tax rate to the effective tax rate applied to income (loss) from continuing operations before income taxes follows:

	2022	2021	2020
Federal statutory rate	21 %	21 %	21 %
State and local income taxes, net of federal income tax effects	3	2	2
Goodwill impairment	—	—	(8)
Noncontrolling interests	(2)	(9)	—
Legislation	—	(3)	4
Other	—	(2)	(1)
Effective tax rate applied to income (loss) from continuing operations before income taxes	<u>22 %</u>	<u>9 %</u>	<u>18 %</u>

On March 27, 2020, the CARES Act was enacted by Congress and signed into law by President Trump in response to the COVID-19 pandemic. The CARES Act contained a NOL carryback provision which allowed MPC to carryback our 2020 taxable loss to 2015 and later years. The five-year NOL carryback is available for all businesses producing taxable losses in 2018 through 2020. Based on the NOL carryback, as provided by the CARES Act, we realized a cumulative income tax benefit of \$2.30 billion. We received \$1.55 billion of the income tax benefit in cash during the fourth quarter of 2021, an additional \$690 million was realized as an offset to 2021 income tax liability payment obligations and we expect to receive the remaining \$59 million refund during 2023.

Deferred tax assets and liabilities resulted from the following:

<i>(Millions of dollars)</i>	December 31,	
	2022	2021
Deferred tax assets:		
Employee benefits	\$ 481	\$ 495
Environmental remediation	84	91
Finance lease obligations	371	339
Operating lease liabilities	224	263
Net operating loss carryforwards	44	122
Tax credit carryforwards	20	19
Goodwill and other intangibles	56	35
Other	44	58
Total deferred tax assets	<u>1,324</u>	<u>1,422</u>
Deferred tax liabilities:		
Property, plant and equipment	2,656	2,716
Inventories	686	717
Investments in subsidiaries and affiliates	3,660	3,350
Right of use assets	223	257
Other	2	18
Total deferred tax liabilities	<u>7,227</u>	<u>7,058</u>
Net deferred tax liabilities	<u>\$ 5,903</u>	<u>\$ 5,636</u>

Net deferred tax liabilities were classified in the consolidated balance sheets as follows:

<i>(Millions of dollars)</i>	December 31,	
	2022	2021
Assets:		
Other noncurrent assets	\$ 1	\$ 2
Liabilities:		
Deferred income taxes	5,904	5,638
Net deferred tax liabilities	<u>\$ 5,903</u>	<u>\$ 5,636</u>

At both December 31, 2022 and 2021, federal operating loss carryforwards were \$4 million, which includes a mix of indefinite carryforward ability and expiration periods ranging from 2032 through 2037. As of December 31, 2022 and 2021, state and local operating loss and tax credit carryforwards were \$40 million and \$128 million, respectively, which includes a mix of indefinite carryforward ability and expiration periods ranging from 2023 through 2040. As of December 31, 2022 and 2021, foreign operating loss carryforwards were \$20 million and \$9 million, respectively, which includes expiration periods ranging from 2029 through 2043.

As of December 31, 2022 and 2021, \$49 million and \$38 million of valuation allowances have been recorded related to income taxes, primarily related to realizability foreign tax operating losses and related deferred tax assets.

MPC is continuously undergoing examination of its U.S. federal income tax returns by the Internal Revenue Service ("IRS"). Since 2012, we have continued to participate in the Compliance Assurance Process ("CAP"). CAP is a real-time audit of the U.S. Federal income tax return that allows the IRS, working in conjunction with MPC, to determine tax return compliance with the U.S. Federal tax law prior to filing the return. This program provides us with greater certainty about our tax liability for years under examination by the IRS. During the fourth quarter of 2021, an IRS audit was initiated for MPLX and its subsidiaries for the tax year 2019 and continued during 2022. We do not believe the eventual outcome of such audit will have a material impact on our financial statements as of December 31, 2022.

Further, we are routinely involved in U.S. state income tax audits. We believe all other audits will be resolved with the amounts provided for these liabilities. As of December 31, 2022, we have various state and local income tax returns subject to examination for years 2006 through 2021, depending on jurisdiction.

The following table summarizes the activity in unrecognized tax benefits:

<i>(Millions of dollars)</i>	2022	2021	2020
January 1 balance	\$ 37	\$ 23	\$ 32
Additions for tax positions of current year	—	6	—
Additions for tax positions of prior years	38	19	12
Reductions for tax positions of prior years	(2)	(4)	(18)
Settlements	(15)	(6)	(3)
Statute of limitations	(1)	(1)	—
December 31 balance	<u>\$ 57</u>	<u>\$ 37</u>	<u>\$ 23</u>

If the unrecognized tax benefits as of December 31, 2022 were recognized, \$49 million would affect our effective income tax rate. There were \$29 million of uncertain tax positions as of December 31, 2022 for which it is reasonably possible that the amount of unrecognized tax benefits would significantly decrease during the next twelve months.

Interest and penalties related to income taxes are recorded as part of the provision for income taxes. Such interest and penalties were net expenses (benefits) of \$1 million, \$(2) million and \$(19) million in 2022, 2021 and 2020, respectively. As of December 31, 2022 and 2021, \$4 million and \$6 million of interest and penalties receivables (payables) were accrued related to income taxes, respectively.

15. Inventories

<i>(Millions of dollars)</i>	December 31,	
	2022	2021
Crude oil	\$ 3,047	\$ 2,639
Refined products	4,748	4,460
Materials and supplies	1,032	956
Total	<u>\$ 8,827</u>	<u>\$ 8,055</u>

The LIFO method accounted for 88 percent of total inventory value at both December 31, 2022 and 2021. Current acquisition costs were estimated to exceed the LIFO inventory value by \$3.72 billion as of December 31, 2022. There was \$2.84 billion excess of replacement or current cost over our stated LIFO cost at December 31, 2021.

The cost of inventories of crude oil and refined products is determined primarily under the LIFO method.

16. Equity Method Investments

Crowley Ocean Partners

Crowley Coastal Partners was formed in May 2016 to own both Crowley Ocean Partners LLC ("Crowley Ocean Partners") and Crowley Blue Waters Partners. MPC accounts for our 50 percent ownership in Crowley Coastal Partners as an equity method investment.

On December 1, 2022, MPC purchased all of Crowley Coastal Partner's interest in Crowley Ocean Partners and its four subsidiaries for approximately \$485 million, which included \$196 million to pay off the debt associated with the four tankers. As a result of the transaction, Crowley Ocean Partners is now included in our consolidated results. MPC will continue to account for its 50 percent interest in Crowley Coastal Partners as an equity method investment.

The excess of the \$144 million fair value over the \$125 million book value of our 50 percent indirect interest in Crowley Ocean Partners resulted in a \$19 million gain, which is included in the income (loss) from equity method investments line of the accompanying consolidated statements of income.

Martinez Renewables LLC

On September 21, 2022, MPC closed on the formation of the Martinez Renewable joint venture. MPC contributed property, plant and equipment, inventory, and working capital with an estimated fair value of \$1.47 billion and Neste contributed \$728 million in cash. MPC recorded a non-cash gain of \$549 million resulting from the difference between the carrying value and fair value of the contributed property, plant and equipment and inventory. Subsequent to the closing, the joint venture paid a special distribution to MPC of \$500 million, which is reflected as a return of capital in MPC's consolidated statements of cash flows. After the special distribution, MPC's investment value in the entity was approximately \$971 million. We apply the equity method of accounting with respect to our investment in the entity.

Watson Cogeneration Company

On June 1, 2022, MPC purchased the remaining 49 percent interest in Watson Cogeneration Company from NRG Energy, Inc. for approximately \$59 million. This entity is now consolidated and included in our consolidated results. It was previously accounted for as an equity method investment.

The excess of the \$62 million fair value over the \$25 million book value of our 51 percent ownership interest in Watson Cogeneration Company resulted in a \$37 million non-cash gain, which is included in the net gain on disposal of assets line of the accompanying consolidated statements of income.

		Ownership as of	Carrying value at	
		December 31,	December 31,	
<i>(In millions of dollars, except ownership percentages)</i>	VIE	2022	2022	2021
Refining & Marketing				
The Andersons Marathon Holdings LLC		50%	\$ 204	\$ 194
Martinez Renewables LLC	X	50%	1,070	—
Watson Cogeneration Company		—%	—	28
Other ^(a)	X		54	19
Refining & Marketing Total			\$ 1,328	\$ 241
Midstream				
<u>MPLX</u>				
Andeavor Logistics Rio Pipeline LLC	X	67%	\$ 177	\$ 183
Centrahoma Processing LLC		40%	131	133
Illinois Extension Pipeline Company, L.L.C.		35%	236	243
LOOP LLC		41%	287	265
MarEn Bakken Company LLC		25%	475	449
MarkWest EMG Jefferson Dry Gas Gathering Company, L.L.C.	X	67%	335	332
MarkWest Torñado GP, L.L.C.	X	60%	306	246
MarkWest Utica EMG, L.L.C.	X	57%	669	680
Minnesota Pipe Line Company, LLC		17%	178	183
Rendezvous Gas Services, L.L.C.	X	78%	137	147
Sherwood Midstream Holdings LLC	X	51%	125	136
Sherwood Midstream LLC	X	50%	512	544
Whistler Pipeline LLC	X	38%	211	155
Other ^(a)	X		316	285
MPLX Total			\$ 4,095	\$ 3,981
<u>MPC-Retained</u>				
Capline Pipeline Company LLC	X	33%	\$ 404	\$ 399
Crowley Coastal Partners, LLC	X	50%	55	185
Gray Oak Pipeline, LLC		25%	302	318
LOOP LLC		10%	71	66
South Texas Gateway Terminal LLC		25%	170	173
Other ^(a)	X		41	46
MPC-Retained Total			\$ 1,043	\$ 1,187
Midstream Total			\$ 5,138	\$ 5,168
Total			\$ 6,466	\$ 5,409

^(a) Some investments included within "Other" have been deemed to be VIEs.

Summarized financial information for all equity method investments in affiliated companies, combined, was as follows:

<i>(Millions of dollars)</i>	2022	2021	2020
Income statement data:			
Revenues and other income	\$ 5,069	\$ 4,343	\$ 3,013
Income from operations	1,907	1,389	599
Net income	1,740	1,230	454
Balance sheet data – December 31:			
Current assets	\$ 1,811	\$ 1,233	
Noncurrent assets	20,324	18,071	
Current liabilities	1,478	801	
Noncurrent liabilities	4,750	5,141	

As of December 31, 2022, the carrying value of our equity method investments was \$304 million higher than the underlying net assets of investees. This basis difference is being amortized into net income over the remaining estimated useful lives of the underlying net assets, except for \$208 million of excess related to goodwill and other non-depreciable assets.

Dividends and partnership distributions received from equity method investees (excluding distributions that represented a return of capital previously contributed) were \$772 million, \$652 million and \$577 million in 2022, 2021 and 2020, respectively.

See Note 7 for information regarding impairments of equity method investments.

17. Property, Plant and Equipment

	December 31, 2022			December 31, 2021		
<i>(Millions of dollars)</i>	Gross PP&E	Accumulated Depreciation	Net PP&E	Gross PP&E	Accumulated Depreciation	Net PP&E
Refining & Marketing	\$ 32,292	\$ 16,745	\$ 15,547	\$ 31,089	\$ 14,876	\$ 16,213
Midstream	27,659	8,118	19,541	28,098	7,384	20,714
Corporate	1,550	981	569	1,446	933	513
Total ^(a)	<u>\$ 61,501</u>	<u>\$ 25,844</u>	<u>\$ 35,657</u>	<u>\$ 60,633</u>	<u>\$ 23,193</u>	<u>\$ 37,440</u>

^(a) Includes finance leases. See Note 28.

Property, plant and equipment includes construction in progress of \$2.29 billion and \$2.27 billion at December 31, 2022 and 2021, respectively, which primarily relates to capital projects at our refineries and midstream facilities.

18. Goodwill and Intangibles

Goodwill

MPC annually evaluates goodwill for impairment as of November 30, as well as whenever events or changes in circumstances indicate it is more likely than not that the fair value of a reporting unit with goodwill is less than its carrying amount. There were no impairments of goodwill required based on our annual test of goodwill in 2022 and 2021.

At December 31, 2022, MPC had four reporting units with goodwill totaling approximately \$8.24 billion. For the annual impairment assessment as of November 30, 2022, management performed only a qualitative assessment for three reporting units as we determined it was more likely than not that the fair value of the reporting units exceeded the carrying value. A quantitative assessment was performed for the remaining reporting unit, which resulted in the fair value of the reporting unit exceeding its carrying value by greater than 10 percent.

The changes in the carrying amount of goodwill for 2022 were as follows:

<i>(Millions of dollars)</i>	Refining & Marketing	Midstream	Total
Balance as of December 31, 2020	\$ 561	\$ 7,695	\$ 8,256
Impairment losses	—	—	—
Balance as of December 31, 2021	561	7,695	8,256
Impairment losses	—	—	—
Disposal of assets	—	(12)	(12)
Balance as of December 31, 2022	<u>\$ 561</u>	<u>\$ 7,683</u>	<u>\$ 8,244</u>
Gross goodwill as of December 31, 2022	\$ 6,141	\$ 10,824	\$ 16,965
Accumulated impairment losses	(5,580)	(3,141)	(8,721)
Balance as of December 31, 2022	<u>\$ 561</u>	<u>\$ 7,683</u>	<u>\$ 8,244</u>

Intangible Assets

Our definite lived intangible assets as of December 31, 2022 and 2021 are as shown below.

<i>(Millions of dollars)</i>	December 31, 2022			December 31, 2021		
	Gross	Accumulated Amortization	Net	Gross	Accumulated Amortization	Net
Customer contracts and relationships	\$ 3,624	\$ 1,825	\$ 1,799	\$ 3,495	\$ 1,457	\$ 2,038
Brand rights and tradenames	100	64	36	100	50	50
Royalty agreements	138	103	35	135	96	39
Other	36	30	6	36	28	8
Total	<u>\$ 3,898</u>	<u>\$ 2,022</u>	<u>\$ 1,876</u>	<u>\$ 3,766</u>	<u>\$ 1,631</u>	<u>\$ 2,135</u>

At both December 31, 2022 and 2021, we had indefinite lived intangible assets of \$71 million, which are emission allowance credits.

Amortization expense for 2022 and 2021 was \$316 million and \$330 million, respectively. Estimated future amortization expense for the next five years related to the intangible assets at December 31, 2022 is as follows:

<i>(Millions of dollars)</i>	
2023	\$ 315
2024	257
2025	241
2026	221
2027	193

19. Restructuring

During the third quarter of 2020, we indefinitely idled our refinery located in Gallup, New Mexico and initiated actions to strategically reposition our Martinez, California refinery to a renewable diesel facility. We also approved an involuntary workforce reduction plan. In connection with these strategic actions, we recorded restructuring expenses of \$367 million in 2020.

The indefinite idling of the Gallup refinery and actions to strategically reposition the Martinez refinery to a renewable diesel facility resulted in \$195 million of restructuring expenses. Of the \$195 million of restructuring expenses, we expect \$130 million to settle in cash for costs related to decommissioning refinery processing units and storage tanks and fulfilling environmental remediation obligations. Additionally, we recorded a non-cash reserve against our materials and supplies inventory at these facilities of \$51 million.

The involuntary workforce reduction plan, together with employee reductions resulting from our actions affecting the Gallup and Martinez refineries, affected approximately 2,050 employees. We recorded \$172 million of restructuring expenses for separation benefits payable under our employee separation plan and certain collective bargaining agreements that we expect to settle in

cash. Certain of the affected MPC employees provided services to MPLX. MPLX has various employee services agreements and secondment agreements with MPC pursuant to which MPLX reimburses MPC for employee costs, along with the provision of operational and management services in support of MPLX's operations. Pursuant to such agreements, MPC was reimbursed by MPLX for \$37 million of the \$172 million of restructuring expenses recorded for these actions.

Restructuring expenses were accrued as restructuring reserves within accounts payable, payroll and benefits payable, other current liabilities and deferred credits and other liabilities within our consolidated balance sheets. We expect cash payments for the remaining exit and disposal costs reserve to occur through 2024.

<i>(Millions of dollars)</i>	Employee separation costs	Exit and disposal costs	Total
Restructuring reserve balance at September 30, 2020 ^(a)	\$ 158	\$ 133	\$ 291
Adjustments	14	5	19
Cash payments	(134)	(35)	(169)
Restructuring reserve balance at December 31, 2020	38	103	141
Cash payments	(38)	(44)	(82)
Restructuring reserve balance at December 31, 2021	—	59	59
Cash payments	—	(13)	(13)
Restructuring reserve balance at December 31, 2022	\$ —	\$ 46	\$ 46

^(a) The restructuring reserve was zero until the third quarter of 2020.

20. Fair Value Measurements

Fair Values – Recurring

The following tables present assets and liabilities accounted for at fair value on a recurring basis as of December 31, 2022 and 2021 by fair value hierarchy level. We have elected to offset the fair value amounts recognized for multiple derivative contracts executed with the same counterparty, including any related cash collateral as shown below; however, fair value amounts by hierarchy level are presented on a gross basis in the following tables.

December 31, 2022						
<i>(Millions of dollars)</i>	Fair Value Hierarchy			Netting and Collateral ^(a)	Net Carrying Value on Balance Sheet ^(b)	Collateral Pledged Not Offset
	Level 1	Level 2	Level 3			
Assets:						
Commodity contracts	\$ 310	\$ —	\$ —	\$ (243)	\$ 67	\$ 100
Liabilities:						
Commodity contracts	\$ 301	\$ —	\$ —	\$ (301)	\$ —	\$ —
Embedded derivatives in commodity contracts	—	—	61	—	61	—
December 31, 2021						
<i>(Millions of dollars)</i>	Fair Value Hierarchy			Netting and Collateral ^(a)	Net Carrying Value on Balance Sheet ^(b)	Collateral Pledged Not Offset
	Level 1	Level 2	Level 3			
Assets:						
Commodity contracts	\$ 270	\$ 1	\$ —	\$ (235)	\$ 36	\$ 34
Liabilities:						
Commodity contracts	\$ 248	\$ 1	\$ —	\$ (249)	\$ —	\$ —
Embedded derivatives in commodity contracts	—	—	108	—	108	—

^(a) Represents the impact of netting assets, liabilities and cash collateral when a legal right of offset exists. As of December 31, 2022, cash collateral of \$58 million was netted with mark-to-market liabilities. As of December 31, 2021, cash collateral of \$14 million was netted with mark-to-market derivative liabilities.

^(b) We have no derivative contracts which are subject to master netting arrangements reflected gross on the balance sheet.

Level 3 instruments relate to an embedded derivative liability for a natural gas purchase commitment embedded in a keep-whole processing agreement. The fair value calculation for these Level 3 instruments at December 31, 2022 used significant unobservable inputs including: (1) NGL prices interpolated and extrapolated due to inactive markets ranging from \$0.68 to \$1.62 per gallon with a weighted average of \$0.84 per gallon and (2) the probability of renewal of 100 percent for the five-year term of the natural gas purchase agreement and the related keep-whole processing agreement. Increases or decreases in the fractionation spread result in an increase or decrease in the fair value of the embedded derivative liability.

The following is a reconciliation of the beginning and ending balances recorded for net liabilities classified as Level 3 in the fair value hierarchy.

(Millions of dollars)

	2022	2021
Beginning balance	\$ 108	\$ 63
Unrealized and realized (gain)/loss included in net income	(35)	59
Settlements of derivative instruments	(12)	(14)
Ending balance	<u>\$ 61</u>	<u>\$ 108</u>

The amount of total (gain)/ loss for the period included in earnings attributable to the change in unrealized (gain)/loss relating to liabilities still held at the end of period:	\$ (33)	\$ 47
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See Note 21 for the income statement impacts of our derivative instruments.

Fair Values – Non-recurring

Non-recurring fair value measurements and disclosures relate primarily to sales-type leases discussed in Note 28 and the Martinez Renewables LLC equity method investment discussed in Note 16. The net investment in sales-type leases was recorded at the estimated fair value of the underlying leased assets at contract modification date. The leased assets were valued using a cost method valuation approach which utilizes Level 3 inputs. The fair value of the Martinez Renewables LLC equity method investment was primarily based on the cash consideration received from Neste for their 50 percent ownership.

Fair Values – Reported

We believe the carrying value of our other financial instruments, including cash and cash equivalents, receivables, accounts payable and certain accrued liabilities, approximate fair value. Our fair value assessment incorporates a variety of considerations, including the short-term duration of the instruments and the expected insignificance of bad debt expense, which includes an evaluation of counterparty credit risk. The borrowings under our revolving credit facilities, which include variable interest rates, approximate fair value. The fair value of our long-term debt is based on prices from recent trade activity and is categorized in Level 3 of the fair value hierarchy. The carrying and fair values of our debt were approximately \$26.3 billion and \$24.0 billion at December 31, 2022, respectively, and approximately \$25.1 billion and \$28.1 billion at December 31, 2021, respectively. These carrying and fair values of our debt exclude the unamortized issuance costs which are netted against our total debt.

21. Derivatives

For further information regarding the fair value measurement of derivative instruments, including any effect of master netting agreements or collateral, see Note 20. See Note 2 for a discussion of the types of derivatives we use and the reasons for them. We do not designate any of our commodity derivative instruments as hedges for accounting purposes.

The following table presents the fair value of derivative instruments as of December 31, 2022 and 2021 and the line items in the consolidated balance sheets in which the fair values are reflected. The fair value amounts below are presented on a gross basis and do not reflect the netting of asset and liability positions permitted under the terms of our master netting arrangements including cash collateral on deposit with, or received from, brokers. We offset the recognized fair value amounts for multiple derivative instruments executed with the same counterparty in our financial statements when a legal right of offset exists. As a result, the asset and liability amounts below will not agree with the amounts presented in our consolidated balance sheets.

(Millions of dollars)

Balance Sheet Location	December 31, 2022		December 31, 2021	
	Asset	Liability	Asset	Liability
Commodity derivatives				
Other current assets	\$ 310	\$ 301	\$ 271	\$ 249
Other current liabilities ^(a)	—	10	—	15
Deferred credits and other liabilities ^(a)	—	51	—	93

^(a) Includes embedded derivatives.

The table below summarizes open commodity derivative contracts for crude oil, refined products and blending products as of December 31, 2022.

<i>(Units in thousands of barrels)</i>	Percentage of contracts that expire next quarter	Position	
		Long	Short
Exchange-traded ^(a)			
Crude oil	65.1%	69,275	82,639
Refined products	76.6%	16,669	9,226
Blending products	98.8%	1,443	4,885
Soybean oil	53.5%	2,103	2,623

^(a) Included in exchange-traded are spread contracts in thousands of barrels: Crude oil - 29,651 long and 29,876 short; Refined products - 1,390 long and 25 short. There are no spread contracts for blending products or soybean oil.

The following table summarizes the effect of all commodity derivative instruments in our consolidated statements of income:

<i>(Millions of dollars)</i> Income Statement Location	Gain (Loss)		
	2022	2021	2020
Sales and other operating revenues	\$ —	\$ (47)	\$ 72
Cost of revenues	(58)	(333)	34
Other income	—	—	1
Total	<u>\$ (58)</u>	<u>\$ (380)</u>	<u>\$ 107</u>

22. Debt

Our outstanding borrowings at December 31, 2022 and 2021 consisted of the following:

<i>(Millions of dollars)</i>	December 31, 2022	December 31, 2021
Marathon Petroleum Corporation:		
Senior notes	\$ 6,449	\$ 6,449
Notes payable	1	1
Finance lease obligations	522	589
Total	<u>6,972</u>	<u>7,039</u>
MPLX LP:		
Bank revolving credit facility	—	300
Senior notes	20,100	18,600
Finance lease obligations	8	9
Total	<u>20,108</u>	<u>18,909</u>
Total debt	27,080	25,948
Unamortized debt issuance costs	(142)	(129)
Unamortized discount, net of unamortized premium	(238)	(280)
Amounts due within one year	(1,066)	(571)
Total long-term debt due after one year	<u>\$ 25,634</u>	<u>\$ 24,968</u>

Commercial Paper

On February 26, 2016, we established a commercial paper program that allows us to have a maximum of \$2.0 billion in commercial paper outstanding, with maturities up to 397 days from the date of issuance. We do not intend to have outstanding commercial paper borrowings in excess of available capacity under the MPC Credit Agreement.

MPC Senior Notes

	December 31,	
	2022	2021
<i>(Millions of dollars)</i>		
Senior notes, 3.625% due September 2024	750	750
Senior notes, 4.700% due May 2025	1,250	1,250
Senior notes, 5.125% due December 2026	719	719
Senior notes, 3.800% due April 2028	496	496
Senior notes, 6.500% due March 2041	1,250	1,250
Senior notes, 4.750% due September 2044	800	800
Senior notes, 5.850% due December 2045	250	250
Senior notes, 4.500% due April 2048	498	498
Andeavor senior notes, 3.800% - 5.125% due 2026 – 2048	36	36
Senior notes, 5.000%, due September 2054	400	400
Total	<u>\$ 6,449</u>	<u>\$ 6,449</u>

2021 Activity

On March 1, 2021, we repaid the \$1.0 billion outstanding aggregate principal amount of 5.125% senior notes due March 2021.

In June 2021, all of the \$300 million outstanding aggregate principal amount of 5.125% senior notes due April 2024, including the portion of such notes for which Andeavor was the obligor, were redeemed at a price equal to 100.854% of the principal amount, plus accrued and unpaid interest to, but not including, the redemption date.

On December 2, 2021, all of the \$1.25 billion outstanding aggregate principal amount 4.5% senior notes due May 2023 and the \$850 million outstanding aggregate principal amount of 4.75% senior notes due December 2023, including the portion of such notes for which Andeavor was the obligor, were redeemed at a price equal to par, plus a make-whole premium and accrued and unpaid interest to, but not including, the redemption date. The payment of \$132 million related to the note premium, offset by the immediate expense recognition of \$6 million of unamortized debt premium and issuance costs, resulted in a loss on extinguishment of debt of \$126 million.

Interest on each series of senior notes is payable semi-annually in arrears. The MPC senior notes are unsecured and unsubordinated obligations of MPC and rank equally with all of MPC's other existing and future unsecured and unsubordinated indebtedness. The MPC senior notes are non-recourse and structurally subordinated to the indebtedness of our subsidiaries, including the outstanding indebtedness of Andeavor and MPLX. The Andeavor senior notes are unsecured, unsubordinated obligations of Andeavor and are non-recourse to MPC and any of MPC's subsidiaries other than Andeavor.

MPLX Senior Notes

	December 31,	
	2022	2021
<i>(Millions of dollars)</i>		
Senior notes, 3.500% due December 2022	\$ —	\$ 486
Senior notes, 3.375% due March 2023	—	500
Senior notes, 4.500% due July 2023	989	989
Senior notes, 4.875% due December 2024	1,149	1,149
Senior notes, 4.000% due February 2025	500	500
Senior notes, 4.875% due June 2025	1,189	1,189
MarkWest senior notes, 4.500% - 4.875% due 2023 – 2025	23	23
Senior notes, 1.750% due March 2026	1,500	1,500
Senior notes, 4.125% due March 2027	1,250	1,250
Senior notes, 4.250% due December 2027	732	732
Senior notes, 4.000% due March 2028	1,250	1,250
Senior notes, 4.800% due February 2029	750	750
Senior notes, 2.650% due August 2030	1,500	1,500

<i>(Millions of dollars)</i>	December 31,	
	2022	2021
Senior notes, 4.950% due September 2032	1,000	—
Senior notes, 4.500% due April 2038	1,750	1,750
Senior notes, 5.200% due March 2047	1,000	1,000
Senior notes, 5.200% due December 2047	487	487
ANDX senior notes, 3.500% - 5.250% due 2022 – 2047	31	45
Senior notes, 4.700% due April 2048	1,500	1,500
Senior notes, 5.500% due February 2049	1,500	1,500
Senior notes, 4.950% due March 2052	1,500	—
Senior notes, 4.900% due April 2058	500	500
Total	<u>\$ 20,100</u>	<u>\$ 18,600</u>

2022 Activity

On March 14, 2022, MPLX issued \$1.5 billion aggregate principal amount of 4.950% senior notes due March 2052 in an underwritten public offering. The net proceeds were used to repay amounts outstanding under the MPC intercompany loan agreement and under the previous MPLX credit agreement.

On August 11, 2022, MPLX issued \$1.0 billion aggregate principal amount of 4.950% senior notes due September 2032 in an underwritten public offering. The net proceeds were used to redeem all of the \$500 million aggregate principal amount of 3.500% senior notes due December 2022, \$14 million of which was issued by Andeavor Logistics LP, and to redeem all of the \$500 million aggregate principal amount of 3.375% senior notes due March 2023.

2021 Activity

On January 15, 2021, MPLX redeemed all the \$750 million outstanding aggregate principal amount of 5.250% senior notes due January 2025, including the portion of such notes issued by ANDX, at a price equal to 102.625% of the principal amount, plus accrued and unpaid interest to, but not including, the redemption date.

On September 3, 2021, MPLX redeemed, at par value, all of the \$1.0 billion aggregate principal amount of floating rate senior notes due September 2022, plus accrued and unpaid interest to, but not including, the redemption date. MPLX primarily funded the redemption with borrowings under the MPC intercompany loan agreement.

Interest on each series of MPLX fixed rate senior notes is payable semi-annually in arrears. The MPLX senior notes are unsecured, unsubordinated obligations of MPLX and are non-recourse to MPC and its subsidiaries other than MPLX and MPLX GP LLC, as the general partner of MPLX.

Schedule of Maturities

Principal maturities of long-term debt, excluding finance lease obligations, as of December 31, 2022 for the next five years are as follows:

<i>(Millions of dollars)</i>	
2023	\$ 1,000
2024	1,901
2025	2,950
2026	2,249
2027	2,000

Available Capacity under our Facilities as of December 31, 2022

<i>(Millions of dollars)</i>	Total Capacity	Outstanding Borrowings	Outstanding Letters of Credit	Available Capacity	Weighted Average Interest Rate	Expiration
<u>MPC, excluding MPLX</u>						
MPC bank revolving credit facility	\$ 5,000	\$ —	\$ 1	\$ 4,999	—	July 2027
MPC trade receivables securitization facility ^(a)	100	—	100	—	—	September 2023

MPLX

MPLX bank revolving credit facility	2,000	—	—	2,000	—	July 2027
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^(a) The committed borrowing and letter of credit issuance capacity of the trade receivables securitization facility is \$100 million. In addition, the facility allows for the issuance of letters of credit in excess of the committed capacity at the discretion of the issuing banks. As of December 31, 2022, letters of credit in the total amount of \$1.05 billion were issued and outstanding under the facility to secure contracts awarded by the Department of Energy to purchase crude oil from the Strategic Petroleum Reserve.

MPC Bank Revolving Credit Facility

On July 7, 2022, MPC entered into a new five-year revolving credit agreement (the “MPC Credit Agreement”) to replace its previous \$5.0 billion credit facility that was scheduled to expire in October 2023. The MPC Credit Agreement, among other things, provides for a \$5.0 billion unsecured revolving credit facility that matures in July 2027 and letter of credit issuing capacity under the facility of up to \$2.2 billion. Letters of credit issuing capacity is included in, not in addition to, the \$5.0 billion borrowing capacity. The financial covenants of the MPC Credit Agreement are substantially the same as those contained in the previous credit agreement.

MPC has an option under the MPC Credit Agreement to increase the aggregate commitments by up to an additional \$1.0 billion, subject to, among other conditions, the consent of the lenders whose commitments would be increased. In addition, the maturity date may be extended, for up to two additional one year periods, subject to, among other conditions, the approval of lenders holding the majority of the commitments then outstanding, provided that the commitments of any non-consenting lenders will terminate on the then-effective maturity date. The MPC Credit Agreement includes sub-facilities for swing-line loans of up to \$250 million and letters of credit of up to \$2.2 billion (which may be increased to up to \$3.0 billion upon receipt of additional letter of credit issuing commitments).

Borrowings under the MPC Credit Agreement bear interest, at our election, at either the Adjusted Term SOFR or the Alternate Base Rate, both as defined in the MPC Credit Agreement, plus an applicable margin. We are charged various fees and expenses in connection with the agreement, including administrative agent fees, commitment fees on the unused portion of the commitments and fees with respect to issued and outstanding letters of credit. The applicable margins to the benchmark interest rates and the commitment fees payable under the MPC Credit Agreement fluctuate based on changes, if any, to our credit ratings.

The MPC Credit Agreement contains certain representations and warranties, affirmative and restrictive covenants and events of default that we consider to be usual and customary for arrangements of this type, including a financial covenant that requires us to maintain a ratio of Consolidated Net Debt to Total Capitalization, each as defined in the MPC Credit Agreement, of no greater than 0.65 to 1.00 as of the last day of each fiscal quarter. The covenants also restrict, among other things, our ability and/or the ability of certain of our subsidiaries to incur debt, create liens on assets or enter into transactions with affiliates. As of December 31, 2022, we were in compliance with the covenants contained in the MPC Credit Agreement.

Trade Receivables Securitization Facility

On September 30, 2021, we entered into a Loan and Security Agreement and related documentation with a group of lenders providing for a new trade receivables securitization facility having \$100 million of committed borrowing and letter of credit issuance capacity and up to an additional \$400 million of uncommitted borrowing and letter of credit issuance capacity that can be extended at the discretion of the lenders, provided that at no time may outstanding borrowings and letters of credit issued under the facility exceed the balance of eligible trade receivables (as calculated in accordance with the Loan and Security Agreement) that are pledged as collateral under the facility. In July 2022, the trade receivables securitization facility was amended to, among other things, extend its term until September 29, 2023.

The trade receivables facility consists of certain of our wholly owned subsidiaries (“Originators”) selling or contributing on an on-going basis all of the trade receivables generated by them (the “Pool Receivables”), together with all related security and interests in the proceeds thereof, without recourse, to another wholly owned, bankruptcy-remote special purpose subsidiary, MPC Trade Receivables Company I LLC (“TRC”), in exchange for a combination of cash, equity and/or borrowings under a subordinated note issued by TRC. TRC may request borrowings and extensions of credit under the Loan and Security Agreement for up to the lesser of the maximum capacity under the facility or the eligible trade receivables balance of the Pool Receivables. TRC and each of the Originators have granted a security interest in all of their rights, title and interests in and to the

Pool Receivables, together with all related security and interests in the proceeds thereof, to the lenders to secure the performance of TRC's and the Originators' payment and other obligations under the facility. In addition, MPC has issued a performance guaranty in favor of the lenders guaranteeing the performance by TRC and the Originators of their obligations under the facility.

To the extent that TRC retains an ownership interest in the Pool Receivables, such interest will be included in our consolidated financial statements solely as a result of the consolidation of the financial statements of TRC with those of MPC. The receivables sold or contributed to TRC are available first and foremost to satisfy claims of the creditors of TRC and are not available to satisfy the claims of creditors of MPC. TRC has granted a security interest in all of its assets to the lenders to secure its obligations under the Loan and Security Agreement.

TRC pays floating-rate interest charges and usage fees on amounts outstanding under the trade receivables facility, if any, unused fees on the portion of unused commitments and certain other fees related to the administration of the facility and letters of credit that are issued and outstanding under the trade receivables facility.

The Loan and Security Agreement and other documents comprising the facility contain representations and covenants that we consider usual and customary for arrangements of this type. Trade receivables are subject to customary criteria, limits and reserves before being deemed to be eligible receivables that count towards the borrowing base under the trade receivables facility. In addition, the lender's commitments to extend loans and credits under the facility are subject to termination, and TRC may be subject to default fees, upon the occurrence of certain events of default that are included in the Loan and Security Agreement and other facility documentation, all of which we consider to be usual and customary for arrangements of this type. As of December 31, 2022, we were in compliance with the covenants contained in the Loan and Security Agreement and other facility documentation.

MPLX Bank Revolving Credit Facility

On July 7, 2022, MPLX entered into a new five-year revolving credit agreement (the "MPLX Credit Agreement") to replace its previous \$3.5 billion credit facility that was scheduled to expire in July 2024. The MPLX Credit Agreement, among other things, provides for a \$2.0 billion unsecured revolving credit facility that matures in July 2027 and letter of credit issuing capacity under the facility of up to \$150 million. Letters of credit issuing capacity is included in, not in addition to, the \$2.0 billion borrowing capacity.

The borrowing capacity under the MPLX Credit Agreement may be increased by up to an additional \$1.0 billion, subject to certain conditions, including the consent of the lenders whose commitments would increase. In addition, the maturity date may be extended, for up to two additional one year periods, subject to, among other conditions, the approval of lenders holding the majority of the commitments then outstanding, provided that the commitments of any non-consenting lenders will terminate on the then-effective maturity date.

Borrowings under the MPLX Credit Agreement bear interest, at MPLX's election, at either the Adjusted Term SOFR or the Alternate Base Rate, both as defined in the MPLX Credit Agreement, plus an applicable margin. MPLX is charged various fees and expenses in connection with the agreement, including administrative agent fees, commitment fees on the unused portion of the commitments and fees with respect to issued and outstanding letters of credit. The applicable margins to the benchmark interest rates and the commitment fees payable under the MPLX Credit Agreement fluctuate based on changes, if any, to MPLX's credit ratings.

The MPLX Credit Agreement contains certain representations and warranties, affirmative and restrictive covenants and events of default that we consider to be usual and customary for an agreement of this type, including a financial covenant that requires MPLX to maintain a ratio of Consolidated Total Debt as of the end of each fiscal quarter to Consolidated EBITDA, both as defined in the MPLX Credit Agreement, for the prior four fiscal quarters of no greater than 5.0 to 1.0 (or 5.5 to 1.0 for up to two fiscal quarters following certain acquisitions). Consolidated EBITDA is subject to adjustments for certain acquisitions completed and capital projects undertaken during the relevant period. The covenants also restrict, among other things, MPLX's ability and/or the ability of certain of its subsidiaries to incur debt, create liens on assets and enter into transactions with affiliates. As of December 31, 2022, MPLX was in compliance with the covenants contained in the MPLX Credit Agreement.

23. Revenue

The following table presents our revenues from external customers disaggregated by segment and product line:

<i>(Millions of dollars)</i>	2022	2021	2020
Refining & Marketing			
Refined products	\$ 161,362	\$ 107,345	\$ 61,648
Crude oil	8,962	7,132	4,023
Services and other	1,763	873	509
Total revenues from external customers	172,087	115,350	66,180
Midstream			
Refined products	2,219	1,590	641
Services and other ^(a)	3,147	3,043	2,958
Total revenues from external customers	5,366	4,633	3,599
Sales and other operating revenues	\$ 177,453	\$ 119,983	\$ 69,779

^(a) Includes sales-type lease revenue. See Note 28.

We do not disclose information on the future performance obligations for any contract with expected duration of one year or less at inception. As of December 31, 2022, we do not have future performance obligations that are material to future periods.

Receivables

On the accompanying consolidated balance sheets, receivables, less allowance for doubtful accounts primarily consists of customer receivables. Significant, non-customer balances included in our receivables at December 31, 2022 include matching buy/sell receivables of \$6.25 billion.

24. Supplemental Cash Flow Information

<i>(Millions of dollars)</i>	2022	2021	2020
Net cash provided by operating activities included:			
Interest paid (net of amounts capitalized)	\$ 1,060	\$ 1,231	\$ 1,235
Net income taxes paid to (received from) taxing authorities	4,869	2,436	(179)
Cash paid for amounts included in the measurement of lease liabilities			
Payments on operating leases	498	569	651
Interest payments under finance lease obligations	24	21	25
Net cash provided by financing activities included:			
Principal payments under finance lease obligations	79	71	66
Non-cash investing and financing activities:			
Right of use assets obtained in exchange for new operating lease obligations	367	349	343
Right of use assets obtained in exchange for new finance lease obligations	60	37	110
Contribution of assets ^(a)	818	—	—
Book value of equity method investment ^(b)	150	—	—

^(a) Represents the book value of property, plant and equipment, inventory and working capital contributed by MPC to Martinez Renewables LLC. See Note 16 for additional information.

^(b) Represents the book value of MPC's equity method investment in Watson Cogeneration Company and Crowley Ocean Partners prior to MPC buying out the remaining interest in these entities. See Note 16 for additional information.

The consolidated statements of cash flows exclude changes to the consolidated balance sheets that did not affect cash. The following is a reconciliation of additions to property, plant and equipment to total capital expenditures:

(Millions of dollars)

	2022	2021	2020
Additions to property, plant and equipment per the consolidated statements of cash flows	\$ 2,420	\$ 1,464	\$ 2,787
Increase (decrease) in capital accruals	(37)	141	(518)
Total capital expenditures	<u>\$ 2,383</u>	<u>\$ 1,605</u>	<u>\$ 2,269</u>

25. Accumulated Other Comprehensive Income (Loss)

The following table shows the changes in accumulated other comprehensive income (loss) by component. Amounts in parentheses indicate debits.

(Millions of dollars)

	Pension Benefits	Other Benefits	Other	Total
Balance as of December 31, 2020	\$ (338)	\$ (181)	\$ 7	\$ (512)
Other comprehensive income (loss) before reclassifications, net of tax of \$127	171	220	(5)	386
Amounts reclassified from accumulated other comprehensive loss:				
Amortization of prior service cost (credit) ^(a)	(45)	2	—	(43)
Amortization of actuarial loss ^(a)	37	10	—	47
Settlement loss ^(a)	75	1	—	76
Other	—	—	(1)	(1)
Tax effect	(17)	(3)	—	(20)
Other comprehensive income (loss)	<u>221</u>	<u>230</u>	<u>(6)</u>	<u>445</u>
Balance as of December 31, 2021	<u>\$ (117)</u>	<u>\$ 49</u>	<u>\$ 1</u>	<u>\$ (67)</u>

(Millions of dollars)

	Pension Benefits	Other Benefits	Other	Total
Balance as of December 31, 2021	\$ (117)	\$ 49	\$ 1	\$ (67)
Other comprehensive income (loss) before reclassifications, net of tax of \$11	(70)	129	(1)	58
Amounts reclassified from accumulated other comprehensive loss:				
Amortization of prior service credit ^(a)	(45)	(22)	—	(67)
Amortization of actuarial loss ^(a)	4	6	—	10
Settlement loss ^(a)	79	—	—	79
Tax effect	(14)	3	—	(11)
Other comprehensive income (loss)	<u>(46)</u>	<u>116</u>	<u>(1)</u>	<u>69</u>
Balance as of December 31, 2022	<u>\$ (163)</u>	<u>\$ 165</u>	<u>\$ —</u>	<u>\$ 2</u>

^(a) These accumulated other comprehensive loss components are included in the computation of net periodic benefit cost. See Note 26.

26. Pension and Other Postretirement Benefits

We have noncontributory defined benefit pension plans covering substantially all employees. Benefits under these plans have been based primarily on age, years of service and final average pensionable earnings. The years of service component of these formulae was frozen as of December 31, 2009. Certain of the pensionable earnings components were frozen as of December 31, 2012. Benefits for service beginning January 1, 2010 and beginning on January 1, 2016 are based on a cash balance formula with an annual percentage of eligible pay credited based upon age and years of service or at a flat rate of eligible pay, depending on covered employee group. Substantially all of our employees also accrue benefits under a defined contribution plan.

(Millions of dollars)

	2022	2021	2020
Cash balance weighted average interest crediting rates	3.00 %	3.00 %	3.00 %

We also have other postretirement benefits covering most employees. Retiree health care benefits are provided through comprehensive hospital, surgical, major medical benefit, prescription drug and related health benefit provisions subject to various cost sharing features. Retiree life insurance benefits are provided to a closed group of retirees. Other postretirement benefits are not funded in advance.

In connection with the Andeavor acquisition, we assumed a number of additional qualified and nonqualified noncontributory benefit pension plans, covering substantially all former Andeavor employees. Benefits under these plans are determined based on final average compensation and years of service through December 31, 2010 and a cash balance formula for service beginning January 1, 2011. These plans were frozen as of December 31, 2018. Further, as of December 31, 2019, the qualified plans were merged with our existing qualified plans in which the actuarial assumptions were materially the same between the plans. We also assumed a number of additional postretirement benefits covering eligible employees. These benefits were merged with our existing benefits beginning January 1, 2019.

Obligations and Funded Status

The accumulated benefit obligation for all defined benefit pension plans was \$2,272 million and \$2,995 million as of December 31, 2022 and 2021.

The following summarizes the projected benefit obligations and funded status for our defined benefit pension and other postretirement plans:

<i>(Millions of dollars)</i>	Pension Benefits		Other Benefits	
	2022	2021	2022	2021
Benefit obligations at January 1	\$ 3,295	\$ 3,671	\$ 828	\$ 1,131
Service cost	228	297	26	34
Interest cost	102	93	21	30
Actuarial gain ^(a)	(653)	(169)	(168)	(16)
Benefits paid ^(b)	(613)	(594)	(57)	(75)
Plan amendments	—	—	—	(276)
Other	—	(3)	—	—
Benefit obligations at December 31	<u>2,359</u>	<u>3,295</u>	<u>650</u>	<u>828</u>
Fair value of plan assets at January 1	3,043	2,621	—	—
Actual return on plan assets	(622)	194	—	—
Employer contributions ^(c)	30	822	57	75
Benefits paid from plan assets	(613)	(594)	(57)	(75)
Fair value of plan assets at December 31	<u>1,838</u>	<u>3,043</u>	<u>—</u>	<u>—</u>
Funded status at December 31	<u>\$ (521)</u>	<u>\$ (252)</u>	<u>\$ (650)</u>	<u>\$ (828)</u>

^(a) The primary driver of the actuarial gain for the pension and other postretirement benefits plans in 2022 was the increase in discount rate compared to 2021.

^(b) Of the \$613 million in benefits paid in 2022, \$285 million is related to the pension annuity lift-out.

^(c) Of the \$822 million in pension employer contributions in 2021, \$763 million was voluntary contributions.

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

<i>(Millions of dollars)</i>	Pension Benefits		Other Benefits	
	2022	2021	2022	2021
Current liabilities	\$ (7)	\$ (11)	\$ (50)	\$ (54)
Noncurrent liabilities	(514)	(241)	(600)	(774)
Accrued benefit cost	<u>\$ (521)</u>	<u>\$ (252)</u>	<u>\$ (650)</u>	<u>\$ (828)</u>

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:

<i>(Millions of dollars)</i>	Pension Benefits		Other Benefits	
	2022	2021	2022	2021
Net actuarial loss	\$ 386	\$ 360	\$ 19	\$ 192
Prior service credit	(114)	(159)	(224)	(246)

Amounts exclude those related to LOOP and Explorer, equity method investees with defined benefit pension and postretirement plans for which net losses (gains) of \$11 million and \$(1) million were recorded in accumulated other comprehensive income (loss) in 2022, reflecting our ownership share.

Components of Net Periodic Benefit Cost and Other Comprehensive (Income) Loss

The following summarizes the net periodic benefit costs and the amounts recognized as other comprehensive loss (pretax) for our defined benefit pension and other postretirement plans.

<i>(Millions of dollars)</i>	Pension Benefits			Other Benefits		
	2022	2021	2020	2022	2021	2020
Service cost	\$ 230	\$ 287	\$ 283	\$ 26	\$ 34	\$ 35
Interest cost	102	93	98	21	30	32
Expected return on plan assets	(142)	(139)	(133)	—	—	—
Amortization of prior service cost (credit)	(45)	(45)	(45)	(22)	2	—
Amortization of actuarial loss	4	37	36	6	10	3
Settlement loss	79	75	20	—	1	—
Net periodic benefit cost ^(a)	\$ 228	\$ 308	\$ 259	\$ 31	\$ 77	\$ 70
Actuarial (gain) loss	\$ 109	\$ (227)	\$ 179	\$ (167)	\$ (16)	\$ 83
Prior service credit	—	—	—	—	(276)	—
Amortization of actuarial loss	(83)	(112)	(56)	(6)	(11)	(3)
Amortization of prior service (cost) credit	45	45	45	22	(2)	—
Total recognized in other comprehensive (income) loss	\$ 71	\$ (294)	\$ 168	\$ (151)	\$ (305)	\$ 80
Total recognized in net periodic benefit cost and other comprehensive (income) loss	\$ 299	\$ 14	\$ 427	\$ (120)	\$ (228)	\$ 150

^(a) Net periodic benefit cost reflects a calculated market-related value of plan assets which recognizes changes in fair value over three years.

For certain of our pension plans, lump sum payments to employees retiring in 2022, 2021 and 2020 exceeded the plan's total service and interest costs expected for those years. Settlement losses are required to be recorded when lump sum payments exceed total service and interest costs. As a result, pension settlement expenses were recorded in 2022, 2021 and 2020.

Plan Assumptions

The following summarizes the assumptions used to determine the benefit obligations at December 31, and net periodic benefit cost for the defined benefit pension and other postretirement plans for 2022, 2021 and 2020.

	Pension Benefits			Other Benefits		
	2022	2021	2020	2022	2021	2020
Benefit obligation:						
Discount rate	5.04 %	2.82 %	2.44 %	5.08 %	2.93 %	2.55 %
Rate of compensation increase	4.18 %	5.70 %	5.70 %	4.18 %	5.70 %	5.70 %
Net periodic benefit cost:						
Discount rate	3.33 %	2.70 %	3.00 %	2.93 %	2.55 %	3.23 %
Expected long-term return on plan assets	5.75 %	5.75 %	5.75 %	— %	— %	— %
Rate of compensation increase	4.18 %	5.70 %	5.70 %	4.18 %	5.70 %	5.70 %

Expected Long-term Return on Plan Assets

The overall expected long-term return on plan assets assumption is determined based on an asset rate-of-return modeling tool developed by a third-party investment group. The tool utilizes underlying assumptions based on actual returns by asset category and inflation and takes into account our asset allocation to derive an expected long-term rate of return on those assets. Capital market assumptions reflect the long-term capital market outlook. The assumptions for equity and fixed income investments are developed using a building-block approach, reflecting observable inflation information and interest rate information available in the fixed income markets. Long-term assumptions for other asset categories are based on historical results, current market characteristics and the professional judgment of our internal and external investment teams.

Assumed Health Care Cost Trend

The following summarizes the assumed health care cost trend rates.

	December 31,		
	2022	2021	2020
Health care cost trend rate assumed for the following year:			
Medical: Pre-65	6.60 %	5.80 %	6.00 %
Prescription drugs	8.90 %	6.40 %	7.00 %
Rate to which the cost trend rate is assumed to decline (the ultimate trend rate):			
Medical: Pre-65	4.50 %	4.50 %	4.50 %
Prescription drugs	4.50 %	4.50 %	4.50 %
Year that the rate reaches the ultimate trend rate:			
Medical: Pre-65	2031	2030	2028
Prescription drugs	2031	2030	2028

Increases in the post-65 medical plan premium for the Marathon Petroleum Health Plan and the Marathon Petroleum Retiree Health Plan have been permanently eliminated.

Plan Investment Policies and Strategies

The investment policies for our pension plan assets reflect the funded status of the plans and expectations regarding our future ability to make further contributions. Long-term investment goals are to: (1) manage the assets in accordance with the legal requirements of all applicable laws; (2) diversify plan investments across asset classes to achieve an optimal balance between risk and return and between income and growth of assets through capital appreciation; and (3) source benefit payments primarily through existing plan assets and anticipated future returns.

The investment goals are implemented to manage the plans' funded status volatility and minimize future cash contributions. The asset allocation strategy will change over time in response to changes primarily in funded status, which is dictated by current and anticipated market conditions, the independent actions of our investment committee, required cash flows to and from the plans and other factors deemed appropriate. Such changes in asset allocation are intended to allocate additional assets to the fixed income asset class should the funded status improve. The fixed income asset class shall be invested in such a manner that its

interest rate sensitivity correlates highly with that of the plans' liabilities. Other asset classes are intended to provide additional return with associated higher levels of risk. Investment performance and risk is measured and monitored on an ongoing basis through quarterly investment meetings and periodic asset and liability studies. At December 31, 2022, the primary plan's targeted asset allocation was 50 percent equity, private equity, real estate, and timber securities and 50 percent fixed income securities.

Fair Value Measurements

Plan assets are measured at fair value. The following provides a description of the valuation techniques employed for each major plan asset category at December 31, 2022 and 2021.

Cash and cash equivalents

Cash and cash equivalents include a collective fund serving as the investment vehicle for the cash reserves and cash held by third-party investment managers. The collective fund is valued at net asset value ("NAV") on a scheduled basis using a cost approach, and is considered a Level 2 asset. Cash and cash equivalents held by third-party investment managers are valued using a cost approach and are considered Level 2.

Equity

Equity investments includes common stock, mutual and pooled funds. Common stock investments are valued using a market approach, which are priced daily in active markets and are considered Level 1. Mutual and pooled equity funds are well diversified portfolios, representing a mix of strategies in domestic, international and emerging market strategies. Mutual funds are publicly registered, valued at NAV on a daily basis using a market approach and are considered Level 1 assets. Pooled funds are valued at NAV using a market approach and are considered Level 2.

Fixed Income

Fixed income investments include corporate bonds, U.S. dollar treasury bonds and municipal bonds. These securities are priced on observable inputs using a combination of market, income and cost approaches. These securities are considered Level 2 assets. Fixed income also includes a well diversified bond portfolio structured as a pooled fund. This fund is valued at NAV on a daily basis using a market approach and is considered Level 2. Other investments classified as Level 1 include mutual funds that are publicly registered, valued at NAV on a daily basis using a market approach.

Private Equity

Private equity investments include interests in limited partnerships which are valued using information provided by external managers for each individual investment held in the fund. These holdings are considered Level 3.

Real Estate

Real estate investments consist of interests in limited partnerships. These holdings are either appraised or valued using the investment manager's assessment of assets held. These holdings are considered Level 3.

Other

Other investments include two limited liability companies ("LLCs") with no public market. The LLCs were formed to acquire timberland in the northwest U.S. These holdings are either appraised or valued using the investment manager's assessment of assets held. These holdings are considered Level 3. Other investments classified as Level 1 include publicly traded depository receipts, while Level 2 include derivative transactions.

The following tables present the fair values of our defined benefit pension plans' assets, by level within the fair value hierarchy, as of December 31, 2022 and 2021.

<i>(Millions of dollars)</i>	December 31, 2022				December 31, 2021			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Cash and cash equivalents	\$ —	\$ 3	\$ —	\$ 3	\$ —	\$ 47	\$ —	\$ 47
Equity:								
Common stocks	40	—	—	40	61	—	—	61
Mutual funds	104	—	—	104	170	—	—	170
Pooled funds	—	742	—	742	—	1,192	—	1,192
Fixed income:								
Corporate	—	582	—	582	—	800	—	800
Government	211	41	—	252	415	108	—	523
Pooled funds	—	79	—	79	—	192	—	192
Private equity	—	—	13	13	—	—	19	19
Real estate	—	—	14	14	—	—	17	17
Other	—	5	4	9	1	3	18	22
Total investments, at fair value	<u>\$ 355</u>	<u>\$ 1,452</u>	<u>\$ 31</u>	<u>\$ 1,838</u>	<u>\$ 647</u>	<u>\$ 2,342</u>	<u>\$ 54</u>	<u>\$ 3,043</u>

The following is a reconciliation of the beginning and ending balances recorded for plan assets classified as Level 3 in the fair value hierarchy:

<i>(Millions of dollars)</i>	2022			2021		
	Private Equity	Real Estate	Other	Private Equity	Real Estate	Other
Beginning balance	\$ 19	\$ 17	\$ 18	\$ 23	\$ 20	\$ 19
Actual return on plan assets:						
Realized	3	2	—	2	1	—
Unrealized	(4)	(2)	7	8	1	—
Purchases	—	1	—	—	—	—
Sales	(5)	(4)	(21)	(14)	(5)	(1)
Ending balance	<u>\$ 13</u>	<u>\$ 14</u>	<u>\$ 4</u>	<u>\$ 19</u>	<u>\$ 17</u>	<u>\$ 18</u>

Cash Flows

Contributions to defined benefit plans

Our funding policy with respect to the funded pension plans is to contribute amounts necessary to satisfy minimum pension funding requirements, including requirements of the Pension Protection Act of 2006, plus such additional, discretionary, amounts from time to time as determined appropriate by management. In 2022, we made contributions totaling \$15 million to our funded pension plans. For 2023, we do not project any required funding, but we may make voluntary contributions to our funded pension plans at our discretion. Cash contributions to be paid from our general assets for the unfunded pension and postretirement plans are estimated to be approximately \$7 million and \$50 million, respectively, in 2023.

Estimated future benefit payments

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

<i>(Millions of dollars)</i>	Pension Benefits	Other Benefits
2023	\$ 148	\$ 50
2024	155	50
2025	165	50
2026	173	50
2027	175	50
2028 through 2032	1,010	258

Contributions to defined contribution plan

We also contribute to a defined contribution plan for eligible employees. Contributions to this plan totaled \$167 million, \$165 million and \$180 million in 2022, 2021 and 2020, respectively.

Multiemployer Pension Plan

We contribute to one multiemployer defined benefit pension plan under the terms of a collective-bargaining agreement that covers some of our union-represented employees. The risks of participating in this multiemployer plan are different from single-employer plans in the following aspects:

- Assets contributed to the multiemployer plan by one employer may be used to provide benefits to employees of other participating employers.
- If a participating employer stops contributing to the plan, the unfunded obligations of the plan may be borne by the remaining participating employers.
- If we choose to stop participating in the multiemployer plan, we may be required to pay that plan an amount based on the underfunded status of the plan, referred to as a withdrawal liability.

Our participation in this plan for 2022, 2021 and 2020 is outlined in the table below. The “EIN” column provides the Employee Identification Number for the plan. The most recent Pension Protection Act zone status available in 2022 and 2021 is for the plan’s year ended December 31, 2021 and December 31, 2020, respectively. The zone status is based on information that we received from the plan and is certified by the plan’s actuary. Among other factors, plans in the red zone are generally less than 65 percent funded. The “FIP/RP Status Pending/Implemented” column indicates a financial improvement plan or a rehabilitation plan has been implemented. The last column lists the expiration date of the collective-bargaining agreement to which the plan is subject. There have been no significant changes that affect the comparability of 2022, 2021 and 2020 contributions. Our portion of the contributions does not make up more than five percent of total contributions to the plan.

Pension Fund	EIN	Pension Protection Act Zone Status		FIP/RP Status Pending/Implemented	MPC Contributions (Millions of dollars)			Surcharge Imposed	Expiration Date of Collective – Bargaining Agreement
		2022	2021		2022	2021	2020		
Central States, Southeast and Southwest Areas Pension Plan ^(a)	366044243	Red	Red	Implemented	\$ 5	\$ 5	\$ 5	No	January 31, 2024

^(a) This agreement has a minimum contribution requirement of \$338 per week per employee for 2023. A total of 258 employees participated in the plan as of December 31, 2022.

Multiemployer Health and Welfare Plan

We contribute to one multiemployer health and welfare plan that covers both active employees and retirees. Through the health and welfare plan, employees receive medical, dental, vision, prescription and disability coverage. Our contributions to this plan totaled \$7 million, \$7 million and \$7 million for 2022, 2021 and 2020, respectively.

27. Share-Based Compensation

Description of the Incentive Plans

Our employees and non-employee directors are eligible to receive share, share-based and other types of awards under the Marathon Petroleum Corporation 2021 Incentive Compensation Plan (“MPC 2021 Plan”). The MPC 2021 Plan authorizes the Compensation and Organization Development Committee of our board of directors (“Committee”) to grant nonqualified or incentive stock options, stock appreciation rights, share and share-based awards (including restricted stock and restricted stock

unit awards), cash awards and performance awards to our employees and non-employee directors. The maximum number of shares of our common stock available for awards under the MPC 2021 Plan is 20.5 million shares. The MPC 2021 Plan became effective upon shareholder approval on April 28, 2021. Prior to that date, our employees and non-employee directors were eligible to receive share, share-based and other types of awards under the Amended and Restated Marathon Petroleum Corporation 2012 Incentive Compensation Plan ("MPC 2012 Plan"), effective April 26, 2012, and prior to that date, the Marathon Petroleum Corporation 2011 Second Amended and Restated Incentive Compensation Plan ("MPC 2011 Plan"). Shares issued as a result of awards granted under these plans are funded through the issuance of new MPC common shares.

Share-Based Awards under the Plans

We expense all share-based payments to employees and non-employee directors based on the grant date fair value of the awards over the requisite service period, adjusted for estimated forfeitures.

Stock Options

Prior to 2021, we granted stock options to certain officer and non-officer employees under the MPC 2011 Plan and the MPC 2012 Plan. Stock options represent the right to purchase shares of our common stock at an exercise price equal to the closing price of our common stock on the date of grant. Stock options generally vest over a service period of three years and expire ten years after the grant date. We used the Black Scholes option-pricing model to estimate the fair value of stock options granted, which requires the input of subjective assumptions.

Restricted Stock and Restricted Stock Units

We grant restricted stock units to certain employees and to our non-employee directors. Prior to 2021, we granted restricted stock to certain employees and to our non-employee directors. In general, restricted stock and restricted stock units granted to employees vest over a requisite service period of three years. Restricted stock awards and restricted stock unit awards granted to officers prior to 2022 are subject to an additional one year holding period after the three-year vesting period. Restricted stock recipients have the right to vote such stock; however, dividends are accrued and when vested are payable at the dates specified in the awards. The non-vested shares are not transferable and are held by our transfer agent. Restricted stock units granted to non-employee directors are considered to vest immediately at the time of the grant for accounting purposes, as they are non-forfeitable, but are not issued until the director's departure from the board of directors. Restricted stock unit recipients do not have the right to vote any shares of stock and accrue dividend equivalents which when vested are payable at the dates specified in the awards. The fair values of restricted stock and restricted stock units are equal to the market price of our common stock on the grant date.

Performance Units and Performance Share Units

We grant performance share unit awards to certain officer employees. At grant, a performance share unit has a target value equal to the MPC common stock average 30-day closing price prior to the grant date. The actual payout value of a performance share unit is based on company performance (which can range from 0% to 200%) during the three calendar year period beginning in the year of grant, multiplied by MPC's closing share price on the date the Committee certifies performance. Performance share units have a vesting service period beginning on the grant date and ending on the last day of the three-year performance period. Company performance for purposes of payout will be determined by the relative ranking of the total shareholder return ("TSR") of MPC common stock over the three-year performance period compared to the TSR of a select group of peer companies and the Standard & Poor's 500 Index and the Alerian MLP Index over the performance period, as well as the median of MPC's compensation reference group. These awards settle 100 percent in cash and are accounted for as liability awards and recorded at fair value with a mark-to-market adjustment made each quarter.

We also grant performance share unit awards to certain non-officer employees. These performance share unit awards operate as explained above for awards made to certain officer employees, but the awards vest in one-third increments on December 31 of the first, second and third calendar years of the three calendar year performance period.

No performance share unit awards were granted prior to 2021. Prior to 2021, we granted performance unit awards to certain officer employees under the MPC 2012 Plan. Performance units are dollar-denominated. The target value of all performance units is \$1.00, with actual payout up to \$2.00 per unit (up to 200 percent of target). Performance unit awards have a 36-month requisite service period. The payout value of these awards is determined by the relative ranking of the TSR of MPC common stock compared to the TSR of a select group of peer companies, as well as the Standard & Poor's 500 Energy Index fund over an average of four measurement periods. These awards are settled 25 percent in MPC common stock and 75 percent in cash. The number of shares actually distributed is determined as 25 percent of the final payout divided by the closing price of MPC common stock on the day the Committee certifies the final TSR rankings, or the next trading day if the certification is made outside of normal trading hours. The performance units paying out in cash are accounted for as liability awards and recorded at fair value with a mark-to-market adjustment made each quarter. The performance units that settle in shares are accounted for as share awards and do not receive dividend equivalents.

Total Share-Based Compensation Expense

The following table reflects activity related to our share-based compensation arrangements, including the converted awards related to the acquisition of Andeavor:

<i>(Millions of dollars)</i>	2022	2021	2020
Share-based compensation expense	\$ 153	\$ 88	\$ 100
Tax benefit recognized on share-based compensation expense	37	22	25
Cash received by MPC upon exercise of stock option awards	243	106	11
Tax benefit received for tax deductions for stock awards exercised	53	13	16

Stock Option Awards

The following is a summary of our common stock option activity in 2022:

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Terms <i>(in years)</i>	Aggregate Intrinsic Value <i>(Millions of dollars)</i>
Outstanding at December 31, 2021	7,795,036	\$ 46.23		
Exercised	(5,267,328)	46.16		
Forfeited or expired	(38,474)	20.87		
Outstanding at December 31, 2022	2,489,234	46.78		
Vested and expected to vest at December 31, 2022	2,488,962	46.78	4.1	\$ 173
Exercisable at December 31, 2022	2,000,853	51.77	3.3	129

The intrinsic value of options exercised by MPC employees during 2022, 2021 and 2020 was \$247 million, \$88 million and \$25 million, respectively.

As of December 31, 2022, unrecognized compensation cost related to stock option awards was \$1 million, which is expected to be recognized over a weighted average period of 0.2 years.

Restricted Stock and Restricted Stock Unit Awards

The following is a summary of restricted stock and restricted stock unit award activity of our common stock in 2022:

	Restricted Stock		Restricted Stock Units	
	Number of Shares	Weighted Average Grant Date Fair Value	Number of Units	Weighted Average Grant Date Fair Value
Unvested at December 31, 2021	194,629	\$ 60.95	2,313,919	\$ 35.84
Granted	—	—	653,378	75.81
Vested	(191,833)	60.98	(1,026,720)	34.24
Forfeited	(2,105)	60.92	(154,427)	47.64
Unvested at December 31, 2022	691	54.60	1,786,150	50.36

The following is a summary of the values related to restricted stock and restricted stock unit awards held by MPC employees and non-employee directors:

	Restricted Stock		Restricted Stock Units	
	Intrinsic Value of Awards Vested During the Period <i>(Millions of dollars)</i>	Weighted Average Grant Date Fair Value of Awards Granted During the Period	Intrinsic Value of Awards Vested During the Period <i>(Millions of dollars)</i>	Weighted Average Grant Date Fair Value of Awards Granted During the Period
2022	\$ 17	\$ —	\$ 99	\$ 75.81
2021	20	—	90	55.27
2020	18	56.49	59	22.82

As of December 31, 2022, unrecognized compensation cost related to restricted stock awards was less than \$1 million, which is expected to be recognized over a weighted average period of 0.1 years. Unrecognized compensation cost related to restricted stock unit awards was \$54 million, which is expected to be recognized over a weighted average period of 1.18 years.

Performance Unit Awards

The following table presents a summary of the 2022 activity for performance unit awards to be settled in shares:

	Number of Units	Weighted Average Grant Date Fair Value
Unvested at December 31, 2021	6,255,283	\$ 0.78
Vested	(6,221,223)	0.77
Forfeited	(34,060)	0.89
Unvested at December 31, 2022	<u>—</u>	<u>—</u>

The number of shares that would be issued upon target vesting, using the closing price of our common stock on December 31, 2022 would be 26,685 shares.

Performance units to be settled in MPC shares have a grant date fair value calculated using a Monte Carlo valuation model, which requires the input of subjective assumptions. The following table provides a summary of these assumptions:

	2020
Risk-free interest rate	0.9 %
Look-back period (in years)	2.8
Expected volatility	30.4 %
Grant date fair value of performance units granted	\$ 0.89

The risk-free interest rate for the remaining performance period as of the grant date is based on the U.S. Treasury yield curve in effect at the time of the grant. The look-back period reflects the remaining performance period at the grant date. The assumption for the expected volatility of our stock price reflects the average MPC common stock historical volatility.

MPLX Awards

Compensation expense for awards of MPLX units are not material to our consolidated financial statements for 2022.

28. Leases

Lessee

We lease a wide variety of facilities and equipment including land and building space, office and field equipment, storage facilities and transportation equipment. Our remaining lease terms range from less than one year to 96 years. Most long-term leases include renewal options ranging from less than one year to 49 years and, in certain leases, also include purchase options. The lease term included in the measurement of right of use assets and lease liabilities includes options to extend or terminate our leases that we are reasonably certain to exercise.

Under ASC 842, the components of lease cost are shown below. Lease costs for operating leases are recognized on a straight line basis and are reflected in the income statement based on the leased asset's use. Lease costs for finance leases are reflected in depreciation and amortization and in net interest and other financial costs.

<i>(Millions of dollars)</i>	2022	2021	2020
Finance lease cost:			
Amortization of right of use assets	\$ 81	\$ 78	\$ 72
Interest on lease liabilities	29	31	35
Operating lease cost	490	565	658
Variable lease cost	59	62	60
Short-term lease cost	772	446	649
Total lease cost	<u>\$ 1,431</u>	<u>\$ 1,182</u>	<u>\$ 1,474</u>

Supplemental consolidated balance sheet data related to leases were as follows:

<i>(Millions of dollars)</i>	December 31,	
	2022	2021
Operating leases		
Assets		
Right of use assets	\$ 1,214	\$ 1,372
Liabilities		
Operating lease liabilities	\$ 368	\$ 438
Long-term operating lease liabilities	841	927
Total operating lease liabilities	<u>\$ 1,209</u>	<u>\$ 1,365</u>
Weighted average remaining lease term (in years)	5.1	5.0
Weighted average discount rate	3.55 %	3.11 %
Finance leases		
Assets		
Property, plant and equipment, gross	\$ 818	\$ 815
Less accumulated depreciation	412	336
Property, plant and equipment, net	<u>\$ 406</u>	<u>\$ 479</u>
Liabilities		
Debt due within one year	\$ 79	\$ 73
Long-term debt	451	525
Total finance lease liabilities	<u>\$ 530</u>	<u>\$ 598</u>
Weighted average remaining lease term (in years)	9.9	10.3
Weighted average discount rate	5.09 %	5.04 %

As of December 31, 2022, maturities of lease liabilities for operating lease obligations and finance lease obligations having initial or remaining non-cancellable lease terms in excess of one year are as follows:

<i>(Millions of dollars)</i>	Operating	Finance
2023	\$ 403	\$ 104
2024	308	87
2025	228	78
2026	140	75
2027	72	59
2028 and thereafter	<u>172</u>	<u>268</u>
Gross lease payments	1,323	671
Less: imputed interest	114	141
Total lease liabilities	<u>\$ 1,209</u>	<u>\$ 530</u>

Lessor

MPLX is considered to be the lessor under several operating lease agreements in accordance with GAAP related to certain fee-based natural gas transportation and processing agreements in the Marcellus and Southern Appalachia region. The primary term of these agreements expire between 2026 and 2036, however, these contracts either have renewal options or will continue thereafter on a year-to-year basis until terminated by either party.

MPLX did not elect to use the practical expedient to combine lease and non-lease components for lessor arrangements. The tables below represent the portion of the contract allocated to the lease component based on relative standalone selling price. MPLX elected the practical expedient to carry forward historical classification conclusions until a modification of an existing agreement occurs. Once a modification occurs, the amended agreement is required to be assessed under ASC 842 to determine whether a reclassification of the lease is required.

During the third quarter of 2022, the approved expansion of a gathering and compression system triggered the first assessment of a third party agreement under ASC 842. As a result of the assessment during the period, the lease was reclassified from an operating lease to a sales-type lease. Accordingly, the underlying property, plant and equipment of \$745 million and associated deferred revenue of \$277 million were derecognized. The present value of the future lease payments of \$914 million and the unguaranteed residual value of \$63 million were recorded as the net investment in the lease within receivables and other noncurrent assets. This resulted in a gain of approximately \$509 million, which was recorded as a net gain on disposal of assets in the consolidated statements of income. This transaction was a non-cash transaction.

Lease revenues are included in sales and other operating revenues on the consolidated statements of income. Lease revenues were as follows:

<i>(Millions of dollars)</i>	2022	2021	2020
Operating leases:			
Rental income	\$ 327	\$ 376	\$ 398
Sales-type leases:			
Interest income (Sales-type rental revenue-fixed minimum)	46	—	—
Interest income (Revenue from variable lease payments)	16	—	—
Sales-type lease revenue	<u>\$ 62</u>	<u>\$ —</u>	<u>\$ —</u>

The following is a schedule of minimum future rentals on the non-cancelable operating leases as of December 31, 2022:

<i>(Millions of dollars)</i>	
2023	\$ 97
2024	95
2025	64
2026	37
2027	16
2028 and thereafter	21
Total minimum future rentals	<u>\$ 330</u>

Annual minimum undiscounted lease payment receipts under our sales-type leases were as follows as of December 31, 2022:

<i>(Millions of dollars)</i>	
2023	\$ 169
2024	156
2025	146
2026	137
2027	128
2028 and thereafter	970
Total minimum future rentals	1,706
Less: present value discount	765
Lease receivables ^(a)	<u>\$ 941</u>
Current lease receivables ^(b)	\$ 98
Long-term lease receivables ^(c)	843
Unguaranteed residual assets	66
Total sales-type lease assets	<u>\$ 1,007</u>

^(a) This amount does not include the unguaranteed residual assets.

^(b) Presented in receivables, net on the consolidated balance sheets.

^(c) Presented in other noncurrent assets on the consolidated balance sheets.

Capital expenditures related to assets subject to sales-type lease arrangements were \$27 million for the year ended December 31, 2022. These amounts are reflected as additions to property, plant and equipment in the consolidated statements of cash flows.

The following schedule summarizes our investment in assets held under operating lease by major classes as of December 31, 2022 and 2021:

<i>(Millions of dollars)</i>	December 31,	
	2022	2021
Gathering and transportation	\$ 94	\$ 991
Processing and fractionation	973	867
Terminals	128	128
Land, building and other	10	15
Property, plant and equipment	1,205	2,001
Less accumulated depreciation	330	523
Total property, plant and equipment, net	<u>\$ 875</u>	<u>\$ 1,478</u>

29. Commitments and Contingencies

We are the subject of, or a party to, a number of pending or threatened legal actions, contingencies and commitments involving a variety of matters, including laws and regulations relating to the environment. Some of these matters are discussed below. For matters for which we have not recorded a liability, we are unable to estimate a range of possible loss because the issues involved have not been fully developed through pleadings, discovery or court proceedings. However, the ultimate resolution of some of these contingencies could, individually or in the aggregate, be material.

Environmental Matters

We are subject to federal, state, local and foreign laws and regulations relating to the environment. These laws generally provide for control of pollutants released into the environment and require responsible parties to undertake remediation of hazardous waste disposal sites and certain other locations including presently or formerly owned or operated retail marketing sites. Penalties may be imposed for noncompliance.

At December 31, 2022 and 2021, accrued liabilities for remediation totaled \$387 million and \$401 million, respectively. It is not presently possible to estimate the ultimate amount of all remediation costs that might be incurred or the penalties, if any, that may be imposed. Receivables for recoverable costs from certain states, under programs to assist companies in clean-up efforts related to underground storage tanks at presently or formerly owned or operated retail marketing sites, were \$5 million and \$6 million at December 31, 2022 and 2021, respectively.

Governmental and other entities in various states have filed climate-related lawsuits against numerous energy companies, including MPC. The lawsuits allege damages as a result of climate change and the plaintiffs are seeking unspecified damages and abatement under various tort theories. We are currently subject to such proceedings in federal or state courts in California, Delaware, Maryland, Hawaii, Rhode Island and South Carolina. Similar lawsuits may be filed in other jurisdictions. At this early stage, the ultimate outcome of these matters remain uncertain, and neither the likelihood of an unfavorable outcome nor the ultimate liability, if any, can be determined.

We are involved in a number of environmental enforcement matters arising in the ordinary course of business. While the outcome and impact on us cannot be predicted with certainty, management believes the resolution of these environmental matters will not, individually or collectively, have a material adverse effect on our consolidated results of operations, financial position or cash flows.

Asset Retirement Obligations

Our short-term asset retirement obligations were \$27 million and \$14 million at December 31, 2022 and 2021, respectively, and are included in other current liabilities in our consolidated balance sheets. Our long-term asset retirement obligations were \$186 million and \$187 million at December 31, 2022 and 2021, respectively, which are included in deferred credits and other liabilities in our consolidated balance sheets.

Other Legal Proceedings

In July 2020, Tesoro High Plains Pipeline Company, LLC ("THPP"), a subsidiary of MPLX, received a Notification of Trespass Determination from the Bureau of Indian Affairs ("BIA") relating to a portion of the Tesoro High Plains Pipeline that crosses the Fort Berthold Reservation in North Dakota. The notification demanded the immediate cessation of pipeline operations and assessed trespass damages of approximately \$187 million. After subsequent appeal proceedings and in compliance with a new order issued by the BIA, in December 2020, THPP paid approximately \$4 million in assessed trespass damages and ceased use of the portion of the pipeline that crosses the property at issue. In March 2021, the BIA issued an order purporting to vacate the BIA's prior orders related to THPP's alleged trespass and direct the Regional Director of the BIA to reconsider the issue of THPP's alleged trespass and issue a new order. In April 2021, THPP filed a lawsuit in the District of North Dakota against the United States of America, the U.S. Department of the Interior and the BIA (together, the "U.S. Government Parties") challenging

the March 2021 order purporting to vacate all previous orders related to THPP's alleged trespass. On February 8, 2022, the U.S. Government Parties filed their answer and counterclaims to THPP's suit claiming THPP is in continued trespass with respect to the pipeline and seek disgorgement of pipeline profits from June 1, 2013 to present, removal of the pipeline and remediation. We intend to vigorously defend ourselves against these counterclaims.

We are also a party to a number of other lawsuits and other proceedings arising in the ordinary course of business. While the ultimate outcome and impact to us cannot be predicted with certainty, we believe that the resolution of these other lawsuits and proceedings will not, individually or collectively, have a material adverse effect on our consolidated financial position, results of operations or cash flows.

Guarantees

We have provided certain guarantees, direct and indirect, of the indebtedness of other companies. Under the terms of most of these guarantee arrangements, we would be required to perform should the guaranteed party fail to fulfill its obligations under the specified arrangements. In addition to these financial guarantees, we also have various performance guarantees related to specific agreements.

Guarantees related to indebtedness of equity method investees

LOOP and LOCAP

MPC and MPLX hold interests in an offshore oil port, LOOP, and MPLX holds an interest in a crude oil pipeline system, LOCAP. Both LOOP and LOCAP have secured various project financings with throughput and deficiency agreements. Under the agreements, MPC, as a shipper, is required to advance funds if the investees are unable to service their debt. Any such advances are considered prepayments of future transportation charges. The duration of the agreements varies but tend to follow the terms of the underlying debt, which extend through 2037. Our maximum potential undiscounted payments under these agreements for the debt principal totaled \$171 million as of December 31, 2022.

Dakota Access Pipeline

MPLX holds a 9.19 percent indirect interest in a joint venture ("Dakota Access") that owns and operates the Dakota Access Pipeline and Energy Transfer Crude Oil Pipeline projects, collectively referred to as the Bakken Pipeline system or DAPL. In 2020, the U.S. District Court for the District of Columbia (the "D.D.C.") ordered the U.S. Army Corps of Engineers ("Army Corps"), which granted permits and an easement for the Bakken Pipeline system, to prepare an environmental impact statement ("EIS") relating to an easement under Lake Oahe in North Dakota. The D.D.C. later vacated the easement. The Army Corps expects to release a draft EIS in 2023.

In May 2021, the D.D.C. denied a renewed request for an injunction to shut down the pipeline while the EIS is being prepared. In June 2021, the D.D.C. issued an order dismissing without prejudice the tribes' claims against the Dakota Access Pipeline. The litigation could be reopened or new litigation challenging the EIS, once completed, could be filed. The pipeline remains operational.

MPLX has entered into a Contingent Equity Contribution Agreement whereby it, along with the other joint venture owners in the Bakken Pipeline system, has agreed to make equity contributions to the joint venture upon certain events occurring to allow the entities that own and operate the Bakken Pipeline system to satisfy their senior note payment obligations. The senior notes were issued to repay amounts owed by the pipeline companies to fund the cost of construction of the Bakken Pipeline system. If the pipeline were temporarily shut down, MPLX would have to contribute its 9.19 percent pro rata share of funds required to pay interest accruing on the notes and any portion of the principal that matures while the pipeline is shutdown. MPLX also expects to contribute its 9.19 percent pro rata share of any costs to remediate any deficiencies to reinstate the permit and/or return the pipeline into operation. If the vacatur of the easement permit results in a permanent shutdown of the pipeline, MPLX would have to contribute its 9.19 percent pro rata share of the cost to redeem the bonds (including the 1% redemption premium required pursuant to the indenture governing the notes) and any accrued and unpaid interest. As of December 31, 2022, our maximum potential undiscounted payments under the Contingent Equity Contribution Agreement were approximately \$170 million.

Crowley Blue Water Partners

In connection with our 50 percent indirect interest in Crowley Blue Water Partners, we have agreed to provide a conditional guarantee of up to 50 percent of its outstanding debt balance in the event there is no charter agreement in place with an investment grade customer for the entity's three vessels as well as other financial support in certain circumstances. As of December 31, 2022, our maximum potential undiscounted payments under this arrangement was \$101 million.

Marathon Oil indemnifications

The separation and distribution agreement and other agreements with Marathon Oil to effect our spinoff provide for cross-indemnities between Marathon Oil and us. In general, Marathon Oil is required to indemnify us for any liabilities relating to Marathon Oil's historical oil and gas exploration and production operations, oil sands mining operations and integrated gas operations, and we are required to indemnify Marathon Oil for any liabilities relating to Marathon Oil's historical refining, marketing and transportation operations. The terms of these indemnifications are indefinite and the amounts are not capped.

Other guarantees

We have entered into other guarantees with maximum potential undiscounted payments totaling \$160 million as of December 31, 2022, which primarily consist of a commitment to contribute cash to an equity method investee for certain catastrophic events, in lieu of procuring insurance coverage, a commitment to fund a share of the bonds issued by a government entity for construction of public utilities in the event that other industrial users of the facility default on their utility payments, a commitment to pay a termination fee on a supply agreement if terminated during the initial term, and leases of assets containing general lease indemnities and guaranteed residual values.

General guarantees associated with dispositions

Over the years, we have sold various assets in the normal course of our business. Certain of the related agreements contain performance and general guarantees, including guarantees regarding inaccuracies in representations, warranties, covenants and agreements, and environmental and general indemnifications that require us to perform upon the occurrence of a triggering event or condition. These guarantees and indemnifications are part of the normal course of selling assets. We are typically not able to calculate the maximum potential amount of future payments that could be made under such contractual provisions because of the variability inherent in the guarantees and indemnities. Most often, the nature of the guarantees and indemnities is such that there is no appropriate method for quantifying the exposure because the underlying triggering event has little or no past experience upon which a reasonable prediction of the outcome can be based.

Contractual Commitments and Contingencies

At December 31, 2022, our contractual commitments to acquire property, plant and equipment totaled \$289 million. Our contractual commitments to acquire property, plant and equipment totaled \$565 million at December 31, 2021, primarily consisting of refining projects which includes the conversion of the Martinez refinery to a renewable diesel facility.

Certain natural gas processing and gathering arrangements require us to construct natural gas processing plants, natural gas gathering pipelines and NGL pipelines and contain certain fees and charges if specified construction milestones are not achieved for reasons other than force majeure. In certain cases, certain producer customers may have the right to cancel the processing arrangements if there are significant delays that are not due to force majeure.

30. Subsequent Events

Incremental \$5 Billion Share Repurchase Authorization

On January 31, 2023, we announced that our board of directors approved an incremental \$5.0 billion share repurchase authorization. The authorization has no expiration date. We may utilize various methods to effect the repurchases, which could include open market repurchases, negotiated block transactions, accelerated share repurchases, tender offers or open market solicitations for shares, some of which may be effected through Rule 10b5-1 plans. The timing of repurchases will depend upon several factors, including market and business conditions, and repurchases may be discontinued at any time.

MPLX Senior Notes

On February 9, 2023, MPLX issued \$1.6 billion aggregate principal amount of senior notes in a public offering, consisting of \$1.1 billion aggregate principal amount of 5.00% senior notes due March 2033 and \$500 million principal amount of 5.65% senior notes due March 2053.

On February 15, 2023, MPLX used \$600 million of the net proceeds to redeem all of the outstanding Series B preferred units. MPLX also provided notice to redeem all of MPLX's and MarkWest's \$1.0 billion 4.50% senior notes due July 2023.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None

Item 9A. Controls and Procedures

Disclosure Controls and Procedures

An evaluation of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934, as amended) was carried out under the supervision and with the participation of our management, including our chief executive officer and chief financial officer. Based upon that evaluation, the chief executive officer and chief financial officer concluded that the design and operation of these disclosure controls and procedures were effective as of December 31, 2022, the end of the period covered by this Annual Report on Form 10-K.

Changes in Internal Control over Financial Reporting

During the quarter ended December 31, 2022, there were no changes in our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None

Item 9C. Disclosures Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Information concerning our executive officers is included in Part I, Item 1 of this Annual Report on Form 10-K. Information concerning our directors is incorporated by reference to “Corporate Governance—Proposal 1. Election of Directors” in our Proxy Statement for the 2023 Annual Meeting of Shareholders, to be filed with the SEC within 120 days of December 31, 2022 (the “Proxy Statement”).

Our Code of Business Conduct, which applies to all of our directors, officers and employees, defines our expectations for ethical decision-making, accountability and responsibility. Our Code of Ethics for Senior Financial Officers, which is specifically applicable to our President and Chief Executive Officer, Executive Vice President and Chief Financial Officer, Senior Vice President and Controller, Vice President and Treasurer, and other leaders performing similar functions, affirms the principle that the honesty, integrity and sound judgment of our senior executives with responsibility for preparation and certification of our financial statements is essential to the proper functioning and success of our company. These codes are available on our website at www.marathonpetroleum.com/Investors/Corporate-Governance/. We would post on our website any amendments to, or waivers from, either of these codes requiring disclosure under applicable rules within four business days following any such amendment or waiver. Information contained on our website is not incorporated into this Annual Report on Form 10-K or other securities filings.

The other information required by this Item is incorporated by reference to “Corporate Governance—Board Leadership and Function—Board Committees” in our Proxy Statement.

Item 11. Executive Compensation

Information required by this Item is incorporated by reference to “Executive Compensation,” “Executive Compensation—Executive Compensation Tables” and “Corporate Governance—Director Compensation” in our Proxy Statement.

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

Information concerning security ownership of certain beneficial owners and management required by this Item is incorporated by reference to “Other Information—Stock Ownership Information” in our Proxy Statement.

Securities Authorized for Issuance Under Equity Compensation Plans

The following table provides information as of December 31, 2022 with respect to shares of our common stock that may be issued under the MPC 2021 Plan, the MPC 2012 Plan, the MPC 2011 Plan and the Andeavor Plans:

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights ^(a)	Weighted-average exercise price of outstanding options, warrants and rights ^(b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in the first column) ^(c)
Equity compensation plans approved by stockholders	4,563,076	\$ 46.78	19,816,073
Equity compensation plan not approved by stockholders	—	—	—
Total	4,563,076	N/A	19,816,073

^(a) Includes the following:

- 1) 2,489,234 stock options granted pursuant to the MPC 2012 Plan and not forfeited, cancelled or expired as of December 31, 2022.
- 2) 2,020,472 restricted stock units granted pursuant to the MPC 2021 Plan, the MPC 2012 Plan and the MPC 2011 Plan for shares unissued and not forfeited, cancelled or expired as of December 31, 2022. The amounts in column (a) do not include 404 restricted stock units granted under the Andeavor Plans and not forfeited, cancelled or expired as of December 31, 2022.
- 3) 53,370 shares as the maximum potential number of shares that could be issued in settlement of performance units outstanding as of December 31, 2022 pursuant to the MPC 2012 Plan, based on the closing price of our common stock on December 31, 2022 of \$116.39 per share. The number of shares reported for this award vehicle may overstate dilution. See Note 27 for more information on performance unit awards granted under the MPC 2012 Plan.

^(b) Restricted stock, restricted stock units and performance units are not taken into account in the weighted-average exercise price as such awards have no exercise price.

^(c) Reflects the shares available for issuance pursuant to the MPC 2021 Plan. All granting authority under the MPC 2012 Plan was revoked following the approval of the MPC 2021 Plan by shareholders on April 28, 2021, all granting authority under the MPC 2011 Plan was revoked following the approval of the MPC 2012 Plan by shareholders on April 25, 2012, and all granting power under the Andeavor Plans was revoked at the time of the Andeavor Merger. Shares related to (i) grants made pursuant to the MPC 2012 Plan that are forfeited, cancelled or expire unexercised become immediately available for issuance under the MPC 2021 Plan (ii) shares withheld for taxes related to vestings under the MPC 2012 Plan become immediately available for issuance under the MPC 2021 Plan.

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

Information required by this Item is incorporated by reference to “Other Information—Related Party Transactions” and “Corporate Governance—Board Composition and Director Selection—Director Independence” in our Proxy Statement.

Item 14. Principal Accountant Fees and Services

Information required by this Item is incorporated by reference to “Audit Matters—Auditor Fees and Services” in our Proxy Statement.

PART IV

Item 15. Exhibits and Financial Statement Schedules

A. Documents Filed as Part of the Report

1. Financial Statements (see Part II, Item 8. of this Annual Report on Form 10-K regarding financial statements)

2. Financial Statement Schedules

Financial statement schedules required under SEC rules but not included in this Annual Report on Form 10-K are omitted because they are not applicable or the required information is contained in the consolidated financial statements or notes thereto.

3. Exhibits:

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith	Furnished Herewith
		Form	Exhibit	Filing Date	SEC File No.		
2	Plan of Acquisition, Reorganization, Arrangement, Liquidation or Succession						
2.1 †	Separation and Distribution Agreement, dated as of May 25, 2011, among Marathon Oil Corporation, Marathon Oil Company and Marathon Petroleum Corporation	10	2.1	5/26/2011	001-35054		
2.2 †	Purchase and Sale Agreement, dated as of August 2, 2020, by and between MPC, the MPC subsidiaries party thereto and 7-Eleven, Inc.	8-K	2.1	8/3/2020	001-35054		
2.3	Amendment to Purchase and Sale Agreement, dated as of October 16, 2020, by and among MPC, the MPC subsidiaries party thereto and 7-Eleven, Inc.	10-K	2.7	2/26/2021	001-35054		
2.4 †	Amendment No. 2 to Purchase and Sale Agreement, dated as of May 14, 2021, by and among the Company, Sellers and Purchaser	8-K	2.3	5/14/2021	001-35054		
3	Articles of Incorporation and Bylaws						
3.1	Restated Certificate of Incorporation of Marathon Petroleum Corporation, dated April 29, 2022	8-K	3.2	5/2/2022	001-35054		
3.2	Amended and Restated Bylaws of Marathon Petroleum Corporation, dated October 27, 2021	10-Q	3.2	11/2/2021	001-35054		
3.3	Certificate of Amendment, dated April 29, 2022, to the Restated Certificate of Incorporation of Marathon Petroleum Corporation	8-K	3.1	5/2/2022	001-35054		
4	Instruments Defining the Rights of Security Holders, Including Indentures, and Description of Registrant's Securities						
Pursuant to Item 601(b)(4) of Regulation S-K, certain instruments with respect to long-term debt issues have been omitted where the amount of securities authorized under such instruments does not exceed 10 percent of the total consolidated assets of the Registrant. The Registrant hereby agrees to furnish a copy of any such instrument to the Securities and Exchange Commission upon its request.							
4.1	Indenture, dated as of February 1, 2011, between Marathon Petroleum Corporation and The Bank of New York Mellon Trust Company, N.A., as Trustee	10	4.1	3/29/2011	001-35054		
4.2	Indenture, dated February 12, 2015, between MPLX LP and The Bank of New York Mellon Trust Company, N.A., as Trustee	8-K	4.1	2/12/2015	001-35714		
4.3	Description of Securities					X	
10	Material Contracts						
10.1	Omnibus Agreement, dated as of October 31, 2012, among Marathon Petroleum Corporation, Marathon Petroleum Company LP, MPL Investment LLC, MPLX Operations LLC, MPLX Terminal and Storage LLC, MPLX Pipe Line Holdings LP, Marathon Pipe Line LLC, Ohio River Pipe Line LLC, MPLX LP and MPLX GP LLC	8-K	10.2	11/6/2012	001-35054		

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith	Furnished Herewith
		Form	Exhibit	Filing Date	SEC File No.		
10.2 *	Marathon Petroleum Corporation Second Amended and Restated 2011 Incentive Compensation Plan	S-3	4.3	12/7/2011	333-175286		
10.3 *	Marathon Petroleum Corporation Policy for Recoupment of Annual Cash Bonus Amounts	10-K	10.10	2/29/2012	001-35054		
10.4 *	Marathon Petroleum Amended and Restated Excess Benefit Plan	10-K	10.14	2/24/2017	001-35054		
10.5 *	Marathon Petroleum Amended and Restated Deferred Compensation Plan	10-K	10.13	2/29/2012	001-35054		
10.6 *	Marathon Petroleum Corporation Executive Tax, Estate, and Financial Planning Program	10-K	10.14	2/29/2012	001-35054		
10.7 *	Form of Marathon Petroleum Corporation 2011 Incentive Compensation Plan Supplemental Restricted Stock Unit Award Agreement – Non-Employee Director	10-K	10.22	2/29/2012	001-35054		
10.8 *	Marathon Petroleum Corporation Amended and Restated Executive Change in Control Severance Benefits Plan	10-K	10.21	2/28/2018	001-35054		
10.9 *	MPC Non-Employee Director Phantom Unit Award Policy	10-K	10.32	2/28/2013	001-35054		
10.10 *	First Amendment to the Marathon Petroleum Corporation Amended and Restated 2011 Incentive Compensation Plan	10-Q	10.1	8/3/2015	001-35054		
10.11 *	Form of Marathon Petroleum Corporation Nonqualified Stock Option Award Agreement - Officer	10-Q	10.3	5/2/2016	001-35054		
10.12 *	MPLX LP Executive Change in Control Severance Benefits Plan	10-Q	10.4	10/30/2017	001-35054		
10.13 *	MPLX LP 2018 Incentive Compensation Plan	8-K	10.1	3/5/2018	001-35714		
10.14 *	Marathon Petroleum Corporation Deferred Compensation Plan for Non-Employee Directors, as amended and restated January 1, 2019	10-K	10.75	2/28/2019	001-35054		
10.15 *	MPLX LP 2018 Incentive Compensation Plan MPC Non-Employee Director Phantom Unit Award Policy	10-K	10.86	2/28/2019	001-35054		
10.16 *	Amended and Restated Marathon Petroleum Corporation 2012 Incentive Compensation Plan	10-K	10.87	2/28/2019	001-35054		
10.17 *	First Amendment to the Amended and Restated Marathon Petroleum Corporation 2012 Incentive Compensation Plan	10-K	10.84	2/28/2020	001-35054		
10.18 *	Nonqualified Stock Option Award Agreement - Officer	10-Q	10.2	5/9/2019	001-35054		
10.19 *	Form of 2020 Officer RSU Award Agreement	10-Q	10.2	5/7/2020	001-35054		
10.20 *	Form of 2020 Officer Stock Option Award Agreement	10-Q	10.3	5/7/2020	001-35054		
10.21 *	Form of 2020 MPLX LP Phantom Unit Award Agreement - MPC Officer	10-Q	10.5	5/7/2020	001-35054		
10.22 *	Form of MPLX LP Performance Unit Award Agreement 2020-2022 Performance Cycle - MPC Officer	10-Q	10.6	5/7/2020	001-35054		
10.23 *	Aircraft Time Sharing Agreement, dated as of December 29, 2020, by and between Marathon Petroleum Company LP and Michael J. Hennigan	10-K	10.67	2/26/2021	001-35054		
10.24 *	Form of 2021 MPC Officer RSU Award Agreement	10-K	10.69	2/26/2021	001-35054		
10.25 *	Form of 2021 MPC Performance Share Unit Award Agreement 2021 - 2023 Performance Cycle	10-K	10.70	2/26/2021	001-35054		
10.26 *	Form of 2021 MPLX LP Phantom Unit Award Agreement - MPC Officer	10-K	10.71	2/26/2021	001-35054		
10.27 *	2021 Marathon Petroleum Annual Cash Bonus Program	10-K	10.72	2/26/2021	001-35054		
10.28 *	Marathon Petroleum Executive Deferred Compensation Plan, effective January 1, 2021	10-K	10.73	2/26/2021	001-35054		
10.29 *	Marathon Petroleum Executive Deferred Compensation Plan Adoption Agreement, effective January 1, 2021	10-K	10.74	2/26/2021	001-35054		

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith	Furnished Herewith
		Form	Exhibit	Filing Date	SEC File No.		
10.30 *	Form of 2021 MPC Restricted Stock Unit Award – Broad-Based Employees	10-K	10.75	2/26/2021	001-35054		
10.31 *	Form of 2021 MPC Performance Share Unit Award Agreement – 2021-2023 Performance Cycle – Broad-Based Employees	10-K	10.76	2/26/2021	001-35054		
10.32 *	Marathon Petroleum Corporation 2021 Incentive Compensation Plan	8-K	10.1	5/4/2021	001-35054		
10.33 *	Form of 2021 MPC Officer RSU Award Agreement - 2021 Plan	10-Q	10.1	11/2/2021	001-35054		
10.34 *	Form of 2022 MPC Officer Performance Unit Award Agreement – 2022-2024 Performance Cycle	10-K	10.64	2/24/2022	001-35054		
10.35 *	CEO Nonqualified Stock Option Award Agreement, as Amended	10-K	10.65	2/24/2022	001-35054		
10.36 *	CEO Restricted Stock Unit Award Agreement	10-K	10.66	2/24/2022	001-35054		
10.37 *	CEO Performance Unit Award Agreement – 2020-2022 Performance Cycle, as Amended	10-K	10.67	2/24/2022	001-35054		
10.38 *	CEO Restricted Stock Unit Award Agreement, as Amended	10-K	10.68	2/24/2022	001-35054		
10.39 *	2022 Marathon Petroleum Annual Cash Bonus Program	10-K	10.69	2/24/2022	001-35054		
10.40*	Form of 2022 MPC Officer RSU Award Agreement – 1-year Cliff Vesting	10-Q	10.1	5/3/2022	001-35054		
10.41*	Form of 2022 MPC Officer RSU Award Agreement – 2-year Cliff Vesting	10-Q	10.2	5/3/2022	001-35054		
10.42*	Form of 2022 MPC Officer RSU Award Agreement – 3-year Cliff Vesting	10-Q	10.3	5/3/2022	001-35054		
10.43*	Form of 2022 MPC Officer RSU Award Agreement – 2-year Pro Rata Vesting	10-Q	10.4	5/3/2022	001-35054		
10.44*	Form of 2022 MPC Officer RSU Award Agreement – 3-year Pro Rata Vesting	10-Q	10.5	5/3/2022	001-35054		
10.45	Revolving Credit Agreement, dated as of July 7, 2022, by and among Marathon Petroleum Corporation, as borrower, JPMorgan Chase Bank, N.A., as administrative agent, each of JPMorgan Chase Bank, N.A., Wells Fargo Securities, LLC, Barclays Bank PLC, BofA Securities, Inc., Citibank, N.A., Mizuho Bank, Ltd., MUFG Bank, Ltd., RBC Capital Markets, and TD Securities (USA) LLC, as joint lead arrangers and joint bookrunners, Wells Fargo Bank, National Association, as syndication agent, each of Bank of America, N.A., Barclays Bank PLC, Citibank, N.A., Mizuho Bank, Ltd., MUFG Bank, Ltd., Royal Bank of Canada and The Toronto-Dominion Bank, New York Branch, as documentation agents, and the other lenders and issuing banks that are parties thereto	8-K	10.1	7/12/2022	001-35054		
10.46	Revolving Credit Agreement, dated as of July 7, 2022, by and among MPLX LP, as borrower, Wells Fargo Bank, National Association, as administrative agent, each of Wells Fargo Securities, LLC, JPMorgan Chase Bank, N.A., Barclays Bank PLC, BofA Securities, Inc., Citibank, N.A., Mizuho Bank, Ltd., MUFG Bank, Ltd., RBC Capital Markets and TD Securities (USA) LLC, as joint lead arrangers and joint bookrunners, JPMorgan Chase Bank, N.A., as syndication agent, each of Bank of America, N.A., Barclays Bank PLC, Citibank, N.A., Mizuho Bank, Ltd., MUFG Bank, Ltd., Royal Bank of Canada and The Toronto-Dominion Bank, New York Branch, as documentation agents, and the other lenders and issuing banks that are parties thereto	8-K	10.2	7/12/2022	001-35054		
10.47*	2023 Marathon Petroleum Annual Cash Bonus Program					X	
10.48*	Form of 2023 MPC Officer Performance Share Unit Award Agreement – 2023-2025 Performance Period					X	

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith	Furnished Herewith
		Form	Exhibit	Filing Date	SEC File No.		
10.49*	Form of 2023 MPC Officer RSU Award Agreement - 2021 Plan					X	
10.50*	Amended and Restated Marathon Petroleum Thrift Plan					X	
10.51*	Marathon Petroleum Excess Benefit Plan Amendment					X	
10.52*	Form of 2023 MPLX Phantom Unit Award Agreement					X	
21.1	List of Subsidiaries					X	
23.1	Consent of Independent Registered Public Accounting Firm					X	
24.1	Power of Attorney of Directors and Officers of Marathon Petroleum Corporation					X	
31.1	Certification of Chief Executive Officer pursuant to Rule 13(a)-14 and 15(d)-14 under the Securities Exchange Act of 1934.					X	
31.2	Certification of Chief Financial Officer pursuant to Rule 13(a)-14 and 15(d)-14 under the Securities Exchange Act of 1934.					X	
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350.						X
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350.						X
101.INS	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded with the Inline XBRL document.					X	
101.SCH	Inline XBRL Taxonomy Extension Schema Document.					X	
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document.					X	
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document.					X	
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.					X	
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document.					X	
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).						

† The exhibits and schedules have been omitted pursuant to Item 601(b)(2) of Regulation S-K and will be provided to the Securities and Exchange Commission upon request.

* Indicates management contract or compensatory plan, contract or arrangement in which one or more directors or executive officers of the Registrant may be participants.

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.

February 23, 2023

MARATHON PETROLEUM CORPORATION

By: /s/ C. Kristopher Hagedorn

C. Kristopher Hagedorn
Senior Vice President and Controller

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on February 23, 2023 on behalf of the registrant and in the capacities indicated.

Signature	Title
_____ /s/ Michael J. Hennigan Michael J. Hennigan	Director, President and Chief Executive Officer (principal executive officer)
_____ /s/ Maryann T. Mannen Maryann T. Mannen	Executive Vice President and Chief Financial Officer (principal financial officer)
_____ /s/ C. Kristopher Hagedorn C. Kristopher Hagedorn	Senior Vice President and Controller (principal accounting officer)
_____ * Abdulaziz F. Alkhayyal	Director
_____ * Evan Bayh	Director
_____ * Charles E. Bunch	Director
_____ * Jonathan Z. Cohen	Director
_____ * Edward G. Galante	Director
_____ * Kim K.W. Rucker	Director
_____ * Frank M. Semple	Director
_____ * J. Michael Stice	Director
_____ * John P. Surma	Chairman of the Board
_____ * Susan Tomasky	Director

* The undersigned, by signing his name hereto, does sign and execute this report pursuant to the Power of Attorney executed by the above-named directors and officers of the registrant, which is being filed herewith on behalf of such directors and officers.

By: /s/ Michael J. Hennigan

February 23, 2023

Michael J. Hennigan
Attorney-in-Fact



Corporate Headquarters

539 South Main St. Findlay, OH 45840

Marathon Petroleum Corporation

Website: www.marathonpetroleum.com

Investor Relations Office

539 South Main St.
Findlay, OH 45840
ir@marathonpetroleum.com
Kristina Kazarian
Vice President,
Finance and Investor Relations
(419) 421-2071

Notice of Annual Meeting

The 2023 Annual Meeting of Shareholders will be held in a virtual-only format via live webcast on April 26, 2023.

Independent Accountants

PricewaterhouseCoopers LLP
406 Washington St., Suite 200
Toledo, OH 43604

Stock Exchange Listing

New York Stock Exchange

Common Stock Symbol: MPC

Principal Stock Transfer Agent

Computershare
P.O. Box 43078
Providence, RI 02940-3078

By overnight delivery:
150 Royall St., Suite 101
Canton, MA 02021

Internet Inquiries:
Investor Center website at
www-us.computershare.com/investor
Email: web.queries@computershare.com

Telephone Inquiries:
Toll Free: 866-820-7494
(U.S., Canada and Puerto Rico)
Toll: 781-575-2176
(other, non-U.S. jurisdictions)

Annual Report on Form 10-K

Additional copies of the Marathon Petroleum Corporation 2022 Annual Report may be obtained by contacting:
Corporate Communications
539 South Main St.
Findlay, OH 45840
(419) 421-3577

CORPORATE INFORMATION

Dividends on common stock, as may be declared by the Board of Directors, are typically paid mid-month in March, June, September and December.

Dividend Checks Not Received / Electronic Deposit If you do not receive your dividend check on the appropriate payment date, we suggest that you wait at least 10 days after the payment date to allow for any delay in mail delivery. After that time, advise Computershare by phone or in writing to issue a replacement check. You may contact Computershare to authorize electronic deposit of your dividends into your bank account.

Book-entry Form of Stock Ownership Marathon Petroleum Corporation exclusively maintains book-entry form of stockholder ownership. Account statements issued by stock transfer agent, Computershare, shall serve as stockholders' record of ownership. Questions regarding stock ownership should be directed to Computershare.

Taxpayer Identification Number Federal law requires that each stockholder provide a certified taxpayer identification number (TIN) for his/her stockholder account. For individual stockholders, your TIN is your Social Security number. If you do not provide a certified TIN, Computershare may be required to withhold 24% for federal income taxes from your dividends.

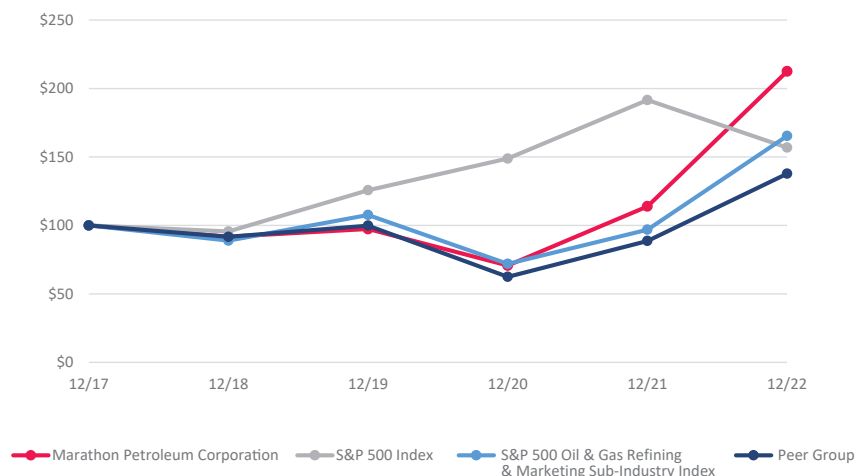
Address Change It is important that you notify Computershare immediately, by phone, in writing or by fax, when you change your address. Seasonal addresses can be entered for your account.

Stock Return Performance Graph The graph below matches the cumulative 5-Year total return of holders of Marathon Petroleum Corporation's common stock with the cumulative total returns of the S&P 500 index and the S&P 500 Oil & Gas Refining & Marketing sub-industry index, as well as a customized peer group of seven companies that includes: Bp plc, Chevron Corp, Exxon Mobil Corp, HF Sinclair Corp, PBF Energy Inc., Phillips 66, and Valero Energy Corp. This customized peer group, which was used in our annual report for the prior fiscal year, is being replaced by the sub-industry index because we believe the sub-industry index is more closely aligned with our line of business. The graph assumes that the value of the investment in our common stock, in each index, and in the peer group (including reinvestment of dividends) was \$100 on 12/31/2017 and tracks it through 12/31/2022.

The following performance graph is not "soliciting material" and will not be deemed to be filed with the Securities and Exchange Commission (SEC) or incorporated by reference into any of MPC's filings with the SEC, except to the extent that we specifically incorporate it by reference into any such filings.

COMPARISON OF 5-YEAR CUMULATIVE TOTAL RETURN*

Among Marathon Petroleum Corporation, the S&P 500 Index, the S&P 500 Oil & Gas Refining & Marketing Sub-Industry Index, and Peer Group



*\$100 invested on 12/31/17 in stock or index, including reinvestment of dividends.
Fiscal year ending December 31.



Marathon Petroleum Corporation

Disclosures Regarding Forward-Looking Statements

This summary annual report wrap includes forward-looking statements. You can identify our forward-looking statements by words such as “anticipate,” “believe,” “commitment,” “could,” “design,” “estimate,” “expect,” “forecast,” “goal,” “guidance,” “imply,” “intend,” “may,” “objective,” “opportunity,” “outlook,” “plan,” “policy,” “position,” “potential,” “predict,” “priority,” “project,” “proposition,” “prospective,” “pursue,” “seek,” “should,” “strategy,” “target,” “will,” “would,” or other similar expressions that convey the uncertainty of future events or outcomes. We have based our forward-looking statements on our current expectations, estimates and projections about our business and industry. We caution that these statements are not guarantees of future performance and you should not rely unduly on them, as they involve risks, uncertainties and assumptions that we cannot predict. In addition, we have based many of these forward-looking statements on assumptions about future events that may prove to be inaccurate. While our management considers these assumptions to be reasonable, they are inherently subject to significant business, economic, competitive, regulatory and other risks, contingencies and uncertainties, most of which are difficult to predict and many of which are beyond our control. Accordingly, our actual results may differ materially from the future performance that we have expressed or forecast in our forward-looking statements. In accordance with “safe harbor” provisions of the Private Securities Litigation Reform Act of 1995, we have included in our attached Form 10-K for the year ended Dec. 31, 2022, cautionary language identifying important factors, though not necessarily all such factors, that could cause actual results to differ materially from those set forth in the forward-looking statements.

