

FORM 10-K

2022

Mission & Values

Mission

To be a top-tier North American renewable fuels, petroleum refining and nitrogen-based fertilizer Company as measured by safe and reliable operations, superior financial performance and profitable growth.

Values

Our core Values define the way we do business every day to accomplish our Mission. The foundation of our Company is built on these core Values. We are responsible to apply our core Values in all the decisions we make and actions we take.



Safety

We always put safety first. The protection of our employees, contractors and communities is paramount. We have an unwavering commitment to safety above all else. If it's not safe, then we don't do it.



Environment

We care for our environment. Complying with all regulations and minimizing any environmental impact from our operations is essential. We understand our obligation to the environment and that it's our duty to protect it.



Integrity

We require high business ethics. We comply with the law and practice sound corporate governance. We only conduct business one way—the right way with integrity.



Corporate Citizenship

We are proud members of the communities where we operate. We are good neighbors and know that it's a privilege we can't take for granted. We seek to make a positive economic and social impact through our financial donations and the contributions of time, knowledge and talent of our employees to the places where we live and work.



Continuous Improvement

We believe in both individual and team success. We foster accountability under a performance-driven culture that supports creative thinking, teamwork, diversity and personal development so that employees can realize their maximum potential. We use defined work practices for consistency, efficiency and to create value across the organization.

At CVR, our people provide the energy behind our core Values to achieve excellence for all our key stakeholders—employees, communities, customers and shareholders.



DEAR STOCKHOLDERS

A MESSAGE FROM DAVE LAMP

CVR Energy, Inc., experienced record results in 2022 by remaining focused on our core Values of Safety, Environment, Integrity, Corporate Citizenship and Continuous Improvement.

Highlights for the year included safe, reliable operations as demonstrated by continued year-over-year improvements in environmental, health and safety metrics and led by a 63 percent reduction in our total recordable incident rate compared to 2021. We were pleased to start the renewable diesel unit (“RDU”) at our Wynnewood refinery in April, which significantly reduced our Renewable Identification Number exposure in 2022 while helping to lower our carbon footprint. We also made substantial progress on our Coffeyville facilities’ relocation project and continue to evaluate a potential RDU for the refinery.

In 2022, we launched our comprehensive plan to segregate our renewables business to align with our focus on decarbonization, which was completed on Feb. 1, 2023. We continue to feel that we are uniquely qualified for this strategy due to the synergistic relationships between refining and renewables and our proximity to the farm belt.

We continued to return value to stockholders for 2022, as demonstrated by the increase in our quarterly cash dividend to 50 cents for the fourth quarter, cumulative cash dividends declared of \$5.30 per share for 2022, inclusive of special dividends, and a total shareholder return of 115 percent for the year.

In addition, we were proud to publish our first public Environmental, Social & Governance (“ESG”) report for 2021 in 2022, now available on our websites, and look forward to publishing our 2022 ESG report later this year.

Looking ahead, we remain committed to our Mission of being a top-tier North American renewable fuels, petroleum refining and nitrogen-based fertilizer Company as measured by safe and reliable operations, superior financial performance and profitable growth.

On behalf of our Board of Directors and employees, thank you for your continued support and investment in our Company.

Sincerely,



Dave Lamp

President and Chief Executive Officer

April 2023

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: **001-33492**

CVR Energy, Inc.

(Exact name of registrant as specified in its charter)

Delaware

(State or Other Jurisdiction of
Incorporation or Organization)



61-1512186

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

2277 Plaza Drive, Suite 500, Sugar Land, Texas 77479

(Address of principal executive offices) (Zip Code)

281-207-3200

(Registrant's Telephone Number, including Area Code)

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

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

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

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

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

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

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

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

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>	Non-accelerated filer	<input type="checkbox"/>
Smaller reporting company	<input type="checkbox"/>	Emerging growth company	<input type="checkbox"/>		

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 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 Exchange Act). Yes ☐ No ☒

At June 30, 2022, the aggregate market value of the voting common stock held by non-affiliates of the registrant was approximately \$983 million based upon the closing price of its common stock on the New York Stock Exchange Composite tape. As of February 17, 2023, there were 100,530,599 shares of the registrant's common stock outstanding.

Documents Incorporated By Reference

Portions of the registrant's Proxy Statement to be filed pursuant to Regulation 14A pertaining to the 2023 Annual Meeting of Stockholders are incorporated by reference into Part III hereof. The Company intends to file such Proxy Statement no later than 120 days after the end of the fiscal year covered by this Form 10-K.

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Annual Report on Form 10-K

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GLOSSARY OF SELECTED TERMS

The following are definitions of certain terms used in this Annual Report on Form 10-K for the year ended December 31, 2022 (this “Report”).

2-1-1 crack spread — The approximate gross margin resulting from processing two barrels of crude oil to produce one barrel of gasoline and one barrel of distillate. The 2-1-1 crack spread is expressed in dollars per barrel and is a proxy for the per barrel margin that a sweet crude oil refinery would earn assuming it produced and sold the benchmark production of gasoline and distillate.

Ammonia — Ammonia is a direct application fertilizer and is primarily used as a building block for other nitrogen products for industrial applications and finished fertilizer products.

Biodiesel — A domestically produced, renewable fuel that can be manufactured from vegetable oils, animal fats, or recycled restaurant grease for use in diesel vehicles or any equipment that operates on diesel fuel and has physical properties similar to those of petroleum diesel.

Blendstocks — Various compounds that are combined with gasoline or diesel from the crude oil refining process to make finished gasoline and diesel fuel; these may include natural gas liquids, ethanol, or reformat, among others.

Bpd — Abbreviation for barrels per day.

Bulk sales — Volume sales through third-party pipelines, in contrast to tanker truck quantity rack sales.

Capacity — Capacity is defined as the throughput a process unit is capable of sustaining, either on a calendar or stream day basis. The throughput may be expressed in terms of maximum sustainable, nameplate or economic capacity. The maximum sustainable or nameplate capacities may not be the most economical. The economic capacity is the throughput that generally provides the greatest economic benefit based on considerations such as crude oil and other feedstock costs, product values, regulatory compliance costs and downstream unit constraints.

Catalyst — A substance that alters, accelerates, or instigates chemical changes, but is neither produced, consumed nor altered in the process.

Corn belt — The primary corn producing region of the United States, which includes Illinois, Indiana, Iowa, Minnesota, Missouri, Nebraska, Ohio and Wisconsin.

Condensate — A mixture of light liquid hydrocarbons, similar to a very light crude oil. It is typically separated out of a natural gas stream at the point of production when the temperature and pressure of the gas is dropped to atmospheric conditions.

Crack spread — A simplified calculation that measures the difference between the price for light products and crude oil.

Distillates — Primarily diesel fuel, kerosene and jet fuel.

Ethanol — A clear, colorless, flammable oxygenated hydrocarbon. Ethanol is typically produced chemically from ethylene, or biologically from fermentation of various sugars from carbohydrates found in agricultural crops and cellulosic residues from crops or wood. It is used in the United States as a gasoline octane enhancer and oxygenate.

Feedstocks — Petroleum products, such as crude oil or fluid catalytic cracking unit gasoline, that are processed and blended into refined products, such as gasoline, diesel fuel, and jet fuel during the refining process.

Group 3 — A geographic subset of the PADD II region comprising refineries in the midcontinent portion of the United States, specifically Oklahoma, Kansas, Missouri, Nebraska, Iowa, Minnesota, North Dakota, and South Dakota.

Light crude oil — A relatively expensive crude oil characterized by low relative density and viscosity. Light crude oils require lower levels of processing to produce high value products such as gasoline and diesel fuel.

Liquid volume yield — A calculation of the total liquid volumes produced divided by total throughput.

MMBtu — One million British thermal units, or Btu: a measure of energy. One Btu of heat is required to raise the temperature of one pound of water one degree Fahrenheit.

Petroleum coke (pet coke) — A coal-like substance that is produced during the refining process.

Product pricing at gate — Product pricing at gate represents net sales less freight revenue divided by product sales volume in tons. Product pricing at gate is also referred to as netback.

Rack sales — Sales which are made at terminals into third-party tanker trucks or railcars.

RBOB — Reformulated blendstocks for oxygenate blending.

Renewable diesel — An advanced biofuel that is made from the same renewable resources as biodiesel but using a process that involves heat, pressure and hydrogen to create a cleaner fuel that's chemically identical to petroleum diesel.

Refined products — Petroleum products, such as gasoline, diesel fuel, and jet fuel, that are produced by a refinery.

Sour crude oil — A crude oil that is relatively high in sulfur content, requiring additional processing to remove the sulfur. Sour crude oil is typically less expensive than sweet crude oil.

Southern Plains — Primarily includes Oklahoma, Texas and New Mexico.

Spot market — A market in which commodities are bought and sold for cash and delivered immediately.

Sweet crude oil — A crude oil that is relatively low in sulfur content, requiring less processing to remove the sulfur. Sweet crude oil is typically more expensive than sour crude oil.

Throughput — The quantity of crude oil and other feedstocks processed at a refinery measured in barrels per day.

Turnaround — A periodically performed standard procedure to inspect, refurbish, repair, and maintain the refinery or nitrogen fertilizer plant assets. This process involves the shutdown and inspection of major processing units and occurs every four to five years for the refineries and every two to three years for the nitrogen fertilizer facilities. A turnaround will typically extend the operating life of a facility and return performance to desired operating levels.

UAN — An aqueous solution of urea and ammonium nitrate used as a fertilizer.

ULSD — Ultra low sulfur diesel.

Utilization — Measurement of the annual production of UAN and ammonia expressed as a percentage of each facilities nameplate production capacity.

WCS — Western Canadian Select crude oil, a medium to heavy, sour crude oil, characterized by an American Petroleum Institute gravity ("API gravity") of between 20 and 22 degrees and a sulfur content of approximately 3.3 weight percent.

WTI — West Texas Intermediate crude oil, a light, sweet crude oil, characterized by an API gravity between 39 and 41 degrees and a sulfur content of approximately 0.4 weight percent that is used as a benchmark for other crude oils.

WTL — West Texas Light crude oil, a light, sweet crude oil, characterized by an API gravity between 44 and 50 degrees and a sulfur content of approximately 0.4 weight percent that is used as a benchmark for other crude oils with a slightly heavier grade than WTI.

Yield — The percentage of refined products that is produced from crude oil and other feedstocks.

Important Information Regarding Forward Looking Statements

This Annual Report on Form 10-K contains forward looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), including, but not limited to, those under Item 1. Business, Item 1A. Risk Factors, and Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations. These forward looking statements are subject to a number of risks and uncertainties, many of which are beyond our control. All statements other than statements of historical fact, including without limitation, statements regarding future operations, financial position, estimated revenues and losses, growth, capital projects, stock or unit repurchases, impacts of legal proceedings, projected costs, prospects, plans, and objectives of management are forward looking statements. The words “could,” “believe,” “anticipate,” “intend,” “estimate,” “expect,” “may,” “continue,” “predict,” “potential,” “project,” and similar terms and phrases are intended to identify forward looking statements.

Although we believe our assumptions concerning future events are reasonable, a number of risks, uncertainties, and other factors could cause actual results and trends to differ materially from those projected or forward looking. Forward looking statements, as well as certain risks, contingencies or uncertainties that may impact our forward looking statements, include but are not limited to the following:

- volatile margins in the refining industry and exposure to the risks associated with volatile crude oil, refined product and feedstock prices;
- the availability of adequate cash and other sources of liquidity for the capital needs of our businesses;
- the severity, magnitude, duration, and impact of the novel coronavirus 2019 and any variant thereof (collectively, “COVID-19”) pandemic, or any future pandemic or breakout of infectious disease, and of businesses’ and governments’ responses to such pandemic on our operations, personnel, commercial activity, and supply and demand across our and our customers’ and suppliers’ business;
- the effects arising out of the Russia-Ukraine conflict, including with respect to impacts to commodity prices and other markets;
- changes in market conditions and market volatility, including crude oil and other commodity prices, demand for those commodities, storage and transportation capacities, and the impact of such changes on our operating results and financial position;
- the ability to forecast our future financial condition, results of operations, revenues and expenses;
- the effects of transactions involving forward or derivative instruments;
- changes in laws, regulations and policies with respect to the export of crude oil, refined products, other hydrocarbons or renewable feedstocks or products including, without limitation, the actions of the Biden Administration that impact oil and gas operations in the United States;
- interruption in pipelines supplying feedstocks or distributing the petroleum business’ products;
- competition in the petroleum and nitrogen fertilizer businesses, including potential impacts of domestic and global supply and demand and/or domestic or international duties, tariffs, or similar costs;
- capital expenditures;
- changes in our or our segments’ credit profiles;
- the cyclical and seasonal nature of the petroleum and nitrogen fertilizer businesses;
- the supply, availability and price levels of essential raw materials and feedstocks;
- our production levels, including the risk of a material decline in those levels;
- accidents or other unscheduled shutdowns or interruptions affecting our facilities, machinery, or equipment, or those of our suppliers or customers;
- existing and future laws, regulations or rulings, including but not limited to those relating to the environment, climate change, renewables, safety, security and/or the transportation of production of hazardous chemicals like ammonia, including potential liabilities or capital requirements arising from such laws, regulations or rulings;
- potential operating hazards from accidents, fire, severe weather, tornadoes, floods, or other natural disasters;
- the impact of weather on commodity supply and/or pricing and on the nitrogen fertilizer business including our ability to produce, market or sell fertilizer products profitability or at all;
- rulings, judgments or settlements in litigation, tax or other legal or regulatory matters;
- the dependence of the nitrogen fertilizer business on customers and distributors including to transport goods and equipment;
- the reliance on, or the ability to procure economically or at all, pet coke our nitrogen fertilizer business purchases from Coffeyville Resources Refining & Marketing, LLC (“CRRM”), a subsidiary of CVR Refining, LP, and third-party suppliers or the natural gas, electricity, oxygen, nitrogen, sulfur processing and compressed dry air and other products purchased from third parties by the nitrogen fertilizer and petroleum businesses;
- risks associated with third party operation of or control over important facilities necessary for operation of our refineries and nitrogen fertilizer facilities;
- risks of terrorism, cybersecurity attacks, and the security of chemical manufacturing facilities and other matters beyond our control;

- our lack of diversification of assets or operating and supply areas;
- the petroleum business' and nitrogen fertilizer business' dependence on significant customers and the creditworthiness and performance by counterparties;
- the potential loss of the nitrogen fertilizer business' transportation cost advantage over its competitors;
- the potential inability to successfully implement our business strategies at all or on time and within our anticipated budgets, including significant capital programs or projects, turnarounds or renewable or carbon reduction initiatives at our refineries and fertilizer facilities, including pretreater, carbon sequestration, segregation of our renewables business and other projects;
- our ability to continue to license the technology used for our operations;
- our petroleum business' purchase of, or ability to purchase, renewable identification numbers ("RINs") on a timely and cost effective basis or at all;
- the impact of refined product demand, declining inventories, and Winter Storm Uri on refined product prices and crack spreads;
- Organization of Petroleum Exporting Countries' and its allies' ("OPEC+") production levels and pricing;
- the impact of RINs pricing, our blending and purchasing activities and governmental actions, including by the U.S. Environmental Protection Agency (the "EPA") on our RIN obligation, open RINs positions, small refinery exemptions, and our estimated consolidated cost to comply with our Renewable Fuel Standard ("RFS") obligations;
- operational upsets or changes in laws that could impact the amount and receipt of credits under Section 45Q of the Internal Revenue Code of 1986, as amended;
- our businesses' ability to obtain, retain or renew environmental and other governmental permits, licenses or authorizations necessary for the operation of its business;
- existing and proposed laws, regulations or rulings, including but not limited to those relating to climate change, alternative energy or fuel sources, and existing and future regulations related to the end-use of our products or the application of fertilizers;
- refinery and nitrogen fertilizer facilities' operating hazards and interruptions, including unscheduled maintenance or downtime and the availability of adequate insurance coverage;
- risks related to services provided by or competition among our subsidiaries, including conflicts of interests and control of CVR Partners, LP's general partner;
- instability and volatility in the capital and credit markets;
- risks related to the potential spin-off of our nitrogen fertilizer segment, including that the process of exploring the transaction and potentially completing the transaction, including the costs thereof, could disrupt or adversely affect our business, financial results and results of operations, that the transaction may not achieve some or all of any anticipated benefits, and that the transaction may not be completed in accordance with our expected plans, or at all;
- restrictions in our debt agreements;
- asset impairments and impacts thereof;
- the variable nature of CVR Partners, LP's distributions, including the ability of its general partner to modify or revoke its distribution policy, or to cease making cash distributions on its common units;
- changes in tax and other laws, regulations and policies, including, without limitation, actions of the Biden Administration that impact conventional fuel operations or favor renewable energy projects in the U.S.;
- changes in CVR Partners' treatment as a partnership for U.S. federal income or state tax purposes; and
- our ability to recover under our insurance policies for damages or losses in full or at all.

All forward looking statements contained in this Report only speak as of the date of this Report. We undertake no obligation to publicly update or revise any forward looking statements to reflect events or circumstances that occur after the date of this Report, or to reflect the occurrence of unanticipated events, except to the extent required by law.

Information About Us

Investors should note that we make available, free of charge on our website at www.CVREnergy.com, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and any amendments to those reports as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. We also post announcements, updates, events, investor information and presentations on our website in addition to copies of all recent news releases. We may use the Investor Relations section of our website to communicate with investors. It is possible that the financial and other information posted there could be deemed to be material information. Documents and information on our website are not incorporated by reference herein.

The SEC maintains a website at www.sec.gov that contains reports, proxy and information statements, and other information regarding issuers, including us, that file electronically with the SEC.

Risk Factors Summary

This summary of risks below is intended to provide an overview of the risks we face and should not be considered a substitute for the more fulsome risk factors discussed in this Annual Report on Form 10-K.

Risks Related to Our Entire Business

- Certain developments in the global oil markets have had, and may continue to have, material adverse impacts on the Company or its customers, suppliers, and other counterparties.
- Our petroleum and nitrogen fertilizer businesses are, and commodity prices are, cyclical and highly volatile, which could have a material adverse effect on our results of operations, financial condition and cash flows.
- Petroleum and nitrogen fertilizer businesses face intense competition.
- Our businesses are geographically concentrated, creating exposure to regional economic downturns and seasonal variations, which may affect our production levels, transportation costs, and inventory and working capital levels.
- Both the Petroleum and Nitrogen Fertilizer Segments depend on significant customers, the loss of which may have a material adverse impact on our results of operations, financial condition and cash flows.
- Any previous or future pandemic may impact our business, financial condition, liquidity or results of operations.
- If licensed technology were no longer available, our business may be adversely affected.
- Compliance with and changes in environmental laws and regulations, including those related to climate change and the ongoing “energy transition,” may adversely affect our business.
- Unplanned or emergency partial or total plant shutdowns could cause property damage and a material decline in production which may not be fully insured, which may have a material adverse effect on our results of operations, financial condition and cash flows.
- We could incur significant costs in cleaning up contamination at our facilities.
- Regulations concerning the transportation, storage, and handling of hazardous chemicals and materials, risks of terrorism, and the security of refineries and chemical manufacturing facilities could result in higher operating costs.
- Adverse weather conditions or other unforeseen developments may negatively affect our business.
- If our access to transportation on which we rely for the supply of our feedstocks and the distribution of our products is interrupted, our inventory and costs may increase and we may be unable to efficiently distribute our products.
- We may be unable to obtain or renew permits or approvals necessary for our operations.
- Failure to comply with laws and regulations regarding employee and process safety could adversely affect our business.
- A portion of our workforce is unionized, and we are subject to the risk of labor disputes, shutdowns or strikes.
- We are subject to cybersecurity risks and may experience cyber incidents resulting in disruption to our businesses.
- An increase in inflation could have adverse effects on our results of operations.

Risks Related to the Petroleum Segment

- If our Petroleum Segment is required to obtain its crude oil supply without the benefit of a crude oil supply agreement and significant crude oil gathering in the regions in which we operate, our exposure to the risks associated with volatile crude oil prices may increase, crude oil transportation costs could increase and our liquidity may be reduced.
- Compliance with the Renewable Fuel Standard could have a material adverse effect on our business, financial condition and results of operations.
- Changes in our credit profile could have a material adverse effect on our business.
- The Petroleum Segment’s commodity derivative contracts may involve certain risks.
- If we are unable to complete capital projects at their expected costs and/or in a timely manner, or if the market conditions assumed in project economics deteriorate, our business could be adversely affected.
- Investor and market sentiment related to Environmental, Social and Governance matters could adversely affect our business.

Risks Related to the Nitrogen Fertilizer Segment

- Any decline in U.S. agricultural production or limitations on the use of nitrogen fertilizer for agricultural purposes could have a material adverse effect on sales, and on our results of operations, financial condition and cash flows.
- Failure of our Coffeyville Refinery to continue to supply our Nitrogen Fertilizer Coffeyville plant with pet coke could negatively impact the Nitrogen Fertilizer Segment’s results of operations.
- The market for natural gas has been volatile, and fluctuations in natural gas prices could affect our competitive position.

- Any interruption in the supply of natural gas to our East Dubuque Fertilizer Facility could have a material adverse effect on our results of operations and financial condition.
- Our operations are dependent on third-party suppliers, which could have a material adverse effect on our business.
- Any liability for accidents causing severe damage could have a material adverse effect on our business.

Risks Related to Our Capital Structure

- Instability and volatility in the capital, credit, and commodity markets could negatively impact our business.
- Our indebtedness may increase and have a material adverse effect on our business.
- Covenants in our debt agreements could limit our ability to run our business.
- We may not be able to generate sufficient cash to service existing indebtedness.
- We are authorized to issue up to a total of 350 million shares of our common stock and 50 million shares of preferred stock, potentially diluting equity ownership of current holders and the share price of our common stock.
- An increase in interest rates will cause our debt service obligations to increase.

Risks Related to Our Corporate Structure

- The Company's reorganization of its entities and assets could trigger increased costs, complexity and risks.
- We are a holding company and depend upon our subsidiaries for our cash flow.
- Mr. Carl C. Icahn's interests may conflict with the interests of the Company's other stockholders.
- Our stock price may decline due to sales of shares by Mr. Carl C. Icahn.
- We are a "controlled company" within the meaning of the NYSE rules and, as a result, qualify for, and are relying on, exemptions from certain corporate governance requirements.
- We have various mechanisms in place to discourage takeover attempts, which may reduce or eliminate our stockholders' ability to sell their shares for a premium in a change of control transaction.
- Compliance with and changes in the tax laws could adversely affect our performance.

Risks Related to Our Ownership in CVR Partners

- If CVR Partners were to be treated as a corporation for U.S. federal income tax purposes or if it becomes subject to entity-level taxation for state tax purposes, the value of the common units held by us could be substantially reduced.
- We may have liability to repay distributions that are wrongfully distributed to us.
- The general partner of CVR Partners owes a duty of good faith to public unitholders, which could cause them to manage their respective businesses differently than if there were no public unitholders.
- CVR Partners is managed by the executive officers of its general partner, who are employed by and also serve as part of the senior management team of the Company. Conflicts of interest could arise as a result of this arrangement.
- The potential spin-off of our interest in the nitrogen fertilizer business may involve significant expense, disrupt or adversely affect the consolidated or separate businesses, including relationships with our customers, and may not be completed or achieve the intended results.
- If the potential spin-off does not qualify as a transaction that is generally tax-free for U.S. federal income tax purposes, the potential spin-off could result in substantial tax liability.

General Risks Related to CVR Energy

- The acquisition, expansion and investment strategy of our businesses involves significant risks.
- We are subject to the risk of becoming an investment company.
- Internally generated cash flows and other sources of liquidity may not be adequate for the capital needs of our businesses.
- Our ability to pay dividends on our common stock is subject to market conditions and numerous other factors.

PART I

Part I should be read in conjunction with “Management’s Discussion and Analysis” in Part II, Item 7, and our consolidated financial statements and related notes thereto in Part II, Item 8 of this Report.

Item 1. *Business*

Overview

CVR Energy, Inc. is a diversified holding company, formed in September 2006, primarily engaged in the petroleum refining and marketing industry (the “Petroleum Segment”) and the nitrogen fertilizer manufacturing industry through its interest in CVR Partners, LP, a publicly traded limited partnership (the “Nitrogen Fertilizer Segment” or “CVR Partners”), and also produces and markets renewable diesel. The Petroleum Segment refines and markets high value transportation fuels. CVR Partners produces and markets nitrogen fertilizers primarily in the form of UAN and ammonia. As used in this Annual Report on Form 10-K, the terms “CVR Energy”, the “Company”, “we”, “us”, or “our” generally include the Company’s subsidiaries, including CVR Partners and its subsidiaries, as consolidated subsidiaries of the Company, unless otherwise noted. Refer to “Petroleum” and “Nitrogen Fertilizer” below for further details on our two reportable segments.

Our common stock is listed on the New York Stock Exchange (“NYSE”) under the symbol “CVI,” and CVR Partners’ common units are listed on the NYSE under the symbol “UAN.”

As of December 31, 2022, Icahn Enterprises L.P. and its affiliates (“IEP”) owned approximately 71% of our outstanding common stock. As of December 31, 2022, we owned the general partner and approximately 37% of the outstanding common units representing limited partner interests in CVR Partners, with the public owning the remaining outstanding common units of CVR Partners.

Our History

The following graphic depicts the Company’s history and key events that have occurred since the Company’s formation.



Company Transformation

During 2022, the Company advanced its renewables initiatives. In April 2022, we completed a project at our Wynnewood Refinery by converting the refinery’s hydrocracker to a renewable diesel unit (“RDU”) capable of producing approximately 100 million gallons of renewable diesel per year at a total cost of \$179 million. The renewable diesel facility has a name plate capacity of 7,500 bpd; it is also capable of being returned to hydrocarbon service primarily through a catalyst change. In November 2021, CVR Energy’s board of directors (the “Board”) approved the renewable feedstock pretreater project at the Wynnewood Refinery, which is currently expected to be completed in the third quarter of 2023 at an estimated cost of \$95 million. Throughout 2022, the Company also advanced its renewables focus with its effort to transform its business to segregate its renewable business, and in February 2023, completed this effort, which included the formation of new CVR Energy indirect subsidiaries, the transfer of certain assets to such new subsidiaries, and execution of new intercompany agreements, among other actions.

In connection with our renewables business, we face competition from renewable fuel producers and other refiners that have been offering or might offer products with lower emissions. In connection with the sourcing of our renewable feedstocks, we face not only competition from consumers in the energy sector, such as renewable fuel producers, but also from non-energy related consumers, such as food producers. This increased competition from non-traditional food producers creates a unique dynamic of competing priorities for food versus fuel. Our renewables business is also highly dependent upon government

subsidies, including tax and carbon credits. Our renewable diesel operations are not part of our reportable segments discussed below.

Petroleum

Our Petroleum Segment is composed of the assets and operations of two refineries located in Coffeyville, Kansas and Wynnewood, Oklahoma and supporting logistics assets in the region.

Facilities

Coffeyville Refinery - We operate a complex full coking, medium-sour crude oil refinery in southeast Kansas, approximately 100 miles from Cushing, Oklahoma (“Cushing”) with a name plate crude oil capacity of 132,000 bpd (the “Coffeyville Refinery”). The major operations of the Coffeyville Refinery include fractionation, catalytic cracking, hydrotreating, reforming, coking, isomerization, alkylation, sulfur recovery, and propane and butane recovery operating units. The Coffeyville Refinery benefits from significant refining unit redundancies, which include two crude oil distillation, two vacuum towers, two sulfur recovery units, and five hydrotreating units. These redundancies allow the Coffeyville Refinery to continue to receive and process crude oil even if one tower requires maintenance without having to shut down the entire refinery.

Wynnewood Refinery - We operate a complex crude oil refinery in Wynnewood, Oklahoma, approximately 65 miles south of Oklahoma City, Oklahoma and approximately 130 miles from Cushing. The Wynnewood Refinery has a name plate crude oil capacity of 74,500 bpd capable of processing 20,000 bpd of light sour crude oil (the “Wynnewood Refinery” and together with the Coffeyville Refinery, the “Refineries”) with major operations including fractionation, fluid catalytic cracking, hydrotreating, reforming, alkylation, sulfur recovery, and propane and butane recovery. Similar to the Coffeyville Refinery, the Wynnewood Refinery benefits from unit redundancies, including two crude oil distillation and two vacuum towers as well as four hydrotreating units.

Throughput by Refinery

	Year Ended December 31, 2022		
	Coffeyville	Wynnewood	Total
(in bpd)			
Total crude throughput	127,626	62,981	190,607
All other feedstock and blendstock	11,556	3,125	14,681
Total throughput	139,182	66,106	205,288
	Year Ended December 31, 2021		
	Coffeyville	Wynnewood	Total
(in bpd)			
Total crude throughput	121,514	73,386	194,900
All other feedstock and blendstock	10,788	3,396	14,184
Total throughput	132,302	76,782	209,084

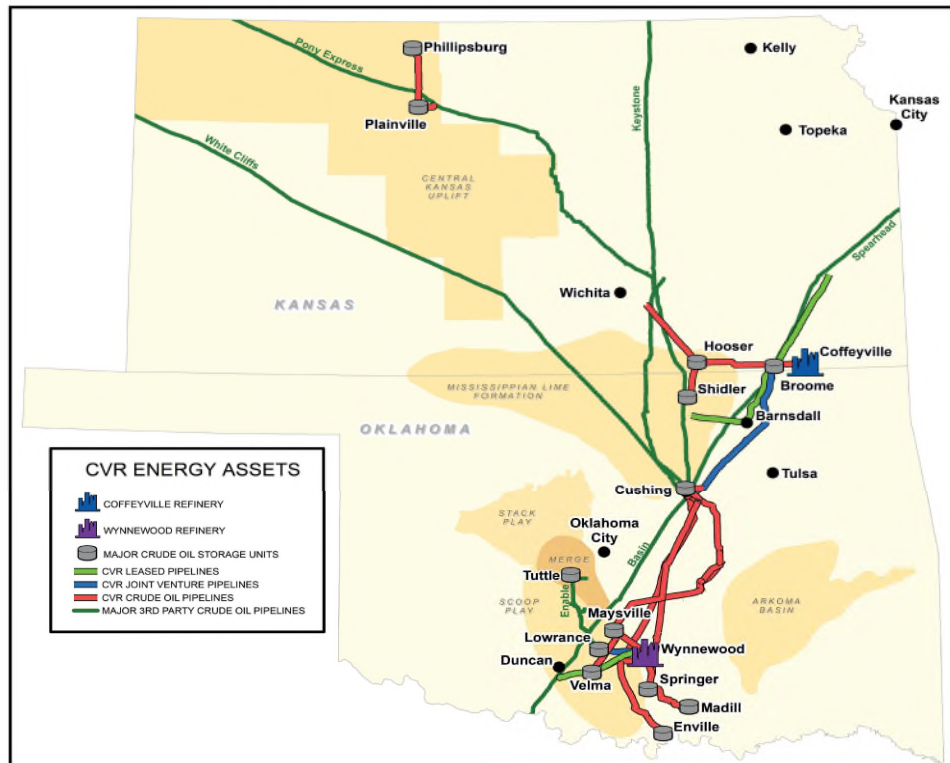
Production by Refinery

	Year Ended December 31, 2022		
	Coffeyville	Wynnewood	Total
(in bpd)			
Gasoline	72,478	35,027	107,505
Diesel fuels	58,104	23,690	81,794
Other refined products	9,489	5,723	15,212
Total production	140,071	64,440	204,511

(in bpd)

	Year Ended December 31, 2021		
	Coffeyville	Wynnewood	Total
Gasoline	71,070	39,858	110,928
Diesel fuels	53,441	31,662	85,103
Other refined products	8,727	2,883	11,610
Total production	133,238	74,403	207,641

Supply



The Coffeyville Refinery has the capability to process a variety of crude oils ranging from heavy sour to light sweet crude oil. Currently, the Coffeyville Refinery crude oil slate consists of a blend of mid-continent domestic grades and various Canadian medium and heavy sour and other similarly sourced crudes. Other blendstocks and intermediates include ethanol, biodiesel, normal butane, natural gasoline, alkylation feeds, naphtha, gas oil, and vacuum tower bottoms. The Wynnewood Refinery has the capability to process a variety of crude oils ranging from medium sour to light sweet crude oil. Isobutane, gasoline components, and normal butane blendstocks are also typically used.

In addition to the use of third-party pipelines, we have an extensive gathering system consisting of logistics assets that are owned, leased, or part of a joint venture operation. These assets include the following:

Pipeline Segment	As of December 31, 2022	
	Length (miles)	Capacity (bpd)
Joint Ventures:		
Midway Pipeline LLC (“Midway JV”) ⁽¹⁾	99	131,000
Enable South Central Pipeline (“Enable JV”) ⁽¹⁾	26	20,000
Owned Pipelines:		
East Tank Farm to Refinery 16” ⁽²⁾	2	156,000
Broome to East Tank Farm 16” ⁽²⁾	19	168,000
Broome to East Tank Farm 12” ⁽²⁾	19	28,000
Enable to Cushing 8” & 10” (Red River)	108	41,000
Maysville to Springer 8” (Red River)	45	17,000
Springer to Cushing 6” & 8”	125	23,000
Hooser to Broome 8”	43	12,000
Brothers to Hooser 8”	20	7,000
CapturePoint to Shidler 6”	3	16,000
Madill to Springer 6”	32	18,000
Maysville to Lawyer 6” & 8”	124	12,000
Velma to Maysville 6” & 8”	29	13,000
Plainville to Natoma 6”	11	7,000
Shidler to Hooser 4”	23	7,000
Phillipsburg to Plainville 6”	36	8,000
Enville to Wynnewood 4” & 6”	74	6,000
Leased Pipelines:		
Kelly to Caney Jct. 8”	66	13,000
Humboldt to Broome 8”	63	6,000

(1) Through our subsidiaries, we own a 50% interest in the Midway JV and a 40% interest in the Enable JV. While we have the ability to exercise influence through its participation on the board of directors of each of the Midway JV and the Enable JV, we do not serve as the day-to-day operator. We have determined that these entities should not be consolidated and are accounted for under the equity method. Refer to Part II, Item 8, Note 3 (“Equity Method Investments”) of this Report for further discussion of these investments.

(2) In support of our Coffeyville Refinery, we operate a tank storage facility in close proximity to the Coffeyville Refinery (the “East Tank Farm”).

For the acquisition of crude oil within close proximity of the Refineries, we operate a fleet of 112 trucks and have contracts with third-party trucking fleets to acquire and deliver crude oil to our pipeline systems or directly to the Refineries for consumption or resale. For the year ended December 31, 2022, the gathering system, which includes the pipelines outlined above and our trucking operations, supplied approximately 53% and 93% of the Coffeyville and Wynnewood Refineries’ crude oil demand, respectively. Regionally sourced crude oils delivered to the Refineries usually have a transportation cost advantage compared to other domestic or international crudes given the Refineries’ proximity to the producing areas. However, sometimes slightly heavier and more sour crudes may offer improved economics to the Refineries, notwithstanding the higher transportation costs. The regionally-sourced crude oils we purchase are light and sweet enough to allow the Refineries to blend higher percentages of lower cost crude oils, such as heavy Canadian sour, to optimize economics within operational constraints.

Crude oils sourced outside of our gathering system are delivered to Cushing by various third-party pipelines, including the Keystone and Spearhead pipelines, on which we can be subject to proration, and subsequently to the Broome Station facility via the Midway JV pipeline. From the Broome Station facility, crude oil is delivered to the Coffeyville Refinery via the Petroleum Segment’s 170,000 bpd proprietary pipeline system. Crude oils are delivered to the Wynnewood Refinery through third-party

and joint venture pipelines and received into storage tanks at terminals located within or near the refinery. We also lease tank storage totaling 2.2 million barrels, including 2.0 million barrels at Cushing.

In February 2021, we acquired pipelines from Blueknight Energy Partners, LP (the “BKEP / CRCT Pipeline System”), which complemented the Petroleum Segment’s existing refineries and pipeline systems. The BKEP / CRCT Pipeline System is based in the Wynnewood area and consists of gathering pipelines, which provide the ability to deliver local crude oil to the Wynnewood Refinery. In addition to the gathering capability, the BKEP / CRCT Pipeline System also provides the optionality to deliver and/or receive crude oil from Cushing on two separate lines.

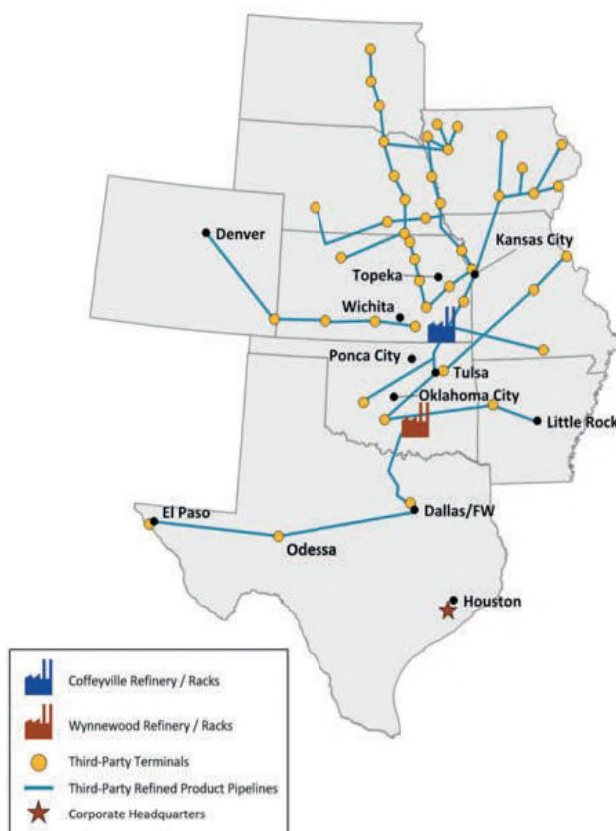
The Coffeyville Refinery is connected to the mid-continent natural gas liquid commercial hub at Conway, Kansas by the inbound Enterprise Pipeline Blue Line, through which natural gas liquid blendstocks, such as butanes and natural gasoline, are sourced and delivered directly into the refinery. In addition, the Coffeyville Refinery’s proximity to Conway, Kansas provides access to natural gas liquid and liquid petroleum gas fractionation and storage capabilities.

Through the crude oil and other feedstock supply operations outlined above, and the associated markets available to us, we are able to source and refine crude oils from different locations and of different compositions when it is economically advantageous for us to do so. The tables below present the total crude throughput by refinery for the years ended December 31, 2022 and 2021:

	Year Ended December 31, 2022					
	Coffeyville		Wynnewood		Total	
<i>(in bpd)</i>						
Regional Crude	53,237	42 %	46,159	73 %	99,396	52 %
WTI	38,265	30 %	—	— %	38,265	20 %
WTL	407	— %	2,323	4 %	2,730	2 %
WTS	462	— %	143	— %	605	— %
Midland WTI	642	1 %	1,073	2 %	1,715	1 %
Condensate	12,159	10 %	13,283	21 %	25,442	13 %
Heavy Canadian	6,847	5 %	—	— %	6,847	4 %
DJ Basin	15,607	12 %	—	— %	15,607	8 %
Total crude throughput	127,626	100 %	62,981	100 %	190,607	100 %

	Year Ended December 31, 2021					
	Coffeyville		Wynnewood		Total	
<i>(in bpd)</i>						
Regional Crude	28,270	23 %	60,287	82 %	88,557	46 %
WTI	62,695	52 %	—	— %	62,695	32 %
WTL	511	— %	3,430	5 %	3,941	2 %
WTS	—	— %	202	— %	202	— %
Midland WTI	452	— %	2,107	3 %	2,559	1 %
Condensate	7,911	7 %	7,360	10 %	15,271	8 %
Heavy Canadian	3,695	3 %	—	— %	3,695	2 %
DJ Basin	17,980	15 %	—	— %	17,980	9 %
Total crude throughput	121,514	100 %	73,386	100 %	194,900	100 %

Marketing and Distribution



Our Coffeyville product marketing efforts are focused in the central mid-continent area through rack marketing, which is the supply of product through tanker trucks and railcars directly to customers located in close geographic proximity to the refinery and to customers at terminals on third-party refined products distribution systems; and bulk sales into the mid-continent markets and other destinations utilizing third-party product pipeline networks.

The Wynnewood Refinery ships its finished product via pipeline, railcar, and truck, focusing its efforts in Oklahoma and parts of Arkansas, as well as eastern Missouri. The pipeline system used by the Wynnewood Refinery is capable of multi-directional flow, providing access to Texas markets as well as adjoining states with pipeline connections. Jet fuel produced at the Wynnewood Refinery is sold to the U.S. Department of Defense via the segregated truck rack at the Wynnewood Refinery.

Customers

Customers for the Refineries' petroleum products primarily include retailers, railroads, farm cooperatives, and other refiners/marketers in Group 3 of the PADD II region because of their relative proximity to the Refineries and pipeline access. We typically sell bulk products to long-standing customers at spot market prices based on a Group 3 basis differential to prices quoted on the New York Mercantile Exchange ("NYMEX") subject to other terms or adjustments, which are reported by industry market-related indices such as Platts and Oil Price Information Service ("OPIS").

Rack sales are at posted prices that are influenced by the competitive forces in Group 3 of the PADD II region among other factors. In addition, we sell hydrogen and by-products of our refining operations in Coffeyville, Kansas, such as pet coke, to an affiliate, Coffeyville Resources Nitrogen Fertilizer, LLC ("CRNF"), which is an indirect, wholly-owned subsidiary of CVR Partners. The Petroleum Segment's top two customers represented 25% and 26% of its net sales for the years ended December 31, 2022 and 2020, respectively, and its top customer represented 16% of its net sales for the year ended December 31, 2021.

Competition

Our Petroleum Segment competes primarily on the basis of price, reliability of supply, availability of multiple grades of products, and location. The principal competitive factors affecting its refining operations are cost of crude oil and other feedstocks, refinery complexity, refinery efficiency, refinery product mix, product distribution and transportation costs, and costs of compliance with government regulations, including the Renewable Fuel Standard (“RFS”). The locations of the Refineries provides us with a reliable supply of crude oil and a transportation cost advantage over our competitors. We primarily compete against CHS Inc.’s McPherson Refinery; HF Sinclair Corporation’s (formerly known as HollyFrontier Corporation) El Dorado and Tulsa Refineries; Phillips 66 Company’s Ponca Refinery; and Valero Energy Corporation’s Ardmore Refinery in the mid-continent region. In addition to these refineries, we compete against trading companies, as well as other refineries located outside the region that are linked to the mid-continent market through product pipeline systems, including those near the Gulf Coast, the Great Lakes, and the Texas panhandle regions.

Seasonality

Our Petroleum Segment operations experience seasonal fluctuations as demand for gasoline products is generally higher during the summer months than during the winter months due to seasonal increases in highway traffic and road construction work. Demand for diesel fuel is higher during the planting and harvesting seasons. As a result, our results of operations for the Petroleum Segment for the first and fourth calendar quarters are generally lower compared to our results for the second and third calendar quarters. In addition, unseasonably cool weather in the summer months and/or unseasonably warm weather in the winter months in the markets in which we sell petroleum products can impact the demand for gasoline and diesel fuel.

Nitrogen Fertilizer

Our Nitrogen Fertilizer Segment is composed of the assets and operations of CVR Partners, including two nitrogen fertilizer manufacturing facilities located in Coffeyville, Kansas and East Dubuque, Illinois.

Facilities

Coffeyville Fertilizer Facility - We own and operate a nitrogen fertilizer production facility in Coffeyville, Kansas that includes a gasifier complex having a capacity of 89 million standard cubic feet per day of hydrogen, a 1,300 ton per day capacity ammonia unit and a 3,100 ton per day capacity UAN unit (the “Coffeyville Fertilizer Facility”). The Coffeyville Fertilizer Facility is the only nitrogen fertilizer plant in North America that utilizes a pet coke gasification process to produce nitrogen fertilizer. The Coffeyville Fertilizer Facility’s largest raw material cost used in the production of ammonia is pet coke, which it purchases from our Coffeyville Refinery and third parties. For the years ended December 31, 2022, 2021, and 2020, the Coffeyville Fertilizer Facility purchased approximately \$22 million, \$23 million, and \$18 million, respectively, of pet coke, which equaled an average cost per ton of \$52.88, \$44.69, and \$35.25, respectively. For the years ended December 31, 2022, 2021, and 2020, we upgraded approximately 94%, 87%, and 87%, respectively, of our ammonia production into UAN, a product that generated greater profit per ton than ammonia for both 2022 and 2021, but not for 2020. When the economics are favorable, we expect to continue upgrading substantially all of our ammonia production into UAN.

East Dubuque Fertilizer Facility - We own and operate a nitrogen fertilizer production facility in East Dubuque, Illinois that includes a 1,075 ton per day capacity ammonia unit and a 950 ton per day capacity UAN unit (the “East Dubuque Fertilizer Facility”). The East Dubuque Fertilizer Facility has the flexibility to vary its product mix, thereby enabling it to upgrade a portion of its ammonia production into varying amounts of UAN, nitric acid, and liquid and granulated urea, depending on market demand, pricing, and storage availability. The East Dubuque Fertilizer Facility’s largest raw material cost used in the production of ammonia is natural gas, which it purchases from third parties. For the years ended December 31, 2022, 2021, and 2020, the East Dubuque Fertilizer Facility incurred approximately \$46 million, \$32 million, and \$20 million for feedstock natural gas used in production, respectively, which equaled an average cost of \$6.66, \$3.95, and \$2.31 per MMBtu, respectively.

Commodities

The nitrogen products we produce are globally traded commodities and are subject to price competition. The customers for CVR Partners’ products make their purchasing decisions principally on the basis of delivered price and, to a lesser extent, on

customer service and product quality. The selling prices of its products fluctuate in response to global market conditions, feedstock costs, and changes in supply and demand.

Agriculture

Nutrients are depleted in soil over time and, therefore, must be replenished through fertilizer application. Nitrogen is the most quickly depleted nutrient and must be replenished every year, whereas phosphate and potassium can be retained in soil for up to three years. Plants require nitrogen in the largest amounts, and it accounts for approximately 56% of primary fertilizer consumption on a nutrient ton basis, per the International Fertilizer Association (“IFA”).

The three primary forms of nitrogen fertilizer used in the United States are ammonia, urea, and UAN. Unlike ammonia and urea, UAN can be applied throughout the growing season and can be applied in tandem with pesticides and herbicides, providing farmers with flexibility and cost savings. As a result of these factors, UAN typically commands a premium price to urea and ammonia, on a nitrogen equivalent basis. However, during 2020, UAN commanded a discount price to urea and premium to ammonia, on a nitrogen equivalent basis.

Demand

Global demand for fertilizers is driven primarily by grain demand and prices, which, in turn, are driven by population growth, farmland per capita, dietary changes in the developing world and increased consumption of bio-fuels. According to the IFA, from 1976 to 2020, global fertilizer demand grew 2% annually. Global fertilizer use, consisting of nitrogen, phosphate and potash, is projected to increase by 3% through 2023 to meet global food demand according to a study funded by the Food and Agricultural Organization of the United Nations. Currently, the developed world uses fertilizer more intensively than the developing world, but sustained economic growth in emerging markets is increasing food demand and fertilizer use. In addition, populations in developing countries are shifting to more protein-rich diets as their incomes increase, with such consumption requiring more grain for animal feed. As an example, China’s wheat and coarse grains production is estimated to have increased 40% between 2011 and 2022, but still failed to keep pace with increases in demand, prompting China to grow its wheat and coarse grain imports by more than 1,307% over the same period, according to the United States Department of Agriculture (“USDA”).

The United States is the world’s largest exporter and producer of coarse grains, accounting for 24% of world exports and 25% of world production for the fiscal year ended December 31, 2022, according to the USDA. A substantial amount of nitrogen is consumed in production of these crops to increase yield. Based on Fertecon Limited’s (“Fertecon”) 2022 estimates, the United States is the world’s third largest consumer and importer of nitrogen fertilizer. Fertecon is an agency which provides market information and analysis on fertilizers and fertilizer raw materials for fertilizer and related industries, as well as international agencies. Fertecon estimates indicate that the United States represented 11% of total global nitrogen fertilizer consumption for 2022, with China and India as the top consumers representing 22% and 17% of total global nitrogen fertilizer consumption, respectively.

North American nitrogen fertilizer producers predominantly use natural gas as their primary feedstock. Over the last five years, U.S. oil and natural gas reserves have increased significantly due to, among other factors, advances in extracting shale oil and gas, as well as relatively high oil and gas prices. During February 2022, Russia invaded Ukraine, tightening global supply conditions for nitrogen fertilizers as economies began to recover from the global COVID-19 pandemic. Following the invasion of Ukraine, Russia also began restricting supplies of natural gas to Europe in response to European sanctions against Russia. As a result, costs for natural gas as a feedstock in Europe increased significantly and caused multiple fertilizer plant shut-ins. Certain European countries also curtailed industrial natural gas usage, resulting in deteriorated economics for producing fertilizers in the region. In addition, China and Russia restricted exports of fertilizers for much of 2022 in order to ensure domestic availability. In North America, natural gas prices also increased throughout 2022, but decreased in January 2023. However, higher nitrogen fertilizer prices more than offset the rise in natural gas costs throughout 2022. As a result, North America continues to be a low-cost region for nitrogen fertilizer production.

Raw Material Supply

Coffeyville Fertilizer Facility - During the past five years, approximately 44% of the Coffeyville Fertilizer Facility’s pet coke requirements on average were supplied by our adjacent Coffeyville Refinery pursuant to the Coffeyville Master Services Agreement (the “Coffeyville MSA”). Historically, the Coffeyville Fertilizer Facility has obtained the remainder of its pet coke

requirements through third-party contracts typically priced at a discount to the spot market. In 2022, 2021, and 2020, our supply of pet coke from the Coffeyville Refinery was approximately 47%, 43%, and 33%, respectively. We have contracts with several vendors to supply third-party pet coke, which could be delivered by truck, railcar or barge.

Additionally, our Coffeyville Fertilizer Facility relies on a third-party air separation plant at its location that provides contract volumes of oxygen, nitrogen, and compressed dry air to the Coffeyville Fertilizer Facility gasifiers. The reliability of the air separation plant can have a significant impact on our Coffeyville Fertilizer Facility's operations. In 2020, we executed a new product supply agreement that obligates the counterparty to invest funds to upgrade its facility to reduce downtime over the next several years. Should the oxygen volume fall below a specified level, the on-site vendor is contractually obligated to provide excess oxygen through its own mechanism or through third-party purchases.

East Dubuque Fertilizer Facility - The East Dubuque Fertilizer Facility uses natural gas to produce nitrogen fertilizer. We are generally able to purchase natural gas at competitive prices due to the facility's connection to the Northern Natural Gas interstate pipeline system, which is within one mile of the facility, and a third-party owned and operated pipeline. The pipelines are connected to a third-party distribution system at the Chicago Citygate receipt point and at the Hampshire interconnect from which natural gas is transported to the East Dubuque Fertilizer Facility. As of December 31, 2022, we had commitments to purchase approximately 1 million MMBtus of natural gas supply for planned use in our East Dubuque Fertilizer Facility in both January and February of 2023 at a weighted average rate per MMBtu of approximately \$9.50 and \$9.72, respectively, exclusive of transportation costs.

Marketing and Distribution

Our Nitrogen Fertilizer Segment primarily markets UAN products to agricultural customers and ammonia products to agricultural and industrial customers. UAN and ammonia, including freight, accounted for approximately 70% and 24%, respectively, of our Nitrogen Fertilizer Segment's total net sales for the year ended December 31, 2022.

UAN and ammonia are primarily distributed by truck or railcar. If delivered by truck, products are most commonly sold on a free-on-board ("FOB") shipping point basis, and freight is normally arranged by the customer. We also utilize a fleet of railcars for use in product delivery. If delivered by railcar, products are most commonly sold on a FOB destination point basis, and we typically arrange the freight.

The nitrogen fertilizer products leave the Coffeyville Fertilizer Facility either in railcars for destinations located principally on the Union Pacific or Burlington Northern Santa Fe railroads or in trucks for direct shipment to customers. The East Dubuque Fertilizer Facility primarily sells product to customers located within 200 miles of the facility. In most instances, customers take delivery of nitrogen products at the East Dubuque Fertilizer Facility and arrange to transport them to their final destinations by truck. Additionally, the East Dubuque Fertilizer Facility has direct access to a barge dock on the Mississippi River, as well as a nearby rail spur serviced by the Canadian National Railway Company, both of which are used from time to time to sell and distribute our Nitrogen Fertilizer Segment's products.

Customers

Retailers and distributors are the main customers for UAN and, more broadly, the industrial and agricultural sectors are the primary recipients of our ammonia products. Given the nature of our nitrogen fertilizer business, and consistent with industry practice, we sell our products on a wholesale basis under a contract or by purchase order. Contracts with customers generally contain fixed pricing and have terms of less than one year. The Nitrogen Fertilizer Segment's top two customers represented 30% and 26% of its net sales for the years ended December 31, 2022 and 2020, respectively, and its top customer represented 13% of its net sales for the year ended December 31, 2021.

Competition

Our Nitrogen Fertilizer Segment produces globally traded commodities and has competitors in every region of the world. The industry is dominated by price considerations, which are driven by raw material and transportation costs, currency fluctuations, trade barriers, and regulators. Our Nitrogen Fertilizer Segment has experienced, and expects to continue to experience, significant levels of competition from domestic and foreign nitrogen fertilizer producers, many of whom have significantly greater financial and other resources. Farming activities intensify in the United States during the spring and fall fertilizer application periods, and geographic proximity to these activities is also a significant competitive advantage for

domestic producers. We manage our manufacturing and distribution operations to best serve our customers during these critical periods.

Subject to location and other considerations, our major competitors in the nitrogen fertilizer business generally includes CF Industries Holdings, Inc., which sells significantly more nitrogen fertilizers in the United States than other industry participants; Nutrien Ltd.; Koch Fertilizer Company, LLC; OCI N.V.; and LSB Industries, Inc. Domestic customers generally demonstrate sophisticated buying tendencies that include a focus on cost and service. We also encounter competition from producers of fertilizer products manufactured in foreign countries, including the threat of increased production capacity. In certain cases, foreign producers of fertilizer that export to the United States may be subsidized by their respective governments.

Seasonality

Because the Nitrogen Fertilizer Segment primarily sells agricultural commodity products, its business is exposed to seasonal fluctuations in demand for nitrogen fertilizer products in the agricultural industry. In addition, the demand for fertilizers is affected by the aggregate crop planting decisions and fertilizer application rate decisions of individual farmers who make planting decisions based largely on the prospective profitability of a harvest. The specific varieties and amounts of fertilizer they apply depend on factors like crop prices, farmers' current liquidity, soil conditions, weather patterns, and the types of crops planted. The Nitrogen Fertilizer Segment typically experiences higher net sales in the first half of the calendar year, which is referred to as the planting season, and its net sales tend to be lower during the second half of each calendar year, which is referred to as the fall season.

Environmental Matters

Our petroleum and nitrogen fertilizer businesses are subject to extensive and frequently changing federal, state, and local environmental laws and regulations governing the emission and release of regulated substances into the environment, the transportation, storage, and disposal of waste, the treatment and discharge of wastewater and stormwater, the storage, handling, use, and transportation of petroleum and nitrogen fertilizer products, and the characteristics and composition of gasoline, diesel fuels, UAN, and ammonia. These laws and regulations and the enforcement thereof impact our segments and their operations by imposing:

- restrictions on operations or the need to install enhanced or additional control and monitoring equipment;
- liability for the investigation and remediation of contaminated soil and groundwater at current and former facilities (if any) and for off-site waste disposal locations; and
- specifications for the products marketed by the Petroleum and Nitrogen Fertilizer Segments, primarily gasoline, diesel fuel, UAN, and ammonia.

Our operations require numerous permits, licenses, and authorizations. Failure to comply with these permits or environmental laws and regulations could result in fines, penalties, or other sanctions or a revocation of our permits, licenses, or authorizations. In addition, the laws and regulations to which we are subject are often evolving and many of them have or could become more stringent or have or could become subject to more stringent interpretation or enforcement by federal or state agencies. These laws and regulations could result in increased capital, operating, and compliance costs.

The Federal Clean Air Act ("CAA")

The CAA and its implementing regulations, as well as state laws and regulations governing air emissions, affect the Petroleum and Nitrogen Fertilizer Segments both directly and indirectly. Direct impacts may occur through the CAA's permitting requirements and/or emission control and monitoring requirements relating to specific air pollutants, as well as the requirement to maintain a risk management program to help prevent accidental releases of certain regulated substances. The CAA affects the Petroleum and Nitrogen Fertilizer Segments by extensively regulating the air emissions of sulfur dioxide ("SO₂"), volatile organic compounds, nitrogen oxides, and other substances, including those emitted by mobile sources, which are direct or indirect users of our products. Some or all of the regulations promulgated pursuant to the CAA, or any future promulgations of regulations, may require the installation of controls or changes to the Refineries and/or the nitrogen fertilizer facilities (collectively referred to as the "Facilities") to maintain compliance. If new controls or changes to operations are needed, the costs could be material.

The regulation of air emissions under the CAA requires that we obtain various construction and operating permits and incur capital expenditures for the installation of certain air pollution control devices at our operations. Various standards and programs specific to our operations have been implemented, such as the National Emission Standard for Hazardous Air Pollutants, the New Source Performance Standards, and the New Source Review.

The Environmental Protection Agency (“EPA”) regulates greenhouse gas (“GHG”) emissions under the CAA. In October 2009, the EPA finalized a rule requiring certain large emitters of GHGs to inventory and report their GHG emissions to the EPA. In accordance with the rule, our Facilities monitor and report our GHG emissions to the EPA. In May 2010, the EPA finalized the “Greenhouse Gas Tailoring Rule,” which established GHG emissions thresholds that determine when stationary sources, such as the Refineries and the Facilities, must obtain permits under the Prevention of Significant Deterioration (“PSD”) and Title V programs of the CAA. Under the rule, facilities already subject to the PSD and Title V programs that increase their emissions of GHGs by a significant amount are required to undergo PSD review and to evaluate and implement air pollution control technology, known as “best available control technology,” to reduce GHG emissions.

The Biden Administration has signaled that it will take steps intended to address climate change. On January 20, 2021, the White House issued its Executive Order titled “Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis,” as well as a formal notification re-accepting entry of the United States into the Paris Agreement. On January 27, 2021, the White House issued another climate-related Executive Order, titled “Tackling the Climate Crisis at Home and Abroad.” On April 22, 2021, the Biden Administration announced a new target for the United States to achieve a 50 to 52 percent reduction from 2005 levels in economy-wide net GHG emissions in 2030.

The EPA’s approach to regulating GHG emissions may change, including under future administrations. Therefore, the impact on our Facilities due to GHG regulation is unknown.

Recent Greenhouse Gas Footprint Reduction Efforts

In October 2020, the Nitrogen Fertilizer Segment announced that it generated its first carbon offset credits from voluntary nitrous oxide abatement at its Coffeyville Fertilizer Facility. The Nitrogen Fertilizer Segment has similar nitrous oxide abatement efforts at its East Dubuque Fertilizer Facility. According to the EPA, nitrous oxide represents approximately 7% of carbon dioxide-equivalent (“CO₂e”) emissions in the United States.

The Nitrogen Fertilizer Segment previously entered into a Joint Development Agreement with ClimeCo, a developer of emission-reduction projects for nitric acid plants, to jointly design, install and operate a tertiary abatement system at one of its nitric acid plants in Coffeyville. The system was designed to abate 94% of all N₂O in the unit while preventing the release of approximately 450,000 metric tons of carbon dioxide equivalent on an annualized basis. The N₂O abatement systems at the East Dubuque Fertilizer Facility’s two nitric acid plants have abated, on average, the annual release of approximately 265,000 metric tons of CO₂e during the past five years.

CVR Partners’ N₂O abatement projects are registered with the Climate Action Reserve (the “Reserve”), a carbon offset registry for the North American market. The Reserve employs high-quality standards and an independent third-party verification process to issue its carbon credits, known as Climate Reserve Tonnes.

The Nitrogen Fertilizer Segment also sequesters carbon dioxide that is not utilized for urea production at its Coffeyville Fertilizer Facility by capturing and purifying the CO₂ as part of its manufacturing process and then transfers it to CapturePoint LLC, an unaffiliated third-party (“CapturePoint”), which then compresses and ships the CO₂ for sequestration through Enhanced Oil Recovery (“EOR”). We believe that certain carbon oxide capture and sequestration activities conducted at or in connection with the Coffeyville Fertilizer Facility qualify under the Internal Revenue Service safe harbor described in Revenue Procedure 2020-12 for certain tax credits available to joint ventures under Section 45Q of the Internal Revenue Code of 1986, as amended (“Section 45Q Credits”). In January 2023, we entered into a series of agreements with CapturePoint and certain unaffiliated third-party investors intended to qualify under the Internal Revenue Service safe harbor described in Revenue Procedure 2020-12 for certain joint ventures that are eligible to claim Section 45Q Credits and to allow us to monetize Section 45Q Credits we expect to generate from January 6, 2023 until March 31, 2030. In January 2023, we received an initial upfront payment, net of expenses, of approximately \$18 million and could receive up to an additional \$60 million in payments through March 31, 2030, if certain carbon oxide capture and sequestration milestones are met, subject to the terms of the applicable agreements. The foregoing summaries of the applicable agreements do not purport to be complete and are qualified in their

entirety by the terms of the relevant agreements, which will be filed with our Quarterly Report on Form 10-Q for the period ended March 31, 2023.

Combining our nitrous oxide abatement and CO₂ sequestration activities should reduce our CO₂e footprint by an average of over 1 million metric tons per year. In addition, our Coffeyville Fertilizer Facility is uniquely qualified to produce hydrogen and ammonia that could be certified 'blue' to a market that is increasingly demanding reduced carbon footprints. These greenhouse gas footprint reduction efforts support our core Values of Environment and Continuous Improvement, and our goal of continuing to produce nitrogen fertilizers that produce crops that help to feed the world's growing population in the most environmentally responsible way possible.

Renewable Fuel Standard

Pursuant to the Energy Policy Act of 2005 and Energy Independence and Security Act of 2007 ("EISA"), the EPA has promulgated the RFS, which requires obligated parties, defined by the EPA as refiners or importers of transportation fuels, to either blend "renewable fuels," such as ethanol and biofuels, into their transportation fuels or purchase renewable fuel credits, known as renewable identification numbers ("RINs"), in lieu of blending. Under the RFS, the volume of renewable fuels that obligated parties like Coffeyville Resources Refining & Marketing, LLC ("CRRM") and Wynnewood Refining Company, LLC ("WRC," and together with CRRM, the "obligated-party subsidiaries") are obligated to blend into their finished transportation fuel is adjusted annually by the EPA based on expected fuel demand and other conditions to meet the statutory mandates that increase annually, but which may be waived by the EPA under certain conditions. The volume of renewable fuels required by EISA increased from 9 billion gallons in 2008 to 36 billion gallons in 2022. The Petroleum Segment's obligated-party subsidiaries (like many refiners) are not able to meet their annual renewable volume obligation ("RVO") through blending, so have had to purchase RINs on the open market as well as obtain cellulosic waiver credits from the EPA in order to comply with the RFS, unless their RVO is waived or exempted by the EPA. Additionally, CRRM purchases RINs generated from the Company's renewable diesel operations, whose operating results are not currently included in either of our reportable segments, to partially satisfy its RFS obligations. The cost of purchasing RINs and cellulosic waiver credits fluctuates and can be significant. The price of RINs became extremely volatile when the EPA's proposed renewable fuel volume mandates approached and exceeded the "blend wall." The blend wall refers to the point at which the amount of ethanol required to be blended into the gasoline supply exceeds the level at which most engines can safely run on gasoline blended with ethanol. The blend wall is generally considered to be reached when more than 10 percent ethanol by volume ("E10") is blended into gasoline. The volatility of RIN prices also increased significantly in response to a number of uncertainties regarding the implementation of the RFS program in 2020, 2021, 2022 and has continued into 2023.

In 2019, the EPA finalized regulatory changes to allow gasoline blended with up to 15 percent ethanol ("E15") to take advantage of a waiver during the summer months that previously only applied to E10, which meant that E15 could be sold year-round rather than just eight months of the year. However, the United States District Court for the District of Columbia Circuit ("D.C. Circuit") overturned the E15 rule in July 2021, and in January 2022, the U.S. Supreme Court upheld the D.C. Circuit's decision. While that ruling prevents EPA from granting year-round E15 sales by extending a nationally-applicable seasonal waiver to E15, a group of Midwestern governors petitioned EPA in April 2022 to allow summertime sales of E15 in their states, including Kansas, under different Clean Air Act authority. EPA sent a proposed rule to the Office of Management and Budget ("OMB") in December 2022, which is expected to approve the individual state requests. OMB has not yet completed its review of the proposal. Once OMB's review is complete, the proposed rule likely will be released for public comment. Biofuels groups have separately joined the American Petroleum Institute (API) in support of legislation to authorize E15 fuel nationwide.

Additionally, our costs to comply with the RFS depend on the consistent and timely application of the program by the EPA, such as timely establishment of the annual RVO. RIN prices have been highly volatile and remain high due in large part to the EPA's unlawful failure to establish the 2021, 2022, and 2023 RVOs by their respective statutory deadlines, unlawful delay in issuing decisions on pending small refinery hardship petitions, and subsequent denial thereof. The price of RINs has also been impacted by market factors as well as the depletion of the carryover RIN bank, as demand destruction during the COVID-19 pandemic resulted in reduced ethanol blending and RIN generation that did not keep pace with mandated volumes, requiring carryover RINs from the RIN bank to be used to settle blending obligations. As a result, our costs to comply with RFS (excluding the impacts of any exemptions or waivers to which the Petroleum Segment's obligated-party subsidiaries may be entitled) increased significantly throughout 2020, 2021, and remained significant in 2022.

On February 2, 2022, the EPA issued a final rule to extend the 2019 RFS compliance deadline for small refineries and the 2020 and 2021 RFS compliance deadlines for all obligated parties. The EPA also issued a new method for determining RFS

compliance deadlines for 2022 and beyond, under which the deadlines would automatically be extended in the event the EPA fails to promulgate the annual renewable fuel volumes by the deadline provided in the CAA. Unless vacated by the D.C. Circuit, this rule alters the deadlines by which CRRM and, unless exempted, WRC must comply with its RFS obligations. CRRM and WRC, among others, filed a Petition for Review of this final rule with the United States Court of Appeals for the District of Columbia Circuit on February 4, 2022. The D.C. Circuit heard oral arguments on January 19, 2023. WRC and CRRM are awaiting the court's decision, which is expected later in 2023. On September 2, 2022, the EPA issued a final rule providing an optional RFS compliance schedule for small refineries for the 2020 compliance year. WRC, among others, filed a Petition for Review of this final rule with the United States Court of Appeals for the District of Columbia Circuit in June 2022.

In April 2022, the EPA denied 36 small refinery exemptions ("SRE") for the 2018 compliance year, many of which had been previously granted by the EPA, including the SRE to WRC, and also issued an alternative compliance demonstration approach for certain small refineries (the "Alternate Compliance Ruling") under which they would not be required to purchase or redeem additional RINs as a result of the EPA's denial. In June 2022, the EPA announced its revision of the 2020 RVO and finalized the 2021 and 2022 RVOs. Also in June 2022, the EPA denied 69 petitions from small refineries seeking SREs, including those submitted by WRC for 2017, 2019, 2020, and 2021, and applied the Alternate Compliance Ruling to three such petitions. The price of RINs remained elevated following the EPA announcements, and as a result, we continue to expect significant volatility in the price of RINs during 2023, which volatility could have material impacts on the Company's results of operations, financial condition, and cash flows.

The EPA has statutory authority to determine RFS volumes for 2023 and beyond. On December 30, 2022, the EPA proposed the applicable volumes and percentage standards for 2023 through 2025. In the proposal, the EPA intends to set the implied conventional volume requirement at 15 billion gallons - beyond the blend wall - and is, for the first time, proposing to establish a cellulosic biofuel standard without utilizing the cellulosic waiver and issuing cellulosic waiver credits.

The EPA also proposed significant changes to the RFS program including regulations governing the generation of qualifying renewable electricity (eRINs) in December 2022. These changes, if finalized, would impact CRRM and WRC's obligations under the RFS.

The Federal Clean Water Act ("CWA")

The CWA and its implementing regulations, as well as state laws and regulations that govern the discharge of pollutants into the water, affect the Petroleum and Nitrogen Fertilizer Segments. The CWA's permitting requirements establish discharge limitations that may be based on technology standards, water quality standards, and restrictions on the total maximum daily load of pollutants allowed to enter a particular water body based on its use. In addition, water resources are becoming more scarce, and many refiners, including us, are subject to use restrictions in the event of low availability conditions. Our Refineries and the Coffeyville Fertilizer Facility have contracts in place to receive water during certain water shortage conditions, but these conditions could change over time depending on the scarcity of water.

Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA") and the Emergency Planning and Community Right-to-Know Act ("EPCRA")

The release of hazardous substances or extremely hazardous substances into the environment is subject to release reporting requirements under federal and state environmental laws. Our Facilities also periodically experience releases of hazardous and extremely hazardous substances from their equipment and periodically have excess emission events. From time to time, the EPA has conducted inspections and issued information requests to us with respect to our compliance with reporting requirements under the CERCLA and the EPCRA. If we fail to timely or properly report a release, or if a release violates the law or our permits, we could become the subject of a governmental enforcement action or third-party claims. Government enforcement or third-party claims relating to releases of hazardous or extremely hazardous substances could result in significant expenditures and liability.

Resource Conservation and Recovery Act ("RCRA")

Our Refineries are subject to the RCRA requirements for the generation, transportation, treatment, storage, and disposal of solid and hazardous wastes. When feasible, RCRA-regulated materials are recycled instead of being disposed of on-site or off-site. RCRA establishes standards for the management of solid and hazardous wastes. Besides governing current waste disposal

practices, RCRA also addresses the environmental effects of certain past waste disposal practices, the recycling of wastes, and the regulation of underground storage tanks containing regulated substances.

Impacts of Past Manufacturing - In March 2004, two of our subsidiaries entered into a Consent Decree (“2004 Consent Decree”) with the EPA and the Kansas Department of Health and Environment (the “KDHE”) that required us to assume two RCRA corrective action orders issued to Farmland, the prior owner of the Coffeyville Refinery. Until January 21, 2021, we were subject to a 1994 EPA administrative order related to investigation of possible past releases of hazardous materials to the environment at the Coffeyville Refinery. In accordance with the order, we have conducted the required investigation and interim remediation projects and documented existing soil and groundwater conditions. In June 2017, the Coffeyville Refinery submitted an amended RCRA post-closure permit application to the KDHE to complete closure of former hazardous waste management units at the Coffeyville Refinery and to perform corrective action at the site. The KDHE approved the post-closure permit application in July 2019, and the RCRA permit was issued on December 16, 2020. The EPA terminated the 1994 administrative order on January 21, 2021. On January 13, 2021, the Coffeyville Fertilizer Facility entered into an agreement with the KDHE to address certain historical releases of UAN located on property held by CRNF that comingled with legacy groundwater contamination from the adjacent Coffeyville Refinery. The cleanup provisions of the agreement with the KDHE are held in abeyance so long as the Coffeyville Refinery conducts corrective action for these comingled historical releases in accordance with CRRM’s RCRA permit. The now-closed Phillipsburg terminal is subject to a 1996 EPA administrative order related to investigation of releases of hazardous materials to the environment at the Phillipsburg terminal, which operated as a refinery until 1991. The Phillipsburg terminal investigation is complete and corrective measures are in place implementing the EPA’s Statement of Basis and Final Remedy Decision issued in July 2018. The Wynnewood Refinery operates under a RCRA permit. A RCRA facility investigation has been completed in accordance with the terms of the permit. Based on the facility investigation and other available information, WRC entered into a consent order with the Oklahoma Department of Environmental Quality (the “ODEQ”) requiring further investigations of groundwater conditions and enhancements of existing remediation systems. We have completed the groundwater investigation at the Wynnewood Refinery and the ODEQ has approved our ongoing corrective actions. The consent order was terminated by the ODEQ in July 2019.

Financial Assurance - We are required under the 2004 Consent Decree, as modified by a 2010 agreement between CRRM, Coffeyville Resources Terminal, LLC (“CRT”), the EPA, and the KDHE, to establish financial assurance to secure the current projected clean-up cost for the now-closed Phillipsburg terminal. This financial assurance is currently provided by a bond in the amount of \$2 million. The \$2 million bond amount is reduced each year based on actual expenditures for corrective actions. Additional financial assurance of approximately \$4 million and \$3 million is required to meet our RCRA financial obligations for the Coffeyville Refinery and Phillipsburg terminal, respectively. Current RCRA financial assurance requirements for the Wynnewood Refinery includes less than \$1 million for hazardous waste storage tank closure. Beginning in 2023, ODEQ will require financial assurance in the amount of \$3 million for the post-closure monitoring of a closed storm water retention pond and the projected clean-up costs at the Wynnewood Refinery. These RCRA financial assurance obligations are currently being satisfied by a surety bond. The Company’s financial assurance mechanisms are re-evaluated and adjusted on an annual basis.

Waste Management - There are fourteen closed hazardous waste units at the Coffeyville Refinery. There is one closed hazardous waste unit and one active hazardous waste storage tank at the Wynnewood Refinery. In addition, 30 years of long-term post-closure care was completed at one closed, interim status, hazardous waste landfarm located at the now-closed Phillipsburg terminal and is no longer subject to monitoring.

Environmental Remediation

As is the case with all companies engaged in similar industries, we face potential exposure from claims and lawsuits involving environmental matters, including soil and water contamination and personal injury or property damage allegedly caused by crude oil or hazardous substances that we processed, handled, used, stored, transported, spilled, disposed of, or released. There is no assurance that we will not become involved in future proceedings related to the release of hazardous or extremely hazardous substances or crude oil for which we have potential liability or that, if we were held responsible for damages in any existing or future proceedings, such costs would be covered by insurance or would not be material.

Environmental Insurance

We are covered by a site pollution legal liability insurance policies, which include business interruption coverage. The policies insure any location owned, leased, rented, or operated by the Company, including the Refineries and the Facilities. The

policies insure certain pollution conditions at or migrating from a covered location, certain waste transportation and disposal activities, and business interruption.

In addition to the site pollution legal liability insurance policy, we maintain umbrella and excess casualty insurance policies which include sudden and accidental pollution coverage. This insurance provides coverage due to named perils for claims involving pollutants where the discharge is sudden and accidental and first commences at a specific day and time during the policy period.

The site pollution legal liability policy and the pollution coverage provided in the casualty insurance policies are subject to retentions and deductibles and contain discovery requirements, reporting requirements, exclusions, definitions, conditions, and limitations that could apply to a particular pollution claim, and there can be no assurance such claim will be adequately insured for all potential damages.

Health, Safety and Security Matters

We are subject to a number of federal and state laws and regulations related to safety, including the Occupational Safety and Health Act, which created the Occupational Safety and Health Administration (“OSHA”) and comparable state statutes, the purposes of which are to protect the health and safety of workers. We are also subject to OSHA Process Safety Management regulations, which are designed to prevent or minimize the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals. We are committed to safe, reliable operations of our facilities to protect the health and safety of our employees, our contractors, and the communities in which we operate. Our health and safety management system provides a comprehensive approach to injury, illness and incident prevention, risk assessment and mitigation, and emergency management. Despite our efforts to achieve excellence in our health and safety performance, there can be no assurances that there will not be accidents resulting in injuries or even fatalities. We periodically audit our programs and seek to continually improve our management systems.

Our Refineries and Facilities are subject to the Chemical Facility Anti-Terrorism Standards (“CFATS”), a regulatory program designed to ensure facilities have security measures in place to reduce the risk that certain hazardous chemicals are weaponized by terrorists. In addition, the East Dubuque Fertilizer Facility is regulated under the Maritime Transportation Security Act (the “MTSA”). We implement and maintain comprehensive security programs designed to comply with regulatory requirements and protect our assets and employees.

We periodically assess risk and conduct audits of our programs and seek to continually improve our health, safety, and security management systems.

Human Capital

Core Values

At CVR Energy, our core Values define the way we do business every day. We put Safety first, care for our Environment and require high business ethics and Integrity consistent with our Code of Ethics and Business Conduct. We are proud members of and good neighbors to the communities where we operate, and are committed to Corporate Citizenship. We believe in Continuous Improvement for individuals to achieve their maximum potential through teamwork, diversity and personal development. Our employees provide the energy behind our core Values to achieve excellence for all our key stakeholders – employees, communities and stockholders. See “Management’s Discussion and Analysis” in Part II, Item 7 of this Report for further discussion on our core Values.

Workforce & Benefits

As of December 31, 2022, CVR Energy had 1,470 employees, all of which are located in the United States. Of these, 589 employees are covered by collective bargaining agreements with various labor unions. We may engage independent contractors from time to time based on our business needs.

We believe that our future success largely depends upon our continued ability to attract and retain highly skilled employees. We are committed to providing wages and benefits that are competitive with a market-based, pay-for-performance compensation philosophy. We provide paid time off and paid holidays, a 401(k) Company match program, a remote work

program for eligible employees, dependent care flexible spending accounts, and an employee assistance program. In furtherance of our core Value of continuous improvement, we also offer programs for tuition reimbursement and dependent scholarships. We also offer a remote work policy for eligible employees to provide our employees with the flexibility that is key to a work-life balance. We encourage all employees to live our core Value of corporate citizenship by making a positive impact in our communities by taking advantage of our volunteerism policy pursuant to which eligible employees are provided paid time off from work to volunteer at 501(c)(3) non-profit entities.

Diversity & Inclusion

We are an equal opportunity employer and strive to maintain a diverse and inclusive work environment free from harassment and discrimination regardless of race, religion, color, age, gender, disability, minority, sexual orientation or any other protected class. Our commitment to diversity and inclusion helps us attract and retain the best talent, enables employees to realize their full potential, and drives high performance through innovation and collaboration. We offer diversity training that focuses on unconscious bias where employees learn to recognize and address the effects thereof by encouraging diversity of experience and opinion. Also, our Diversity & Inclusion Committee fosters innovative actions and promotes inclusiveness throughout our organization.

Health & Safety

We have an unwavering commitment to providing as safe and healthy of a workplace as possible for all employees. We accomplish this through strict compliance with applicable laws and regulations regarding workplace safety, engaging employee input, and maintaining robust training and emergency response and disaster recovery plans. We monitor and assess our safety performance by measuring and evaluating injuries, process safety incidents, environmental events, and other events, as well as by performing compliance audits and risk assessments. We believe these efforts reinforce our safety culture; promote a safe workplace, accountability, and stronger community relations; and reduce impact to personal safety, process safety, and the environment.

Available Information

Our website address is www.CVREnergy.com. Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and all amendments to those reports, filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, are available free of charge through our website under “Investor Relations,” as soon as reasonably practicable after the electronic filing or furnishing of these reports is made with the Securities and Exchange Commission (the “SEC”) at www.sec.gov. In addition, our Corporate Governance Guidelines, Codes of Ethics and Business Conduct, and the charters of the Audit Committee, the Nominating and Corporate Governance Committee, the Compensation Committee, and the Environmental, Health and Safety Committee of the Board of Directors are available on our website. These guidelines, policies, and charters are also available in print without charge to any stockholder requesting them. Information on our website is not a part of, and is not incorporated into, this Report or any other report we may file with or furnish to the SEC, whether before or after the date of this Report and irrespective of any general incorporation language therein.

Item 1A. Risk Factors

Risk Factors

The following risks should be considered together with the other information contained in this Report and all of the information set forth in our filings with the SEC. If any of the following risks or uncertainties develops into actual events, our petroleum and/or nitrogen fertilizer businesses, financial conditions, or results of operations could be materially adversely affected. References to “CVR Energy”, the “Company”, “we”, “us”, and “our” may refer to consolidated subsidiaries of CVR Energy, including CVR Partners, as the context may require.

Risks Related to Our Entire Business

Certain developments in the global oil markets have had, and may continue to have, material adverse impacts on the operations, business, financial condition, liquidity, and results of operations of the Company or its customers, suppliers, and other counterparties.

Although there has been discussions among members of OPEC+ to stabilize oil prices, declines in the market prices of crude oil and certain other petroleum products below the carrying cost of such commodities in the Company’s inventory have required, and may continue to require, the Company to adjust the value of, and record a loss on, certain inventories, which has had, and may continue to have a negative impact on our operating income; adversely impact our ability to profitably operate our facilities, and our results of operations, such as revenues and cost of sales; could result in significant financial constraints on certain producers from which we acquire our crude oil; and could result in an increased risk that customers, lenders, and other counterparties may be unable to fulfill their obligations in a timely manner, or at all. Further, if general economic conditions continue to remain uncertain for an extended period of time, our liquidity and ability to repay our outstanding debt may be harmed and the trading price of our common stock, which has seen recent volatility, may decline.

Our petroleum and nitrogen fertilizer businesses are, and commodity prices are, cyclical and highly volatile, which could have a material adverse effect on our results of operations, financial condition and cash flows.

Our Petroleum Segment’s financial results are primarily affected by margin between refined product prices and prices for crude oil and other feedstocks. Historically, refining margins have been volatile and vary by region, and we believe they will continue to be volatile in the future. Our cost to acquire feedstocks and the price at which we can ultimately sell refined products depend upon several factors beyond our control, including regional and global supply of and demand for crude oil, gasoline, diesel, and other feedstocks and refined products. These in turn depend on, among other things, the availability and quantity of imports, the production levels of U.S. and international suppliers, levels of refined petroleum product inventories, productivity and growth (or the lack thereof) of U.S. and global economies, U.S. relationships with foreign governments, political affairs, and the extent of governmental regulation. Profitability of some of our products, like renewable diesel, are also dependent upon government subsidies including carbon and tax credits, which may be reduced or eliminated.

We do not produce crude oil and must purchase all of the crude oil we refine long before we refine it and sell the refined products to our customers. Price level changes during the period between purchasing feedstocks and selling the refined petroleum products from these feedstocks could have a significant effect on our financial results. A decline in market prices in these feedstocks may negatively impact the carrying value of our inventories. Price level changes during the period between purchasing feedstocks and selling the refined petroleum products from these feedstocks could have a significant effect on our financial results. A decline in market prices in these feedstocks may negatively impact the carrying value of our inventories. Our Petroleum Segment profitability is also impacted by the ability to purchase crude oil at a discount to benchmark crude oils, such as WTI. Crude oil differentials can fluctuate significantly based upon overall economic and crude oil market conditions. Adverse changes in crude oil differentials can adversely impact our refining margins, earnings and cash flows. In addition, the Petroleum Segment’s purchases of crude oil, although based on WTI prices, have historically been at a discount to WTI because of the proximity of the Refineries to the sources, existing logistics infrastructure, and quality differences. Any changes to these factors could result in a reduction of the discount to WTI and may result in a reduction of the Petroleum Segment’s cost advantage.

Our Nitrogen Fertilizer Segment is exposed to fluctuations in nitrogen fertilizer demand in the agricultural industry. These fluctuations historically have had, and could in the future have, significant effects on prices across all nitrogen fertilizer products and, in turn, our results of operations, financial condition and cash flows. Nitrogen fertilizer products are commodities,

the price of which can be highly volatile. The prices of nitrogen fertilizer products depend on a number of factors, including general economic conditions, cyclical trends in end-user markets, supply and demand imbalances, governmental policies, and weather conditions, which have a greater relevance because of the seasonal nature of fertilizer application. If seasonal demand exceeds the projections on which we base our production levels, customers may acquire nitrogen fertilizer products from competitors, and our profitability may be negatively impacted. If seasonal demand is less than expected, we may be left with excess inventory that will have to be stored or liquidated.

The international market for nitrogen fertilizers is influenced by such factors as the relative value of the U.S. dollar and its impact upon the cost of importing nitrogen fertilizers, foreign agricultural policies, the existence of, or changes in, import or foreign currency exchange barriers in certain foreign markets, changes in the hard currency demands of certain countries, and other regulatory policies of foreign governments, as well as the laws and policies of the U.S. affecting foreign trade and investment. Supply is affected by available capacity and operating rates, raw material costs, government policies, and global trade. A decrease in nitrogen fertilizer prices would have a material adverse effect on our nitrogen fertilizer business and cash flow, including CVR Partners' ability to make distributions.

Petroleum and nitrogen fertilizer businesses face intense competition.

The refining industry is highly competitive with respect to both crude oil and other feedstock supply and refined petroleum product markets. We compete with many companies for available supplies of crude oil and other feedstocks and for sites for our refined petroleum products. Our Petroleum Segment may be unable to compete effectively with competitors within and outside of the industry, which could result in reduced profitability. In contrast to many of our competitors, we do not have a retail business and therefore are dependent upon others for outlets for our refined products, and we do not have arrangements exceeding a twelve-month period for much of our petroleum output and thus cannot offset losses from refining operations with profits from retail operations and may be less able to withstand periods of depressed refining margins or feedstock shortages. Some of our competitors also have materially greater financial and other resources than us and a greater ability to bear the economic risks inherent in our industry. In addition, our Petroleum Segment competes with other industries that provide alternative means to satisfy the energy and fuel requirements of its industrial, commercial, and individual customers. There are presently significant governmental incentives and consumer pressures to increase the use of alternative fuels in the United States. The more successful these alternatives become as a result of governmental incentives or regulations, technological advances, consumer demand, improved pricing, or otherwise, the greater the negative impact on pricing and demand for our products and profitability.

Our renewables business faces competition from other renewable fuel producers. In recent years, there has been an increase in renewable fuel capacity and production as new renewables projects have come online, which impacts the prices at which we are able to sell renewable fuel. With an increase in renewable fuel projects in recent years, we also face competition for renewable feedstocks. The prices at which we sell renewable fuel and buy renewable feedstock are therefore volatile and beyond our control and could adversely affect our renewables margin and results.

Our Nitrogen Fertilizer Segment is subject to intense price competition from both U.S. and foreign sources. With little or no product differentiation, customers make their purchasing decisions principally on the basis of delivered price and availability of the product. Increased global supply or decreases in transportation costs for foreign sources of fertilizer may put downward pressure on fertilizer prices. We compete with a number of U.S. producers and producers in other countries, including state-owned and government-subsidized entities that may have greater total resources and are less dependent on earnings from fertilizer sales, which make them less vulnerable to industry downturns and better positioned to pursue new expansion and development opportunities. In addition, imports of fertilizer from other countries may be unfairly subsidized, as was found to be the case on November 30, 2021 by the U.S. Department of Commerce (the "USDOC") with respect to UAN imports from Russia and Trinidad. An inability to compete successfully could result in a loss of customers, which could adversely affect our sales, profitability, and cash flows, and therefore, have a material adverse effect on our results of operations and financial condition.

Our businesses are geographically concentrated, creating exposure to regional economic downturns and seasonal variations, which may affect our production levels, transportation costs, and inventory and working capital levels.

Our Refineries are both located in the southern portion of Group 3 of the PADD II region, and we primarily market refined products in a relatively limited geographic area. As a result, our Petroleum Segment is more susceptible to regional economic conditions than the operations of more geographically diversified competitors, and any unforeseen circumstances that affect our

operating area could also materially adversely affect our revenues and cash flows. These factors include, among other things, changes in the economy, weather conditions, demographics and population, increased supply of refined products from competitors, and reductions in the supply of crude oil. In addition, if we deliver refined products to customers outside of the region, we may incur considerably higher transportation costs, resulting in lower refining margins, if any.

Our Nitrogen Fertilizer Segment's sales to agricultural customers are concentrated in the Great Plains and Midwest states, and nitrogen fertilizer demand is seasonal. Our quarterly results may vary significantly from one year to the next due to weather-related shifts in planting schedules and purchase patterns. Because we build inventory during low demand periods, the accumulation of inventory to be available for seasonal sales creates significant seasonal working capital and storage capacity requirements. The degree of seasonality can change significantly from year-to-year due to conditions in the agricultural industry and other factors. As a consequence of this seasonality, distributions by our Nitrogen Fertilizer Segment of available cash, if any, may be volatile and may vary quarterly and annually.

Public health crises such as the COVID-19 pandemic have had, and may continue to have, adverse impacts on our business, financial condition, results of operations, and liquidity.

The economic effects from the COVID-19 pandemic on our business were and may again be significant. Although there has been a recovery since the onset of the pandemic in March 2020, there continues to be uncertainty and unpredictability about the lingering impacts to the worldwide economy that could negatively affect our business, financial condition, results of operations, and liquidity in future periods. The extent to which the pandemic and its effects may adversely impact our future business, financial, and operating results, and for what duration and magnitude, depends on factors that are continuing to evolve, are difficult to predict and, in many instances, are beyond our control. The ultimate outcome of these and other factors may result in many adverse consequences including, but not limited to, reduced availability of critical staff, disruption or delays to supply chains for critical equipment or feedstock, inflation, increased interest rates, reduced economic activity that negatively impacts demand for our products, and increased administrative, compliance, and operational costs. In addition, future public health crises could also result in significant economic disruption and other effects that adversely impact our business, financial condition, results of operations, and liquidity in future periods in ways similar to the COVID-19 pandemic. The adverse impacts of the COVID-19 pandemic had, and may continue to have, the effect of precipitating or heightening many of the other risks described in this section.

Both the Petroleum and Nitrogen Fertilizer Segments depend on significant customers, the loss of which may have a material adverse impact on our results of operations, financial condition and cash flows.

The Petroleum and Nitrogen Fertilizer Segments both have a significant concentration of customers. The two largest customers of our Petroleum Segment represented 25% of its net sales for the year ended December 31, 2022. The two largest customers of the Nitrogen Fertilizer Segment represented approximately 30% of its net sales for the same period. Given the nature of our businesses, and consistent with industry practice, we do not have long-term minimum purchase contracts with our customers. The loss of one or more of these significant customers, or a significant reduction in purchase volume by any of them, for any reason including, but not limited to, a desire to purchase competing products with lower emissions, could have a material adverse effect on our results of operations, financial condition and cash flows.

If licensed technology were no longer available, our business may be adversely affected.

We have licensed, and may in the future license, a combination of patent, trade secret, and other intellectual property rights of third parties for use in our plant operations. If our use of technology on which our operations rely were to be terminated or face infringement claims, licenses to alternative technology may not be available, may only be available on terms that are not commercially reasonable or acceptable, or in the case of infringement may result in substantial costs, all of which could have a material adverse effect on our results of operations, financial condition and cash flows.

Compliance with and changes in environmental laws and regulations, including those related to climate change and the ongoing "energy transition," could result in increased operating costs and capital expenditures and changes in demand for the products we produce.

Our operations are subject to extensive federal, state, and local environmental laws and regulations relating to the protection of the environment, including those governing the emission or discharge of pollutants into the environment, climate change and the ongoing energy transition, product use and specifications, and the generation, treatment, storage, transportation,

disposal, and remediation of solid and hazardous wastes. Violations of applicable environmental laws and regulations or of the conditions of permits issued thereunder can result in substantial penalties, injunctive orders compelling installation of additional controls or other injunctive relief, civil and criminal sanctions, operating restrictions, permit revocations, and/or facility shutdowns, which may have a material adverse effect on our ability to operate our facilities and accordingly our financial performance.

In addition, new environmental laws and regulations, including as a result of climate change and the ongoing energy transition efforts, new interpretations of existing laws and regulations, or increased governmental enforcement of laws and regulations, could require us to make additional unforeseen expenditures. It is unclear the impact the Biden Administration will have on the laws and regulations applicable to us, however, measures to address climate change and reduce GHG emissions (including carbon dioxide, methane, and nitrous oxides) are in various phases of discussion or implementation and could affect our operations by requiring increased operating and capital costs and/or increasing taxes on GHG emissions. There also have been international efforts seeking legally binding reductions in GHG emissions.

More aggressive efforts by governments and non-governmental organizations to put in place laws requiring or otherwise driving reductions in GHG emissions appear likely and any such future laws and regulations could result in increased compliance costs or additional operating restrictions applicable to our customers and/or us, and any increase in the prices of refined products resulting from such increased costs, GHG cap-and-trade programs or taxes on GHGs, could result in reduced demand for our refined petroleum products. For example, in August 2022, President Biden signed into law the Inflation Reduction Act of 2022 (the “Inflation Reduction Act”), which imposes a charge on methane emissions from certain petroleum system facilities and could have an indirect impact on demand for the goods and services of our Petroleum Segment. Our business could also be impacted by governmental initiatives to incentivize the conservation of energy or the use of alternative energy sources. These initiatives to reduce energy consumption or incentivize a shift away from fossil fuels could reduce demand for hydrocarbons, thereby reducing demand for the products of our Petroleum Segment, and adversely impact our business, financial condition, results of operations and cash flows.

There is also increased agency interest in polyfluoroalkyl substances or PFAS. In September 2022, the EPA proposed to designate two PFAS compounds as hazardous substances. If PFAS compounds are designated as hazardous substances, the EPA and states could have the ability to order remediation of those compounds and cost recovery at clean-up sites. The EPA and states could also have the authority to reopen closed sites which are shown to be impacted by these PFAS compounds. This could lead to increased monitoring obligations and potential liability related thereto. If we are unable to maintain sales of our products at a price that reflects such increased costs, or could result in reduced demand for our fertilizer and hydrocarbon products, there could be a material adverse effect on our business, financial condition and results of operations.

Our facilities face significant risks due to physical damage hazards, environmental liability risk exposure, and unplanned or emergency partial or total plant shutdowns which could cause property damage and a material decline in production which may not be fully insured.

If any of our facilities, logistics assets, or key suppliers sustain a catastrophic loss and operations are shutdown or significantly impaired, it would have a material adverse impact on our operations, financial condition and cash flows. Examples of unforeseen events and circumstances, which may not be within our control, include: (i) major unplanned maintenance requirements; (ii) catastrophic events caused by mechanical breakdown, electrical injury, pressure vessel rupture, explosion, contamination, fire, or natural disasters, including floods, windstorms, and other similar events; (iii) labor supply shortages or labor difficulties that result in a work stoppage or slowdown; (iv) cessation or suspension of a plant or specific operations dictated by environmental authorities; (v) acts of terrorism or other deliberate malicious acts; and (vi) an event or incident involving a large clean-up, decontamination, or the imposition of laws and ordinances regulating the cost and schedule of demolition or reconstruction, which can cause significant delays in restoring property to its pre-loss condition.

We are insured under casualty, environmental, property, and business interruption insurance policies. The property and business interruption policies insure our real and personal property. These policies are subject to limits, sub-limits, retention (financial and time-based), and deductibles. The application of these and other policy conditions could materially impact insurance recoveries and potentially cause us to assume losses which could impair earnings. There is potential for a common occurrence to impact both our Coffeyville Refinery and Coffeyville Fertilizer Facility, in which case the insurance limits and applicable sub-limits would apply to all damages combined.

There is finite capacity in the commercial insurance industry engaged in underwriting energy industry risk, and factors impacting cost and availability include: (i) losses in our industries, (ii) natural disasters (which could be exacerbated by climate change), (iii) specific losses incurred by us, and (iv) inadequate investment returns earned by the insurance industry. If the supply of commercial insurance is curtailed or if commercial insurance companies decline to underwrite companies in the energy industry, we may not be able to continue our present limits of insurance coverage or obtain sufficient insurance capacity to adequately insure our risks.

We could incur significant costs in cleaning up contamination at our facilities.

Our businesses handle petroleum and hazardous substances, and as a result, spills, discharges, or other releases of petroleum or hazardous substances into the environment may occur. Past or future spills related to any of our current or former operations and solid or hazardous waste disposal may give rise to liability (including for personal injury and property damage, penalties, strict liability and potential cleanup responsibility) to governmental entities or private parties under federal, state, or local environmental laws, as well as under common law. For example, we could be held strictly liable under CERCLA and similar state statutes for past or future spills without regard to fault or whether our actions were in compliance with the law at the time of the spills, including in connection with contamination associated with our current and former facilities, and facilities to which we transported or arranged for the transportation of wastes or byproducts containing hazardous substances for treatment, storage, or disposal. Such liability could have a material adverse effect on our results of operations, financial condition and cash flows and may not be covered by insurance.

Remedial activities to address known environmental contamination are underway at three of our facilities, including the Coffeyville Refinery, the now-closed Phillipsburg terminal (which operated as a refinery until 1991), and the Wynnewood Refinery. We also have assumed the previous owner's responsibilities under certain administrative orders under RCRA related to contamination at or that originated from the Coffeyville Refinery and the Phillipsburg terminal. We continue to work with the applicable governmental authorities to implement remediation of these three sites on a timely basis. As of December 31, 2022, we have established an accrual of approximately \$22 million for probable and reasonably estimable obligations associated with these sites.

Regulations concerning the transportation, storage, and handling of hazardous chemicals and materials, risks of terrorism, and the security of refineries and chemical manufacturing facilities could result in higher operating costs.

Our crude oil gathering division that operates as a motor carrier is subject to regulation by federal and various state agencies and possible regulatory and legislative changes that may affect the economics of the industry. Some of these possible changes include increasingly stringent fuel-economy environmental regulations, limits on vehicle weight and size, and increases to federal, state or local taxes, including taxes on motor fuels, which may increase our costs or adversely impact the recruitment of drivers.

Critical infrastructure such as petroleum refining and chemical manufacturing facilities may be at greater risk of terrorist attacks than other businesses in the United States. As a result, the petroleum and chemical industries are subject to security regulations relating to physical and cyber security. The costs of compliance therewith may have a material adverse effect on our results of operations, financial condition and cash flows.

Adverse weather conditions or other unforeseen developments could damage our facilities or logistics assets and impair our ability to produce and deliver our refined petroleum or nitrogen fertilizer products.

The regions in which our facilities are located and in which our customers operate are susceptible to severe storms, including hurricanes, thunderstorms, tornadoes, floods, extended periods of rain, ice storms and snow, some of which we or our customers have experienced in recent years. Such inclement weather conditions or other unforeseen developments could damage our facilities or logistics assets. If such weather conditions prevail near our facilities or logistics assets, they could interrupt or undermine our ability to produce and transport products or to manage our business. Regional occurrences, such as energy shortages or increases in commodity prices, and natural disasters, could also have a material adverse effect on our business, financial condition and results of operations. The physical effects of adverse weather conditions have the potential to directly affect our operations and result in increased costs related to our operations. Since climate change may change weather patterns and the severity of weather events, any such changes could consequently materially adversely affect our revenues and cash flows and the demand for our products by our customers. However, because the nature and timing of changes in extreme

weather events (such as increased frequency, duration, and severity) are uncertain, it is not possible for us to estimate reliably the future financial risk to our operations caused by these potential physical risks.

If our access to transportation on which we rely for the supply of our feedstocks and the distribution of our products is interrupted, our inventory and costs may increase and we may be unable to efficiently distribute our products.

If one of the pipelines on which either of the Refineries relies for supply of crude oil or for distribution of fuel becomes inoperative, the Petroleum Segment would be required to use alternative pipelines or other transportation methods or increase inventory, which could increase its costs and result in lower production levels and profitability. Our Nitrogen Fertilizer business relies on railroad, trucking and barge companies to ship finished products to customers. Factors that could negatively impact transportation availability and have a material adverse effect on our results of operations, financial condition and ability to pay dividends include extreme weather conditions, work stoppages, delays, spills, and derailments, new regulations restricting movements or increasing costs. The limited number of companies available for ammonia transport may also impact the availability of transportation for our Nitrogen Fertilizer Segment's products.

We may be unable to obtain or renew permits or approvals necessary for our operations, which could inhibit our ability to do business.

Our businesses hold numerous environmental and other governmental permits and approvals authorizing operations at our facilities and future expansion of our operations is predicated upon the ability to secure approvals therefore. A decision by a government agency to deny or delay issuing a new or renewed material permit or approval, or to revoke or substantially modify an existing permit or approval, could have a material adverse effect on our ability to continue operations and on our financial condition, results of operations and cash flows.

We are subject to strict laws and regulations regarding employee and process safety, and failure to comply with these laws and regulations could have a material adverse effect on our results of operations, financial condition and profitability.

We are subject to the requirements of OSHA and comparable state statutes that regulate the protection of the health and safety of workers, the proper design, operation, and maintenance of our equipment, and require us to provide information about hazardous materials used in our operations. Failure to comply with these requirements may result in significant fines or compliance costs, which could have a material adverse effect on our results of operations, financial condition and cash flows.

A portion of our workforce is unionized, and we are subject to the risk of labor disputes, slowdowns or strikes, which may disrupt our business and increase our costs.

As of December 31, 2022, approximately 43% and 29% of our Petroleum and Nitrogen Fertilizer Segment employees, respectively, were represented by labor unions under collective bargaining agreements. We may not be able to renegotiate our collective bargaining agreements when they expire on satisfactory terms or at all. A failure to do so may increase our costs. In addition, our existing labor agreements may not prevent a strike or work stoppage at any of our facilities in the future, and any work stoppage could negatively affect our results of operations, financial condition and cash flows.

In addition, there continues to be a tight labor market. Increases in remote work opportunities have also amplified the competition for employees and contractors. An inability to recruit, train, and retain adequate personnel, or the loss or departure of personnel with key skills or deep institutional knowledge for whom we are unable to find adequate replacements, may negatively impact our business. Inflation has also caused and may in the future cause increases in employee-related costs, both due to higher wages and other compensation.

We are subject to cybersecurity risks and may experience cyber incidents resulting in disruption to our businesses.

We depend on internal and third-party information technology systems to manage and support our operations, and we collect, process, and retain sensitive and confidential customer information in the normal course of business. To protect our facilities and systems against and mitigate cyber risk, we have implemented several programs including externally performed cyber risk monitoring, audits and penetration testing and an information security training program, and we are actively engaged in evaluating the implementation of applicable Cybersecurity and Infrastructure Security Agency security standard guidelines. On an as needed basis, but no less than quarterly, we brief the Audit Committee of the Board on information security matters. Despite these measures (or those we may implement in the future), our facilities and these systems could be vulnerable to

security breaches, computer viruses, lost or misplaced data, programming errors, human errors, acts of vandalism, or other events. A breach could also originate from or compromise third-party networks outside of our control that could impact our business and operations. Although we implement controls on third-party connectivity to our systems, we have limited control in ensuring their systems consistently enforce strong cybersecurity controls. Any disruption of these systems or security breach or event resulting in the misappropriation, loss or other unauthorized disclosure of confidential information, whether by us directly or our third-party service providers, could damage our reputation, expose us to the risks of litigation and liability, disrupt our business, or otherwise affect our results of operations.

An increase in inflation could have adverse effects on our results of operations.

Inflation in the United States increased beginning in the second half of 2021 and has continued into 2023, due to a substantial increase in money supply, a stimulative fiscal policy, a significant rebound in consumer demand as COVID-19 restrictions were relaxed, the Russia-Ukraine conflict, and worldwide supply chain disruptions resulting from the economic contraction caused by COVID-19 and lockdowns followed by a rapid recovery. Inflation rose from 5.4% in June 2021 to 7.0% in December 2021 to 8.2% in September 2022. As of December 31, 2022, inflation was at 6.5%. An increase in inflation rates could negatively affect our profitability and cash flows, due to higher wages, higher operating costs, higher financing costs, and/or higher supplier prices. We may be unable to pass along such higher costs to our customers. In addition, inflation may adversely affect our customers' financing costs, cash flows, and profitability, which could adversely impact their operations and our ability to offer credit and collect receivables.

Risks Related to the Petroleum Segment

If our Petroleum Segment is required to obtain its crude oil supply without the benefit of a crude oil supply agreement and significant crude oil gathering in the regions in which we operate, our exposure to the risks associated with volatile crude oil prices may increase, crude oil transportation costs could increase and our liquidity may be reduced.

Our Petroleum Segment obtains substantially all of its crude oil supply through crude oil gathering operations in Kansas and Oklahoma or through the crude oil intermediation agreement with Vitol Inc. The agreement, which currently extends through December 31, 2023, minimizes the amount of in-transit inventory and mitigates crude oil pricing risk by ensuring pricing takes place close to the time the crude oil is refined and the yielded products are sold. If we were required to obtain our crude oil supply without the benefit of crude oil located near the Refineries or through a supply intermediation agreement, our Petroleum Segment's exposure to crude oil pricing risk may increase, despite any hedging activity in which we engage (such as futures and swaps), crude oil transportation costs could increase and our liquidity could be negatively impacted due to increased inventory, potential need to post letters of credit, and negative impacts of market volatility. There is no assurance that our crude oil gathering operations will remain at current levels or that we will be able to renew or extend the Vitol agreement beyond December 31, 2023. Crude oil production disruptions could have a material impact on the Petroleum Segment because in such an event, we may be unable to obtain an adequate supply of crude oil, or we may only be able to obtain crude oil at unfavorable prices and we may experience a reduction in liquidity and our results of operations could be materially adversely affected.

Compliance with the Renewable Fuel Standard ("RFS") could have a material adverse effect on our business, financial condition and results of operations.

The EPA has promulgated and implemented the RFS pursuant to the Energy Policy Act of 2005 and the EISA. Under the RFS program, a RIN is assigned to each gallon of renewable fuel produced in or imported into the United States. The RFS program sets annual mandates for the volume of renewable fuels (such as ethanol and biodiesel) that must be blended into a refiner's transportation fuels. If a refiner of petroleum-based transportation fuels is unable to meet its renewable fuel mandate through blending and is not otherwise exempt from compliance, it must purchase RINs in the open market to meet its obligations under the RFS program.

Our Petroleum Segment's obligated-party subsidiaries are exposed to the volatility in the market price of RINs, which can be extreme. We cannot predict the future prices of RINs. RIN prices are dependent upon a variety of factors, including EPA regulations, the availability of RINs for purchase, levels of transportation fuels produced, the mix of the petroleum business' petroleum products, our purchasing as well as the fuel blending performed at the Refineries and downstream terminals, all of which can vary significantly from period to period. RIN prices may also be impacted by the timing and content of the EPA's actions or inactions relating to the RFS and communications relating thereto, as well as the actions of market participants, such as non-obligated parties. We may also be adversely impacted by the timing by which we purchase RINs, either ratably or at all.

Also, we believe WRC, as a small refinery, should be entitled to exemptions from the RFS, and we may carry a RIN deficit while we pursue such exemptions in court. If sufficient RINs are unavailable for purchase, if the Petroleum Segment has to pay a significantly higher price for RINs, if our legal actions relating to WRC's small refinery exemptions are not decided in our favor, or if our obligated-party subsidiaries are otherwise unable to meet the EPA's RFS mandates or is unable to participate in programs or receive exemptions relieving compliance with RFS obligations, our business, financial condition and results of operations could be materially adversely affected.

Changes in our credit profile may affect our relationship with our suppliers, which could have a material adverse effect on our liquidity and ability to operate the Refineries at full capacity.

Changes in our credit profile may affect the way crude oil suppliers view our ability to make payments and may induce them to shorten the payment terms for purchases or require us to post security. Given the large dollar amounts and volume of our crude oil and other feedstock purchases, a burdensome change in payment terms may have a material adverse effect on liquidity and our ability to make payments to suppliers. This, in turn, could cause us to be unable to operate the Refineries at full capacity. A failure to operate at full capacity could adversely affect our profitability and cash flows.

The Petroleum Segment's commodity derivative contracts may limit potential gains, exacerbate potential losses, and involve other risks.

We may enter into both short- and long-term commodity derivatives contracts to mitigate crack spread risk with respect to a portion of expected refined products production. However, hedging arrangements, if we are able to procure them, may fail to fully achieve this objective for a variety of reasons, including its failure to have adequate hedging contracts, if any, in effect at any particular time and the failure of hedging arrangements to produce the anticipated results. Moreover, such transactions may limit our ability to benefit from favorable changes in margins. In addition, our hedging activities may expose us to the risk of financial loss in certain circumstances, including instances in which the volumes of our actual use of crude oil or production of the applicable refined products is less than the volumes subject to the hedging arrangement; accidents, interruptions in transportation, inclement weather, or other events cause unscheduled shutdowns or otherwise adversely affect a refinery, suppliers, or customers; the counterparties to our futures contracts fail to perform under the contracts; or a sudden, unexpected event materially impacts the commodity or crack spread subject to the hedging arrangement. As a result, the effectiveness of our risk mitigation strategy could have a material adverse impact on our financial results and cash flows.

If we are unable to complete capital projects at their expected costs and/or in a timely manner, or if the market conditions assumed in project economics deteriorate, our financial condition, results of operations or cash flows could be adversely affected.

Equipment, even when properly maintained, may require significant capital expenditures and expenses to keep operating at optimum efficiency. Our facilities and equipment have been in operation for many years and may be subject to unscheduled downtime for unanticipated maintenance or repairs that are more frequent than our planned turnaround for facilities and equipment. In addition, our planned turnarounds for facilities and equipment reduce our revenues during the period of time that such assets are not operating and may take longer than anticipated to complete. Delays or cost increases beyond our control related to the engineering and construction of new facilities or improvements and repairs to existing facilities and equipment caused by delays in or denials of permits, disruptions to transportation, labor disagreements resulting in work stoppage, non-performance of vendors, or increases in financing costs, could have a significant impact on our petroleum business. If we are unable to make up for the delays or to recover the related costs, or if market conditions change, we could materially and adversely affect our financial condition, results of operations or cash flows.

One of the ways we may grow our business is through the conversion or expansion of our existing facilities, such as the conversion of the Wynnewood Refinery's hydrocracker to an RDU and the conversion of a hydrotreater to renewable diesel service at the Coffeyville Refinery. If we are unable to complete capital projects at their expected costs or in a timely manner, our financial condition, results of operations, or cash flows could be materially and adversely affected. Delays in making required changes or upgrades to our facilities could subject us to fines or penalties and also affect our ability to supply certain products we make. Moreover, we may construct facilities to capture anticipated future growth in demand for refined products or renewable diesel in a region in which such growth does not materialize, and our revenue may not increase immediately upon the expend of funds on a particular project. In addition, the long-term success of our Petroleum Segment depends on our ability to effectively address energy transition matters, which will require that we continue to adapt our existing facilities to potentially

changing government requirements, among other things. As a result, new capital investments may not achieve our expected investment return, which could materially and adversely affect our financial position, results of operations or cash flows.

Investor and market sentiment towards climate change, fossil fuels, GHG emissions, environmental justice, and other Environmental, Social and Governance (“ESG”) matters could adversely affect our business, cost of capital, and the price of our common stock and debt securities.

There have been efforts in recent years aimed at the investment community, including investment advisors, sovereign wealth funds, public pension funds, universities, and other groups, to promote the divestment of securities of companies in the energy industry, as well as to pressure lenders and other financial services companies to limit or curtail activities with companies in the energy industry. As a result, some financial intermediaries, investors, and other capital markets participants have reduced or ceased lending to, or investing in, companies that operate in industries with higher perceived environmental exposure, such as the energy industry. Pension funds at both the United States state and municipal level, as well other countries and jurisdictions across the world, particularly in Europe, have announced plans to divest holdings in companies engaged in fossil fuels activities. If these or similar divestment efforts are continued, the price of our common stock or debt securities, and our ability to access capital markets or to otherwise obtain new investment or financing, may be negatively impacted.

Members of the investment community are also increasing their focus on ESG practices and disclosures, including those related to climate change, GHG emissions targets, business resilience under demand-constraint scenarios, and net-zero ambitions in the energy industry in particular, and diversity, equity, and inclusion initiatives, political activities, and governance standards among companies more generally. As a result, we may face negative publicity, increasing pressure regarding our ESG practices and disclosures, and demands for ESG-focused engagement commenced by investors, stakeholders, and other interested parties. This could result in higher costs, disruption and diversion of management attention, an increased strain on company resources, and the implementation of certain ESG practices or disclosures that may present a heightened level of legal and regulatory risk, or that threaten our credibility with other investors and stakeholders. Investors, stakeholders, and other interested parties are also increasingly focusing on issues related to environmental justice. This may result in increased scrutiny, protests, and negative publicity with respect to our business and operations, and those of our counterparties, which could in turn result in the cancellation or delay of projects, the revocation of permits, termination of contracts, lawsuits, regulatory action, and policy change that may adversely affect our business strategy, increase our costs, and adversely affect our reputation and performance.

Additionally, members of the investment community may screen companies such as ours for ESG performance and climate-related practices to limit GHG emissions before investing in our common stock or debt securities, or lending to us. Credit ratings agencies are also increasingly using ESG as a factor in assigning their ratings, which could impact our cost of capital or access to financing. There has also been an acceleration in investor demand for ESG investing opportunities, and many institutional investors have committed to increasing the percentage of their portfolios that are allocated towards ESG-focused investments. As a result, there has been a proliferation of ESG-focused investment funds, and market participants seeking ESG-oriented investment products. There has also been an increase in third-party providers of company ESG ratings, and more ESG-focused voting policies among proxy advisory firms, portfolio managers and institutional investors. Some investors and stakeholders are also increasingly focused on pursuing strategies centered on ESG-related activism. In addition, such climate-related trends may lead to decreased demand for products that produce significant GHG emissions and increased demand for products that result in lower emissions than fossil fuel-based products, and our business could be adversely affected.

If we are unable to meet the ESG standards or investment, lending, ratings, or voting criteria and policies set by these parties, we may lose investors, investors may allocate a portion of their capital away from us, we may become a target for ESG-focused activism, our cost of capital may increase, the price of our securities may be negatively impacted, and our reputation may also be negatively affected.

Risks Related to the Nitrogen Fertilizer Segment

Any decline in U.S. agricultural production or limitations on the use of nitrogen fertilizer for agricultural purposes could have a material adverse effect on the sales, and on our results of operations, financial condition and cash flows.

Conditions in the U.S. agricultural industry significantly impact our operating results. The U.S. agricultural industry can be affected by a number of factors, including weather patterns and field conditions, current and projected grain inventories and

prices, domestic and international population changes, demand for U.S. agricultural products, U.S., state and foreign policies regarding trade in agricultural products, and changes in governmental regulations and incentives for ethanol production that could affect future corn-based ethanol demand and production, including the RFS program. Developments in crop technology could also reduce the use of chemical fertilizers and adversely affect the demand for nitrogen fertilizer. All of the foregoing could have a material adverse effect on our results of operations, financial condition and cash flows.

Failure by our Coffeyville Refinery to continue to supply our Coffeyville Fertilizer Facility with pet coke could negatively impact the Nitrogen Fertilizer Segment's results of operations.

Unlike our competitors, whose primary costs are related to the purchase of natural gas and whose costs are therefore largely variable, our Coffeyville Fertilizer Facility uses a pet coke gasification process to produce nitrogen fertilizer. Our profitability is directly affected by the price and availability of pet coke obtained from our Coffeyville Refinery under the Coffeyville MSA. Our Coffeyville Fertilizer Facility obtained 47% of its pet coke from our Coffeyville Refinery in 2022. Should our Coffeyville Refinery fail to perform in accordance with the existing agreement or to the extent pet coke from the Coffeyville Refinery is insufficient, we would need to purchase pet coke from third parties on the open market, which could negatively impact our results of operations to the extent third-party pet coke is unavailable or available only at higher prices. Currently, we purchase 100% of the pet coke our Coffeyville Refinery produces. However, we are still required to procure additional pet coke at fixed prices from third parties to maintain our production rates. We have contracts for 233,500 tons of third-party supply of pet coke through December 2023.

The market for natural gas has been volatile, and fluctuations in natural gas prices could affect our competitive position.

Low natural gas prices benefit our competitors that rely on natural gas as their primary feedstock and disproportionately impact our operations at our Coffeyville Fertilizer Facility by making us less competitive with natural gas-based nitrogen fertilizer manufacturers. Low natural gas prices could result in nitrogen fertilizer pricing reductions and impair the ability of the Coffeyville Fertilizer Facility to compete with other nitrogen fertilizer producers who use natural gas as their primary feedstock, which, therefore, would have a material adverse impact on our results of operations, financial condition and ability to pay dividends.

The East Dubuque Fertilizer Facility uses natural gas as its primary feedstock, and as such, the profitability of operating the East Dubuque Fertilizer Facility is significantly dependent on the cost of natural gas. An increase in natural gas prices, without a corresponding increase to nitrogen fertilizer pricing, could make the East Dubuque Fertilizer Facility less competitive with producers who do not use natural gas as their primary feedstock. In addition, an increase in natural gas prices in the United States relative to prices of natural gas paid by foreign nitrogen fertilizer producers may negatively affect our competitive position in the corn belt, and such changes could have a material adverse effect on our results of operations, financial condition, and cash flows.

Any interruption in the supply of natural gas to our East Dubuque Fertilizer Facility could have a material adverse effect on our results of operations and financial condition.

Operations at our East Dubuque Fertilizer Facility depends on the availability of natural gas. We have two agreements for pipeline transportation of natural gas with expiration dates in 2023 and 2025. We typically purchase natural gas from third parties on a spot basis and, from time to time, may enter into fixed-price forward purchase contracts. Upon expiration of the agreements, we may be unable to extend the service under the terms of the existing agreements or renew the agreements on satisfactory terms, or at all, necessitating construction of a new connection that could be costly and disruptive. Any disruption in the supply of natural gas to our East Dubuque Facility could restrict our ability to continue to make products at the facility and have a material adverse effect on our results of operations and financial condition.

Our operations are dependent on third-party suppliers, which could have a material adverse effect on our results of operations, financial condition and cash flows.

Operations of our Coffeyville Fertilizer Facility depend in large part on the performance of third-party suppliers, including the adjacent third-party air separation plant and a third-party electric supplier. Our East Dubuque Fertilizer Facility operations also depend in large part on the performance of third-party suppliers, including for the purchase of electricity. Should these, or any of our other third-party suppliers fail to perform in accordance with existing contractual arrangements, or should we otherwise lose the service of any third-party suppliers, our operations (or a portion thereof) could be forced to halt. Alternative

sources of supply could be difficult to obtain. Any shutdown of our operations (or a portion thereof), even for a limited period, could have a material adverse effect on our results of operations, financial condition and ability to pay dividends.

Any liability for accidents involving ammonia or other products we produce or transport that cause severe damage to property or injury to the environment and human health could have a material adverse effect on our results of operations, financial condition and ability to pay dividends.

Our business manufactures, processes, stores, handles, distributes and transports ammonia, which can be very volatile and extremely hazardous. Major accidents or releases involving ammonia could cause severe damage or injury to property, the environment, and human health, as well as a possible disruption of supplies and markets. Such an event could result in civil lawsuits, fines, penalties and regulatory enforcement proceedings, all of which could lead to significant liabilities. Any damage or injury to persons, equipment or property or other disruption of our ability to produce or distribute products could result in a significant decrease in operating revenues and significant additional costs to replace or repair and insure our assets, which could have a material adverse effect on our results of operations, financial condition and ability to pay dividends.

In addition, we may incur significant losses or increased costs relating to the operation of railcars used for the purpose of carrying various products, including ammonia. Due to the dangerous and potentially hazardous nature of the cargo we carry, in particular ammonia, a railcar accident may result in fires, explosions, and releases of material which could lead to sudden, severe damage or injury to property, the environment, and human health. In the event of contamination, under environmental law, we may be held responsible even if we are not at fault, and we complied with the laws and regulations in effect at the time of the accident. Litigation arising from accidents involving ammonia and other products we produce or transport may result in us being named as a defendant in lawsuits asserting claims for substantial damages, which could have a material adverse effect on our results of operations, financial condition and ability to pay dividends.

Risks Related to Our Capital Structure

Instability and volatility in the capital, credit, and commodity markets in the global economy could negatively impact our business, financial condition, results of operations and cash flows.

Our business, financial condition and results of operations could be negatively impacted by difficult conditions and volatility in the capital, credit, and commodities markets and in the global economy. For example, there can be no assurance that funds under our credit facilities will be available or sufficient, and in such a case, we may not be able to successfully obtain additional financing on favorable terms, or at all; market volatility could exert downward pressure on the price of CVR Partners' common units, which may make it more difficult for us to raise additional capital and thereby limit its ability to grow, which could in turn cause CVR Energy's stock and/or CVR Partners' unit price to drop; or customers experiencing financial difficulties may fail to meet their financial obligations when due because of bankruptcy, lack of liquidity, operational failure, or other reasons could result in decreased sales and earnings for us.

Our indebtedness may increase and affect our ability to operate our businesses, and have a material adverse effect on our financial flexibility, financial condition and results of operations.

Although existing credit facilities contain restrictions on the occurrence of additional indebtedness, these restrictions are subject to a number of qualifications and exceptions and, under certain circumstances, additional indebtedness incurred in compliance with these restrictions could be substantial and secured. The level of indebtedness could have important consequences, including the following: (i) limiting our ability to obtain additional financing to fund working capital needs, capital expenditures, debt service requirements, acquisitions, general corporate, or other purposes; (ii) requiring us to utilize a significant portion of cash flows to service indebtedness, thereby reducing our funds available for operations, future business opportunities, and distributions to us and public common unitholders of CVR Partners; (iii) limiting our ability to use operating cash flow in other areas of our business because we must dedicate a substantial portion of these funds to service debt; (iv) limiting our ability to compete with other companies who are not as highly leveraged, as we may be less capable of responding to adverse economic and industry conditions; (v) limiting our ability to make certain payments on debt that is subordinated or secured on a junior basis; (vi) restricting the way in which we conduct business because of financial and operating covenants, including regarding borrowing additional funds, disposing of assets, and in the case of certain indebtedness of subsidiaries, restricting the ability of subsidiaries to pay dividends or make distributions; (vii) limiting our ability to enter into certain transactions with our affiliates; (viii) limiting our ability to designate our subsidiaries as unrestricted subsidiaries; (ix) exposing us to potential events of default (if not cured or waived) under financial and operating covenants contained in their or their

respective subsidiaries' debt instruments; (x) increasing our vulnerability to general adverse economic and industry conditions or adverse pricing of products; (xi) increasing the likelihood for a reduction in the borrowing base under CVR Refining L.P.'s ("CVR Refining") Amended and Restated ABL Credit Facility following a periodic redetermination could require us to repay a portion of our then-outstanding bank borrowings; and (xii) limiting our ability to react to changing market conditions in our industries and in respective customers' industries.

Covenants in our debt agreements could limit our ability to incur additional indebtedness and engage in certain transactions, as well as limit operational flexibility, which could adversely affect our liquidity and ability to pursue our business strategies.

Our debt facilities and instruments contain, and any instruments governing future indebtedness would likely contain, a number of covenants that impose significant operating and financial restrictions on us and our subsidiaries and may limit our ability to engage in acts that may be in our long-term best interest, including restrictions on the ability, among other things, to: incur, assume, or guarantee additional indebtedness or issue redeemable or preferred stock; pay dividends or distributions in respect of equity securities or make other restricted payments; prepay, redeem, or repurchase certain debt; enter into agreements that restrict distributions from restricted subsidiaries; make certain payments on debt that is subordinated or secured on a junior basis; make certain investments; sell or otherwise dispose of assets, including capital stock of subsidiaries; create liens on certain assets; consolidate, merge, sell, or otherwise dispose of all or substantially all assets; enter into certain transactions with affiliates; and designate subsidiaries as unrestricted subsidiaries.

Any of these restrictions could limit our ability to plan for or react to market conditions and could otherwise restrict operating activities. Any failure to comply with these covenants could result in a default under existing debt facilities and instruments. Upon a default, unless waived, the lenders under such debt facilities and instruments would have all remedies available to a secured lender and could elect to terminate their commitments, cease making further loans, institute foreclosure proceedings against assets, and force bankruptcy or liquidation, subject to any applicable intercreditor agreements. In addition, a default under existing debt facilities and instruments would trigger a cross default under other agreements and could trigger a cross default under the agreements governing future indebtedness. Our operating segments' results may not be sufficient to service existing indebtedness or to fund other expenditures, and we may not be able to obtain financing to meet these requirements.

We may not be able to generate sufficient cash to service existing indebtedness and may be forced to take other actions to satisfy debt obligations that may not be successful.

Our ability to satisfy existing debt obligations will depend upon, among other things: future financial and operating performance, which will be affected by prevailing economic conditions and financial, business, regulatory, and other factors, many of which are beyond our control; future ability to borrow under CVR Refining's Amended and Restated ABL Credit Facility and CVR Partners' ABL Credit Facility, the availability of which depends on, among other things, complying with the covenants in the applicable facility; and future ability to obtain other financing.

We cannot offer any assurance that our businesses will generate sufficient cash flow from operations, or that we will be able to draw under our credit facilities or from other sources of financing, in an amount sufficient to fund respective liquidity needs. In addition, our board of directors may in the future elect to pursue other strategic options including acquisitions of other businesses or asset purchases, which would reduce cash available to service our debt obligations.

If cash flows and capital resources are insufficient to service existing indebtedness, we may be forced to reduce or delay capital expenditures, sell assets, seek additional capital, restructure or refinance existing indebtedness, or seek bankruptcy protection. These alternative measures may not be successful and may not permit the meeting of scheduled debt service and other obligations. Our ability to restructure or refinance debt will depend on the condition of the capital markets and our financial condition, including that of our operating segments, at such time. Any refinancing of existing debt could be at higher interest rates and may require compliance with more onerous covenants, which could further restrict business operations.

The borrowings under our credit facilities bear interest at variable rates and other debt we or they incur could likewise be variable-rate debt. If market interest rates increase, variable-rate debt will create higher debt service requirements, which could adversely affect our cash flow and/or distributions to us. Although we may enter into agreements limiting exposure to higher interest rates, any such agreements may not offer complete protection from this risk.

We are authorized to issue up to a total of 350 million shares of our common stock and 50 million shares of preferred stock, potentially diluting equity ownership of current holders and the share price of our common stock.

Our board of directors may authorize us to issue the available authorized shares of common stock or preferred stock without notice to, or further action by, our stockholders, unless stockholder approval is required by law or the rules of the NYSE. The issuance of additional shares of common stock or preferred stock may significantly dilute the equity ownership of the current holders of our common stock.

An increase in interest rates will cause our debt service obligations to increase.

Since March 2022, the Federal Reserve has raised its target range for the federal funds rate seven times, including by 25 basis points in March 2022, by 50 basis points in May 2022, by 75 basis points in each of June 2022, July 2022, September 2022 and November 2022 and by 50 basis points in December 2022. Furthermore, the Federal Reserve has signaled that additional rate increases are likely to occur for the foreseeable future. An increase in the interest rates associated with our floating rate debt would increase our debt service costs and affect our results of operations and cash flow available for payments of our debt obligations. In addition, an increase in interest rates could adversely affect our future ability to obtain financing or materially increase the cost of any additional financing.

Risks Related to Our Corporate Structure

The Company's reorganization of its entities and assets could trigger increased costs, complexity and risks.

In February 2023, the Company completed the transformation of its business to segregate its renewables business, which included the transfer of assets into multiple newly formed entities and the execution of contractual arrangements among the Company's subsidiaries. Such reorganization could subject the Company to increased costs and operational complexity and other risks. The reorganization may not be successful for many reasons, including but not limited to adverse legal and regulatory developments that may affect particular business lines. Failure to manage risks relating to the reorganization could have a material adverse effect on our results of operations, financial condition and cash flows.

We are a holding company and depend upon our subsidiaries for our cash flow.

We are a holding company, and our subsidiaries conduct substantially all of our operations and own substantially all of our assets. Consequently, our cash flow and our ability to meet our obligations or to pay dividends or make other distributions in the future will depend upon the cash flow of our subsidiaries and the payment of funds by our subsidiaries to us in the form of distributions.

Mr. Carl C. Icahn exerts significant influence over the Company, and his interests may conflict with the interests of the Company's other stockholders.

Mr. Carl C. Icahn indirectly controls approximately 71% of the voting power of our common stock and, by virtue of such stock ownership, is able to control or exert substantial influence over the Company, including the election and appointment of directors; business strategy and policies; mergers or other business combinations; acquisition or disposition of assets; future issuances of common stock, common units, or other securities; occurrence of debt or obtaining other sources of financing; and the payment of dividends on the Company's common stock and distributions on the common units of CVR Partners. The existence of a controlling stockholder may have the effect of making it difficult for, or may discourage or delay, a third-party from seeking to acquire a majority of the Company's outstanding common stock, which may adversely affect the market price of the Company's common stock.

Mr. Icahn's interests may not always be consistent with the Company's interests or with the interests of the Company's other stockholders. Mr. Icahn and entities controlled by him may also pursue acquisitions or business opportunities in industries in which we compete, and there is no requirement that any additional business opportunities be presented to us. We also have and may in the future enter into transactions to purchase goods or services with affiliates of Mr. Icahn. To the extent that conflicts of interest may arise between the Company and Mr. Icahn and his affiliates, those conflicts may be resolved in a manner adverse to the Company or its other stockholders.

In addition, in the event of a sale or transfer of some or all of Mr. Icahn's interests in us to an unrelated party or group, a change of control could be deemed to have occurred under the terms of the indenture governing CVR Energy's 5.250% and 5.750% Senior Notes and under the indenture governing CVR Partners' 6.125% Senior Secured Notes, which, in each case, could require the issuers to offer to repurchase all outstanding notes at 101% of their principal amount plus accrued interest to the date of repurchase, and an event of default could be deemed to have occurred under CVR Refining's Amended and Restated ABL Credit Facility, which, in each case, could allow lenders to accelerate indebtedness owed to them. If such an event were to occur, it is possible that we will not have sufficient funds at the time of the change of control to make the required repurchase of notes or repay amounts outstanding under CVR Refining's Amended and Restated ABL Credit Facility or CVR Partners' ABL Credit Facility, if any.

Our stock price may decline due to sales of shares by Mr. Carl C. Icahn.

Sales of substantial amounts of the Company's common stock, or the perception that these sales may occur, may adversely affect the price of the Company's common stock and impede its ability to raise capital through the issuance of equity securities in the future. Mr. Icahn could elect in the future to request that the Company file a registration statement to sell shares of the Company's common stock. If Mr. Icahn were to sell a large number of shares into the public markets, Mr. Icahn could cause the price of the Company's common stock to decline.

We are a "controlled company" within the meaning of the NYSE rules and, as a result, qualify for, and are relying on, exemptions from certain corporate governance requirements.

A company of which more than 50% of the voting power is held by an individual, a group, or another company is a "controlled company" within the meaning of the NYSE rules and may elect not to comply with certain corporate governance requirements of the NYSE, including the requirements that a majority of our board of directors consist of independent directors; we have a nominating/corporate governance committee that is composed entirely of independent directors; and we have a compensation committee that is composed entirely of independent directors. We are relying on all of these exemptions as a controlled company. Accordingly, our stockholders may not have the same protections afforded to stockholders of companies that are subject to all of the corporate governance requirements of the NYSE. In addition, CVR Partners is relying on exemptions from the same NYSE corporate governance requirements described above.

We have various mechanisms in place to discourage takeover attempts, which may reduce or eliminate our stockholders' ability to sell their shares for a premium in a change of control transaction.

Various provisions of our amended certificate of incorporation and second amended and restated bylaws and of Delaware corporate law may discourage, delay, or prevent a change in control or takeover attempt of our Company by a third-party. Public stockholders who might desire to participate in such a transaction may not have the opportunity to do so. These anti-takeover provisions could substantially impede the ability of public stockholders to benefit from a change of control or change in our management and board of directors. These provisions include preferred stock that could be issued by our board of directors to make it more difficult for a third-party to acquire, or to discourage a third-party from acquiring, a majority of our outstanding voting stock; limitations on the ability of stockholders to call special meetings of stockholders; limitations on the ability of stockholders to act by written consent in lieu of a stockholders' meeting; and advance notice requirements for nominations of candidates for election to our board of directors or for proposing matters that can be acted upon by our stockholders at stockholder meetings.

Compliance with and changes in the tax laws could adversely affect our performance.

We are subject to extensive tax liabilities, including U.S. and state income taxes and transactional taxes such as excise, sales/use, payroll, franchise, and withholding taxes. New tax laws and regulations are continuously being enacted or proposed that could result in increased expenditures for tax liabilities in the future.

In August 2022, President Biden signed into law the Inflation Reduction Act. This law imposes, among other things, a 15% corporate alternative minimum tax on adjusted financial statement income, and a 1% excise tax on certain corporate stock repurchases occurring after December 31, 2022. While we do not expect any material impacts from these provisions, it is unclear how they will be implemented by the U.S. Department of Treasury and what, if any, impact they will have on our tax rate. We will continue to evaluate the impact of the Inflation Reduction Act as further information becomes available.

Risks Related to Our Ownership in CVR Partners

If CVR Partners were to be treated as a corporation for U.S. federal income tax purposes or if it becomes subject to entity-level taxation for state tax purposes, its cash available for distribution to its common unitholders, including to us, would be substantially reduced, likely causing a substantial reduction in the value of its common units, including the common units held by us.

The anticipated after-tax economic benefit of an investment in common units of CVR Partners depends largely on it being treated as a partnership for U.S. federal income tax purposes. Despite the fact that CVR Partners is organized as a limited partnership under Delaware law, it would be treated as a corporation for U.S. federal income tax purposes unless it satisfies a “qualifying income” requirement. CVR Partners may not find it possible to meet this qualifying income requirement, may inadvertently fail to meet this qualifying income requirement, or a change in current law could cause CVR Partners to be treated as a corporation for U.S. federal income tax purposes or otherwise subject CVR Partners to entity-level taxation. If CVR Partners were to be treated as a corporation for U.S. federal income tax purposes, it would pay U.S. federal income tax on all of its taxable income at the corporate tax rate. Distributions to its common unitholders (including us) would generally be taxed again as corporate distributions, and no income, gains, losses, or deductions would flow through to such common unitholders. Because a tax would be imposed upon CVR Partners as a corporation, its cash available for distribution to its common unitholders would be substantially reduced. Therefore, treatment of CVR Partners as a corporation would result in a material reduction in the anticipated cash flow and after-tax return to its common unitholders (including us), likely causing a substantial reduction in the value of such common units.

We may have liability to repay distributions that are wrongfully distributed to us.

Under certain circumstances, we may, as a holder of common units in CVR Partners, have to repay amounts wrongfully returned or distributed to us. Under the Delaware Revised Uniform Limited Partnership Act, a partnership may not make distributions to its unitholders if the distribution would cause its liabilities to exceed the fair value of its assets. Delaware law provides that for a period of three years from the date of an impermissible distribution, limited partners who received the distribution and who knew at the time of the distribution that it violated Delaware law will be liable to the company for the distribution amount.

Public investors own approximately 63% of the Nitrogen Fertilizer Segment through CVR Partners. Although we own the general partner of CVR Partners, the general partner owes a duty of good faith to public unitholders, which could cause them to manage their respective businesses differently than if there were no public unitholders.

Public investors own approximately 63% of CVR Partners’ common units. We are not entitled to receive all of the cash generated by CVR Partners or freely transfer money to finance operations at the Petroleum Segment. Furthermore, although we own the general partner of CVR Partners, the general partner is subject to certain fiduciary duties, which may require the general partner to manage its business in a way that may differ from our best interests.

CVR Partners is managed by the executive officers of its general partner, who are employed by and also serve as part of the senior management team of the Company. Conflicts of interest could arise as a result of this arrangement.

CVR Partners is managed by the executive officers of its general partner, who are employed by and also serve as part of the senior management team of the Company. Furthermore, although CVR Partners has entered into a service agreement with the Company under which it compensates the Company for the services of its management, our management is not required to devote any specific amount of time to the Nitrogen Fertilizer Segment and may devote a substantial majority of their time to other business of the Company. Moreover, the Company may terminate the services agreement with CVR Partners at any time, subject to a 90-day notice period. In addition, key executive officers of the Company, including its president and chief executive officer, chief financial officer, and general counsel, will face conflicts of interest if decisions arise in which CVR Partners and the Company have conflicting points of view or interests.

The potential spin-off of our interest in the nitrogen fertilizer business could involve significant time and expense and management attention, could disrupt or adversely affect the consolidated or separate businesses, results of operations and financial condition and may not be completed in accordance with the expected terms or anticipated timelines, or at all and may not achieve the intended results.

On November 21, 2022, we announced that our Board authorized management to explore a potential spin-off of our interest in the nitrogen fertilizer business, which is owned by CVR Energy through the general and limited partner interests we hold in CVR Partners. Such a transaction would likely involve creating a new and independent, publicly traded company (“SpinCo”) through a tax-free distribution to our stockholders of stock in SpinCo. Unanticipated developments could delay, prevent or otherwise adversely affect the potential spin-off, including but not limited to disruptions in general market conditions or potential problems or delays in obtaining various regulatory and tax approvals or clearances. In addition, consummation of the potential spin-off would be subject to certain conditions, including, among others, final approval of our Board, the receipt of a favorable opinion with respect to the tax-free nature of the transaction, and the effectiveness of a Form 10 registration statement with the SEC. There can be no assurance that the potential spin-off transaction will be completed in the manner described, or at all, and we have not set a timetable for completion of any such transaction.

We expect that the process of continuing to explore and, if approved, completing the potential spin-off, will be time-consuming and involve significant expenses. In addition, completion of the potential spin-off would require significant amounts of management’s time and effort which may divert management’s attention from other aspects of our business operations. The potential spin-off would also require modifications to our systems and processes used to operate our business. We may experience delays, increased costs and other difficulties related to these modifications which could adversely affect our business, financial condition and results of operations. Following the potential spin-off, we would be a smaller, less diversified company with a narrower business focus and may be more vulnerable to changing market conditions, which could adversely affect our operating results. We may also experience increased difficulties in attracting, retaining and motivating employees during the pendency of the potential spin-off and following its completion, which could harm our business.

Further, if the potential spin-off is completed, the anticipated benefits and synergies of the transaction, strategic and competitive advantages of each company, and future growth and other opportunities for each company may not be realized within the expected time periods or at all. Failure to implement the potential spin-off effectively could also result in a lower value to our company and our stockholders.

The potential spin-off may result in disruptions to, and negatively impact our relationships with, our customers and other business partners.

Parties with which we do business may experience uncertainty associated with the potential spin-off, including with respect to current or future business relationships with us. Our business relationships may be subject to disruption as customers, vendors and others may attempt to negotiate changes in existing business relationships or consider entering into business relationships with parties other than us. These disruptions could adversely affect our business, including adversely affecting our ability to realize the anticipated benefits of the potential spin-off.

If the potential spin-off does not qualify as a transaction that is generally tax-free for U.S. federal income tax purposes, the potential spin-off could result in substantial tax liability.

If we pursue the potential spin-off, we intend to obtain an opinion as to the tax-free nature of the spin-off under the U.S. Internal Revenue Code of 1986, as amended. The opinion would be based, among other things, on various factual assumptions and representations we would make. If any of these assumptions or representations are, or become, inaccurate or incomplete, reliance on the opinion and ruling may be jeopardized. If the potential spin-off would not qualify for tax-free treatment for U.S. federal income tax purposes, the resulting tax liability to us and to SpinCo stockholders could be substantial.

General Risks Related to CVR Energy

The acquisition, expansion and investment strategy of our businesses involves significant risks.

From time to time, we may consider pursuing acquisitions and expansion projects to continue to grow and increase profitability. We also may make investments in other entities. There can be no assurance that we will be able to consummate any acquisitions or expansions, successfully integrate acquired businesses or entities, or generate positive cash flow at any acquired company or expansion project. Challenges that may lead to failed consummation of an expansion/acquisition include intense competition for suitable acquisition targets, the potential unavailability of financial resources necessary, difficulties in securing sufficiently favorable terms, and the failure to obtain requisite regulatory or other governmental approvals or the approval of equity holders of the entities in which we have invested. In addition, any future acquisitions, expansions or

investments may entail significant transaction costs and risks associated with entry into new markets and lines of business, including but not limited to new regulatory obligations and risks, and integration challenges such as disruption of operations; failure to achieve financial or operating objectives contributing to the accretive nature of an acquisition; strain on controls, procedures and management; the need to modify systems or to add management resources; the diversion of management time from the operation of our business; customer and personnel retention; assumption of unknown material liabilities or regulatory non-compliance issues; amortization of acquired assets, which would reduce future reported earnings; and possible adverse short-term effects on our cash flows or operating results. Also, our investments may not be successful for many reasons, including, but not limited to, lack of control; worsening of general economic and market conditions; or adverse legal and regulatory developments that may affect particular businesses. Failure to manage these acquisition, expansion and investment risks could have a material adverse effect on our results of operations, financial condition and cash flows. Our joint ventures involve similar risks.

We are subject to the risk of becoming an investment company.

From time to time, we may own less than a 50% interest in other public companies, which exposes us to the risk of inadvertently becoming an investment company required to register under the Investment Company Act (“ICA”). Events beyond our control, including significant appreciation or depreciation in the market value of certain of our publicly traded holdings or adverse developments, could result in our inadvertently becoming an investment company required to register under the ICA and subject to extensive, restrictive and potentially adverse regulations relating to, among other things, operating methods, management, capital structure, dividends and transactions with affiliates, and could also be subject to monetary penalties or injunctive relief for failure to register as such.

Internally generated cash flows and other sources of liquidity may not be adequate for the capital needs of our businesses.

Our businesses are capital intensive, and working capital needs may vary significantly over relatively short periods of time. For instance, crude oil price volatility can significantly impact working capital on a week-to-week and month-to-month basis. If we cannot generate adequate cash flow or otherwise secure sufficient liquidity to meet our working capital needs or support our short-term and long-term capital requirements, we may be unable to meet our debt obligations, pursue our business strategies, or comply with certain environmental standards, which would have a material adverse effect on our business and results of operations.

Our ability to pay dividends on our common stock is subject to market conditions and numerous other factors.

Dividends are subject to change at the discretion of the board of directors and may change from quarter to quarter and may not be paid at historical rates or at all. Our ability to continue paying dividends is subject to our ability to continue to generate sufficient cash flow from our operating segments, and the amount of dividends we are able to pay each year may vary, possibly substantially, based on market conditions, crack spreads, our capital expenditure and other business needs, covenants contained in any debt agreements we may enter into in the future, covenants contained in existing debt agreements, and the amount of distributions we receive from CVR Partners. If the amount of our dividends decreases, the trading price of our common stock could be materially adversely affected as a result.

Item 1B. *Unresolved Staff Comments*

None.

Item 2. *Properties*

Refer to Part I, Item 1, “Petroleum” and “Nitrogen Fertilizer” of this Report for more information on our core business properties. We also lease property for our executive and marketing offices in Sugar Land, Texas and Kansas City, Kansas, respectively.

Item 3. *Legal Proceedings*

In the ordinary course of business, we may become party to lawsuits, administrative proceedings, and governmental investigations, including environmental, regulatory, and other matters. Large, and sometimes unspecified, damages or penalties may be sought from us in some matters and certain matters may require years to resolve. Refer to Part II, Item 8, Note 11

(“Commitments and Contingencies”), Contingencies of this Report for further discussion on current litigation matters. Although we cannot provide assurance, we believe that an adverse resolution of the matters described therein would not have a material impact on our liquidity, consolidated financial position, or consolidated results of operations.

Item 4. *Mine Safety Disclosures*

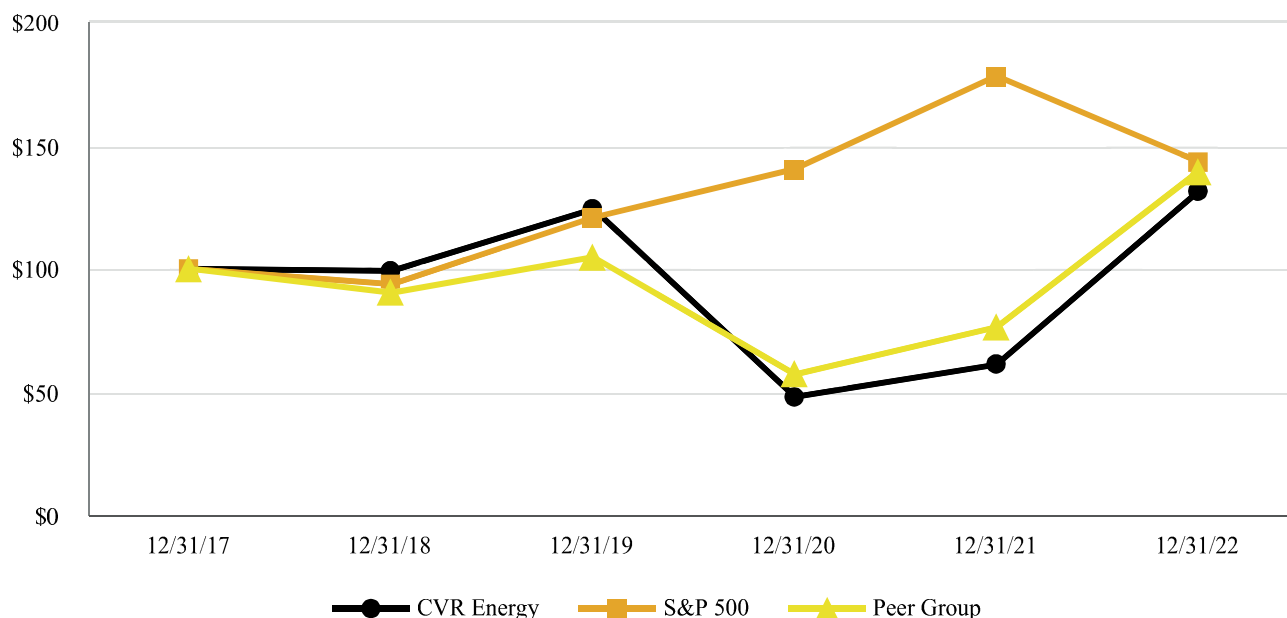
Not applicable.

PART II

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

Performance Graph

The performance graph below compares the cumulative total return of our common stock to (a) the cumulative total return of the S&P 500 Composite Index and (b) a composite peer group (“Peer Group”) consisting of Delek US Holdings, Inc., HF Sinclair Corporation (formerly known as HollyFrontier Corporation), Marathon Petroleum Corp., Par Pacific Holdings, Inc, PBF Energy Inc. and Valero Energy Corporation. The graph assumes that the value of the investment in common stock and each index was \$100 on December 31, 2017 and that all dividends were reinvested. Investment is weighted on the basis of market capitalization.



The share price performance shown on the graph is not necessarily indicative of future price performance. Information used in the graph was obtained from Yahoo! Finance (finance.yahoo.com). The performance graph above is furnished and not filed for purposes of the Securities Act and the Exchange Act. The performance graph is not soliciting material subject to Regulation 14A.

Market Information

Our common stock is listed under the symbol “CVI” on the New York Stock Exchange (“NYSE”). The Company has 113 holders of record of the outstanding shares as of December 31, 2022.

Purchases of Equity Securities by the Issuer

On October 23, 2019, the Board of Directors of the Company (the “Board”) authorized a stock repurchase program (the “Stock Repurchase Program”). The Stock Repurchase Program would enable the Company to repurchase up to \$300 million of the Company’s common stock. Repurchases under the Stock Repurchase Program may be made from time-to-time through open market transactions, block trades, privately negotiated transactions or otherwise in accordance with applicable securities laws. The timing, price and amount of repurchases (if any) will be made at the discretion of management and are subject to market conditions as well as corporate, regulatory and other considerations. While the Stock Repurchase Program currently has a duration of four years, it does not obligate the Company to acquire any stock and may be terminated by the Board at any time.

We have not repurchased any of our common stock since inception of the Stock Repurchase Program.

Item 6. [Reserved]

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

The following discussion and analysis of our financial condition, results of operations and cash flow should be read in conjunction with our consolidated financial statements and related notes and with the statistical information and financial data included elsewhere in this Report. References to "CVR Energy", "CVR", the "Company", "we", "us", and "our" may refer to consolidated subsidiaries of CVR Energy, including CVR Partners, as the context may require.

This discussion and analysis covers the years ended December 31, 2022 and 2021 and discusses year-to-year comparisons between such periods. The discussions of the year ended December 31, 2020 and year-to-year comparisons between the years ended December 31, 2021 and 2020 that are not included in this Annual Report on Form 10-K can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7 of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2021 filed on February 23, 2022, and such discussions are incorporated by reference into this Report.

Reflected in this discussion and analysis is how management views the Company's current financial condition and results of operations along with key external variables and management's actions that may impact the Company. Understanding significant external variables, such as market conditions, weather, and seasonal trends, among others, and management actions taken to manage the Company, address external variables, among others, which will increase users' understanding of the Company, its financial condition and results of operations. This discussion may contain forward looking statements that reflect our plans, estimates and beliefs. Our actual results could differ materially from those discussed in the forward looking statements. Factors that could cause or contribute to such differences include, but are not limited to those discussed below and elsewhere in this Report.

Company Overview

CVR Energy is a diversified holding company primarily engaged in the petroleum refining and marketing industry (the "Petroleum Segment") and the nitrogen fertilizer manufacturing industry through its interest in CVR Partners, LP, a publicly traded limited partnership (the "Nitrogen Fertilizer Segment" or "CVR Partners"). The Petroleum Segment does not have crude oil exploration or production operations (an "independent petroleum refiner") and is a marketer of high value transportation fuels primarily in the form of gasoline and diesel fuels. CVR Partners produces and markets nitrogen fertilizers primarily in the form of urea ammonium nitrate ("UAN") and ammonia. We also produce and market renewable diesel. Our renewable diesel operations are not part of our reportable segments discussed below.

We operate under two reportable segments: petroleum and nitrogen fertilizer, which are referred to in this document as our "Petroleum Segment" and our "Nitrogen Fertilizer Segment," respectively.

Renewables Business

Effective February 1, 2023, in connection with our growing focus on decarbonization, we transformed our business to segregate our renewables business. As part of this transformation, in the first quarter of 2022, we formed 16 new indirect, wholly-owned subsidiaries ("NewCos") of CVR Energy. In addition, in April 2022, in connection with our Corporate Master Service Agreement effective January 1, 2020, by and among our wholly-owned subsidiary, CVR Services, LLC ("CVR Services"), and certain other of our subsidiaries, including but not limited to CVR Partners and its subsidiaries, pursuant to which CVR Services provides the service recipients thereunder with management and other professional services (the "Corporate MSA"), the NewCos were joined as service recipients under the Corporate MSA. The Company also transferred certain assets to these NewCos to, among other purposes, better align our organizational structure with management, financial reporting, and our goal to maximize our renewables focus.

Potential Spin-Off of Nitrogen Fertilizer Business

On November 21, 2022, we announced that CVR Energy's board of directors (the "Board") had authorized management to explore a potential spin-off of our interest in the nitrogen fertilizer business into a newly created and separately traded public

company. If completed, upon effectiveness of the potential spin-off transaction, CVR Energy stockholders would own shares of both CVR Energy, holding the refinery and renewables businesses, and a holding company, holding CVR Energy's current ownership of the general partner interest in, and approximately 37% of the common units (representing limited partner interests) of CVR Partners. If we proceed with the spin-off, it would be intended to be structured as a tax-free, pro-rata distribution to all of CVR Energy's stockholders as of a record date to be determined by the Board. Completion of any potential spin-off would be subject to various conditions, including final approval of our Board, and there can be no assurance that the potential spin-off will be completed in the manner described above, or at all.

We expect to incur significant costs in connection with exploring the potential spin-off transaction of our nitrogen fertilizer business into a newly created and separately traded public company. Spin-off exploration costs include legal, accounting, and advisory fees, implementation and integration costs, duplicative costs for subscriptions and information technology systems, employee and contractor costs, and other incremental separation costs related to the potential spin-off of the nitrogen fertilizer business. The potential spin-off transaction results in operating expenses that would not otherwise have been incurred by us in the normal course of our organic business operations, and we expect to incur additional spin-off exploration costs in future periods.

Strategy and Goals

The Company has adopted Mission and Values, which articulate the Company's expectations for how it and its employees do business each and every day.

Mission and Core Values

Our Mission is to be a top tier North American renewable fuels, petroleum refining, and nitrogen-based fertilizer company as measured by safe and reliable operations, superior performance and profitable growth. The foundation of how we operate is built on five core Values:

- *Safety* - We always put safety first. The protection of our employees, contractors and communities is paramount. We have an unwavering commitment to safety above all else. If it's not safe, then we don't do it.
- *Environment* - We care for our environment. Complying with all regulations and minimizing any environmental impact from our operations is essential. We understand our obligation to the environment and that it's our duty to protect it.
- *Integrity* - We require high business ethics. We comply with the law and practice sound corporate governance. We only conduct business one way—the right way with integrity.
- *Corporate Citizenship* - We are proud members of the communities where we operate. We are good neighbors and know that it's a privilege we can't take for granted. We seek to make a positive economic and social impact through our financial donations and the contributions of time, knowledge and talent of our employees to the places where we live and work.
- *Continuous Improvement* - We believe in both individual and team success. We foster accountability under a performance-driven culture that supports creative thinking, teamwork, diversity and personal development so that employees can realize their maximum potential. We use defined work practices for consistency, efficiency and to create value across the organization.

Our core Values are driven by our people, inform the way we do business each and every day and enhance our ability to accomplish our mission and related strategic objectives.

Strategic Objectives

We have outlined the following strategic objectives to drive the accomplishment of our mission:

Environmental, Health & Safety (“EH&S”) - We aim to achieve continuous improvement in all EH&S areas through ensuring our people’s commitment to environmental, health and safety comes first, the refinement of existing policies, continuous training, and enhanced monitoring procedures.

Reliability - Our goal is to achieve industry-leading utilization rates at our facilities through safe and reliable operations. We are focusing on improvements in day-to-day plant operations, identifying alternative sources for plant inputs to reduce lost time due to third-party operational constraints, and optimizing our commercial and marketing functions to maintain plant operations at their highest level.

Market Capture - We continuously evaluate opportunities to improve the facilities’ realized pricing at the gate and reduce variable costs incurred in production to maximize our capture of market opportunities.

Financial Discipline - We strive to be as efficient as possible by maintaining low operating costs and disciplined deployment of capital.

Achievements

From the beginning of the fiscal year through the date of filing, we successfully executed a number of achievements in support of our strategic objectives shown below:

	Safety	Reliability	Market Capture	Financial Discipline
Corporate:				
Achieved reduction in total recordable incident rate of 63% compared to 2021	✓			
Declared a quarterly cash dividend of \$0.50 per share for the fourth quarter of 2022, bringing total dividends declared, including special dividends, to date of \$5.30 per share related to 2022			✓	✓
Completed plan to transform our business to segregate our renewables operations			✓	✓
Safely completed the conversion of the Wynnewood hydrocracker to renewable diesel service	✓		✓	✓
Began the exploration of a potential spin-off of our Nitrogen Fertilizer business			✓	✓
Published our first external ESG Report for 2021	✓	✓		
Petroleum Segment:				
Achieved a reduction in total recordable incident rate of 20% and maintained a level number of environmental events compared to 2021	✓	✓		
Operated our refineries safely and reliably	✓	✓		
Safely completed the planned turnaround at the refinery in Wynnewood, Oklahoma (the “Wynnewood Refinery”) on time and on budget	✓	✓	✓	✓
Completed an amendment and extension of the CVR Refining, LP (“CVR Refining”) Asset Based Credit Agreement in June 2022				✓
Achieved record truck-gathered crude oil volumes in the third quarter of 2022			✓	
Nitrogen Fertilizer Segment:				
Achieved reductions in process safety management tier 1 incidents and total recordable incident rate of 37% and 86%, respectively, compared 2021	✓	✓		

	Safety	Reliability	Market Capture	Financial Discipline
Safely completed the planned turnarounds at both fertilizer facilities on time and on budget, as well as inspected, repaired and replaced major equipment as necessary during this downtime	✓	✓	✓	✓
Achieved record UAN production volumes at the Coffeyville Fertilizer Facility in March 2022		✓	✓	
Achieved record ammonia production at the East Dubuque Fertilizer Facility in December 2022		✓	✓	
Completed transaction intended to monetize 45Q tax credits and received an initial upfront payment, net of expenses, of \$18 million in January 2023				✓
Declared cash distribution of \$10.50 per common unit for the fourth quarter of 2022, bringing cumulative distributions declared to date of \$24.58 per common unit related to 2022			✓	✓
Achieved average reduction in CO ₂ e emissions of over 1 million metric tons per year since 2020 for CVR Partners	✓			
Completed CVR Partners' targeted \$95 million debt reduction plan with the repayment of the remaining \$65 million balance of its 9.25% Senior Secured Notes, due 2023 (the "2023 UAN Notes") in the first quarter of 2022 for a total reduction in annual cash interest expense of approximately \$9 million				✓
Repurchased over 111,000 CVR Partners common units for \$12 million				✓

Environmental, Social & Governance ("ESG") Highlights

In the past year, we achieved numerous milestones through our commitment to sustainability, including environmental and safety stewardship, diversity and inclusion, community outreach and sound corporate governance. In December 2022, we published our first public report based on the Sustainability Accounting Standards Board standards. Our 2021 Environmental, Social & Governance Report ("2021 ESG Report") is available at CVR Energy's website at www.CVREnergy.com. Our 2021 ESG Report does not constitute a part of, and is not incorporated by reference into, this Annual Report on Form 10-K or any other report we file with (or furnish to) the SEC, whether made before or after the date of this Annual Report on Form 10-K.

Industry Factors and Market Indicators

General Business Environment

Russia-Ukraine Conflict and Global Market Conditions - In February 2022, Russia invaded Ukraine, disrupting the global oil, fertilizer, and agriculture markets, and leading to heightened uncertainty in the worldwide economy recovering from the COVID-19 pandemic. In response, many countries have formally or informally adopted sanctions on a number of Russian exports, including Russian oil and natural gas, and individuals affiliated with Russian government leadership. These sanctions resulted in oil price volatility and elevated natural gas prices during 2022, and should continue to impact commodity prices in the near-term, which could have a material effect on our financial condition, cash flows, or results of operations. A global recession stemming from market volatility and higher price levels could result in demand destruction. The ultimate outcome of the Russia-Ukraine conflict and any associated market disruptions, as well as the potential for high inflation and/or economic recession, are difficult to predict and may materially affect our business, operations, and cash flows in unforeseen ways.

COVID-19 - The economic effects from the COVID-19 pandemic on our business were and may again be significant. Although our business has recovered since the onset of the pandemic in March 2020, there continues to be uncertainty and unpredictability about the lingering impacts to the worldwide economy, including in connection with the spread of variants of COVID-19 and resulting restrictions, that could negatively affect our business, financial condition, results of operations, and liquidity in future periods.

Petroleum Segment

The earnings and cash flows of the Petroleum Segment are primarily affected by the relationship between refined product prices and the prices for crude oil and other feedstocks that are processed and blended into refined products together with the cost of refinery compliance. The cost to acquire crude oil and other feedstocks and the price for which refined products are ultimately sold depends on factors beyond the Petroleum Segment's control, including the supply of and demand for crude oil, as well as gasoline and other refined products which, in turn, depend on, among other factors, changes in domestic and foreign economies, driving habits, weather conditions, domestic and foreign political affairs, production levels, the availability or permissibility of imports and exports, the marketing of competitive fuels and the extent of government regulation. Because the Petroleum Segment applies first-in first-out accounting to value its inventory, crude oil price movements may impact net income because of changes in the value of its unhedged inventory. The effect of changes in crude oil prices on the Petroleum Segment's results of operations is partially influenced by the rate at which the processing of refined products adjusts to reflect these changes.

The prices of crude oil and other feedstocks and refined products are also affected by other factors, such as product pipeline capacity, system inventory, local and regional market conditions, inflation, and the operating levels of other refineries. Crude oil costs and the prices of refined products have historically been subject to wide fluctuations. Widespread expansion or upgrades of third-party facilities, price volatility, international political and economic developments, and other factors are likely to continue to play an important role in refining industry economics. These factors can impact, among other things, the level of inventories in the market, resulting in price volatility and a reduction in product margins. Moreover, the refining industry typically experiences seasonal fluctuations in demand for refined products, such as increases in the demand for gasoline during the summer driving season and for volatile seasonal exports of diesel from the United States Gulf Coast. Specific factors impacting the Company's operations are outlined below:

Current Market Outlook

- After substantial declines in demand for gasoline and diesel due to the COVID-19 pandemic in 2020, the combination of improving demand, declining inventories, loss of domestic and foreign operating refining capacities, and conversions to renewable diesel facilities led to an increase in refined products prices and crack spreads during 2021 and 2022. While the refining market has largely recovered, refined product demand declined 5% nationwide in January 2023 from the 2022 average. However, distillate crack spreads have remained elevated to date in 2023.
- Warmer winter weather in Europe has significantly reduced natural gas prices in the region from December 2022 to January 2023, which has flattened the global cost curve and has hurt U.S. refiners' advantage.
- Contributing to the ultra-low sulfur diesel ("ULSD") supply constraints is the International Maritime Organization's new limit on the sulfur content in the fuel oil used on board ships ("bunker fuel") effective January 1, 2020, which lowered the sulfur limit of bunker fuel from 3.5% to 0.5% (the "IMO 2020 Regulations"), which necessitated blending ULSD into bunker fuel to meet the new specifications. The resulting reduction of supply for traditional ULSD demand was initially muted by the pandemic-induced demand contraction.
- Due to the IMO 2020 Regulations, heavy crude differentials have widened, particularly for WCS. However, the expansion of the Trans Mountain Pipeline currently expected to be completed in 2023 should potentially narrow this differential going forward.
- Shale oil production continues to increase in the shale oil basins, including the Anadarko Basin. Crude oil exports peaked in the fourth quarter of 2022 at over 5 million bpd, and we believe the Petroleum Segment benefits from these exports through the Brent crude differential to WTI, as well as all refineries in PADD II.
- Drilled but uncompleted wells inventory in the United States has decreased significantly as a result of decreased drilling activity in 2022.
- Significant capacity additions are expected in 2023, headlined by major projects scheduled to start up in the Middle East, Asia, and Africa. Some of the capacity additions could be offset with a likely economic rebound in China amid easing COVID-19 restrictions but refined product consumption is slowing in the United States and remains weak in Europe.
- The Russia-Ukraine conflict creates additional uncertainty, as sanctions on Russian oil exports, specifically diesel exports, have significantly influenced commodity markets in 2022 and into 2023. Resolution of this conflict could continue to affect markets going forward. Based on these factors, current inventory levels have remained low, particularly for distillate, with the days of supply for distillate and jet fuel at approximately 3.8 and 6.1 days,

respectively, below the seasonally adjusted five-year averages. Furthermore, planned and unplanned outages at domestic refineries are continuing to contribute to further inventory tightening and volatility.

Regulatory Environment

- We continue to be impacted by significant volatility and excessive RIN prices related to compliance requirements under the Renewable Fuel Standard (“RFS”), proposed climate change laws, and regulations. Coffeyville Resources & Marketing, LLC (“CRRM”) and Wynnewood Refining Company, LLC (“WRC” and, together with CRRM, the “obligated-party subsidiaries”), are subject to the RFS, which, each year, absent exemptions or waivers, requires blending “renewable fuels” with transportation fuels or purchasing renewable identification numbers (“RINs”), in lieu of blending, or otherwise be subject to penalties. Our cost to comply with the RFS is dependent upon a variety of factors, which include the availability of ethanol and biodiesel for blending at our refineries and downstream terminals or RINs for purchase, the price at which RINs can be purchased, transportation fuel and renewable diesel production levels, and the mix of our products, all of which can vary significantly from period to period, as well as certain waivers or exemptions to which we may be entitled. Our costs to comply with the RFS depend on the consistent and timely application of the program by the Environmental Protection Agency (“EPA”), such as timely establishment of the annual renewable volume obligation (“RVO”). RIN prices have been highly volatile and remain high due in large part to the EPA’s unlawful failure to establish the 2021, 2022, and 2023 RVOs by their respective statutory deadlines, the EPA’s delay in issuing decisions on pending small refinery hardship petitions, and subsequent denial thereof. The price of RINs has also been impacted by market factors and the depletion of the carryover RIN bank, as demand destruction during the COVID-19 pandemic resulted in reduced ethanol blending and RIN generation that did not keep pace with mandated volumes, requiring carryover RINs from the RIN bank to be used to settle blending obligations. As a result, our costs to comply with RFS (excluding the impacts of any exemptions or waivers to which the Petroleum Segment’s obligated-party subsidiaries may be entitled) increased significantly throughout 2021 and remained significant in 2022.
- In April 2022, the EPA denied 36 small refinery exemptions (“SRE”) for the 2018 compliance year, many of which had been previously granted by the EPA, and also issued an alternative compliance demonstration approach for certain small refineries (the “Alternate Compliance Ruling”) under which they would not be required to purchase or redeem additional RINs as a result of the EPA’s denial. On June 3, 2022, the EPA revised the 2020 RVO and finalized the 2021 and 2022 RVOs. The EPA also denied 69 petitions from small refineries seeking SREs, including those submitted by WRC for 2017 through 2021, and applied the Alternate Compliance Ruling to three such petitions. The price of RINs did not respond to the EPA announcement and continues to remain elevated, and as a result, we continue to expect significant volatility in the price of RINs during 2023 and such volatility could have material impacts on the Company’s results of operations, financial condition and cash flows.
- In December 2022, the EPA announced proposed RVO’s for 2023, 2024, and 2025 which mandated biodiesel RINs production to comply with ethanol RINs mandates.

Company Initiatives

- In April 2022, we completed the renewable diesel project at our Wynnewood Refinery by converting the Wynnewood Refinery’s hydrocracker to a RDU, at a total cost of \$179 million, which is capable of producing approximately 100 million gallons of renewable diesel per year and generating approximately 170 to 180 million RINs annually. The production of renewable diesel is expected to significantly reduce our future net exposure to the RFS. Further, the RDU has enabled us to capture additional benefits associated with the existing blenders’ tax credit, which has been extended to the end of 2024, and growing Low Carbon Fuel Standard (“LCFS”) programs across the country, with programs in place in California and Oregon and new programs anticipated to be implemented over the coming years.
- In November 2021, the Board approved the pretreater project at the Wynnewood Refinery, which is currently expected to be completed in the third quarter of 2023 at an estimated cost of \$95 million. The pretreatment unit should enable us to process a wider variety of renewable diesel feedstocks at the Wynnewood Refinery, most of which have a lower carbon intensity than soybean oil and generate additional LCFS credits. When completed, the collective renewable diesel efforts could effectively mitigate a substantial majority, if not all, of our future RFS exposure, assuming we receive SREs for our Wynnewood Refinery which we believe we are legally entitled to and are pursuing in the courts. However, impacts from recent climate change initiatives under the Biden Administration, actions taken by the courts, resulting administration actions under the RFS, and market conditions, could significantly impact the amount by which our renewable diesel business mitigates our costs to comply with the RFS, if at all.

As of December 31, 2022, we have an estimated open position (excluding the impacts of any exemptions or waivers to which we may be entitled) under the RFS for 2020, 2021 and 2022 of approximately 397 million RINs, excluding approximately 34 million of net open, fixed-price commitments to purchase RINs, resulting in a potential liability of \$692 million. The Company's open RFS position, which does not consider open commitments expected to settle in future periods, is marked-to-market each period and thus significant market volatility, as experienced in late 2021 and 2022, could impact our RFS expense from period to period. We recognized expense of approximately \$435 million, net of the RINs generated from our renewable diesel operations of \$103 million, and \$435 million for the years ended December 31, 2022 and 2021, respectively, for the Company's obligated-party subsidiaries compliance with the RFS. The increase in 2022 compared to 2021 was driven by an increase in RINs pricing through the fourth quarter of 2022. Of the expense recognized during the years ended December 31, 2022 and 2021, an expense of \$135 million and \$63 million relates to the revaluation of our net RVO position as of December 31, 2022 and 2021, respectively. The revaluation represents the summation of the prior period obligation and current period commercial activities, marked at the period end market price. Based upon recent market prices of RINs in January 2023, current estimates related to other variable factors, including our anticipated blending and purchasing activities, and the impact of the open RFS positions and resolution thereof, our estimated consolidated cost to comply with the RFS (without regard to any SREs the obligated-party subsidiaries may receive) is \$230 to \$240 million for 2023, net of the estimated RINs generation from our renewable diesel operations of \$240 to \$250 million.

Market Indicators

NYMEX WTI crude oil is an industry wide benchmark that is utilized in the market pricing of a barrel of crude oil. The pricing differences between other crudes and WTI, known as differentials, show how the market for other crude oils such as WCS, White Cliffs ("Condensate"), Brent Crude ("Brent"), and Midland WTI ("Midland") are trending. Due to the COVID-19 pandemic, the Russia-Ukraine conflict, and, in each case, actions taken by governments and others in response thereto, refined product prices have experienced extreme volatility. As a result of the current environment, refining margins have been and will continue to be volatile.

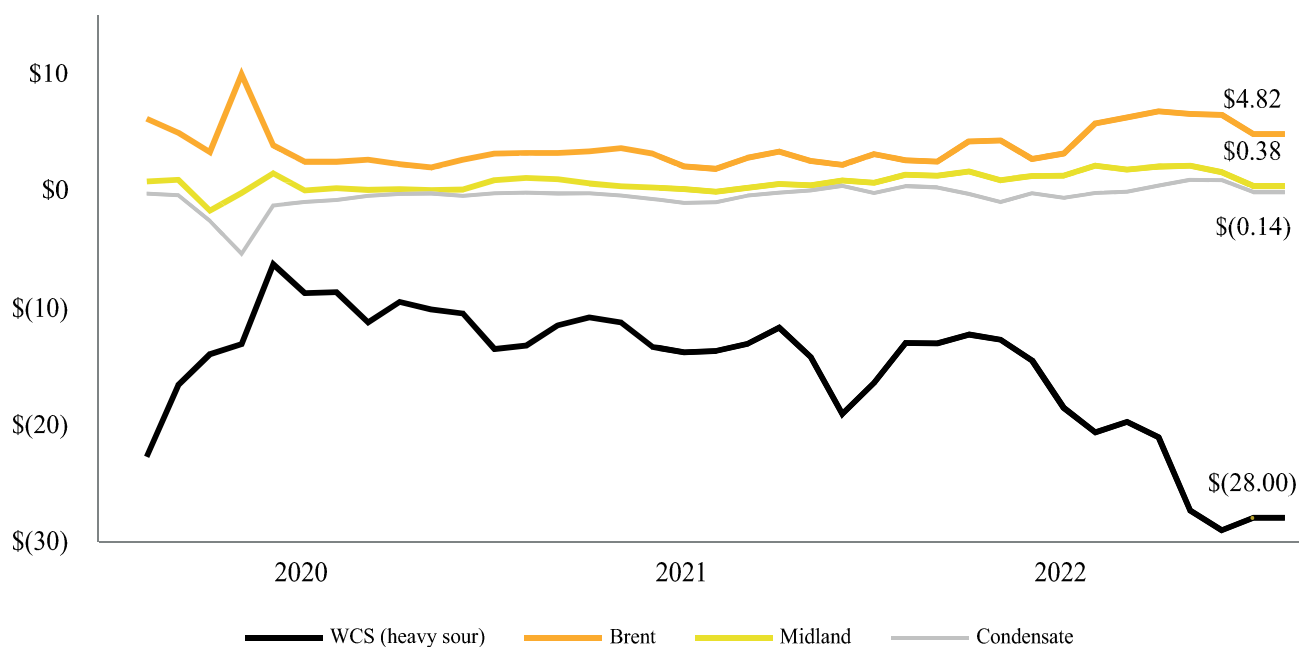
As a performance benchmark and a comparison with other industry participants, we utilize NYMEX and Group 3 crack spreads. These crack spreads are a measure of the difference between market prices for crude oil and refined products and are a commonly used proxy within the industry to estimate or identify trends in refining margins. Crack spreads can fluctuate significantly over time as a result of market conditions and supply and demand balances. The NYMEX 2-1-1 crack spread is calculated using two barrels of WTI producing one barrel of NYMEX RBOB Gasoline ("RBOB") and one barrel of NYMEX NY Harbor ULSD ("HO"). The Group 3 2-1-1 crack spread is calculated using two barrels of WTI crude oil producing one barrel of Group 3 sub-octane gasoline and one barrel of Group 3 ultra-low sulfur diesel.

Both NYMEX 2-1-1 and Group 3 2-1-1 crack spreads increased during 2022 compared to 2021. The NYMEX 2-1-1 crack spread averaged \$42.60 per barrel in 2022 compared to \$19.45 per barrel in 2021. The Group 3 2-1-1 crack spread averaged \$38.18 per barrel in 2022 compared to \$18.14 per barrel in 2021.

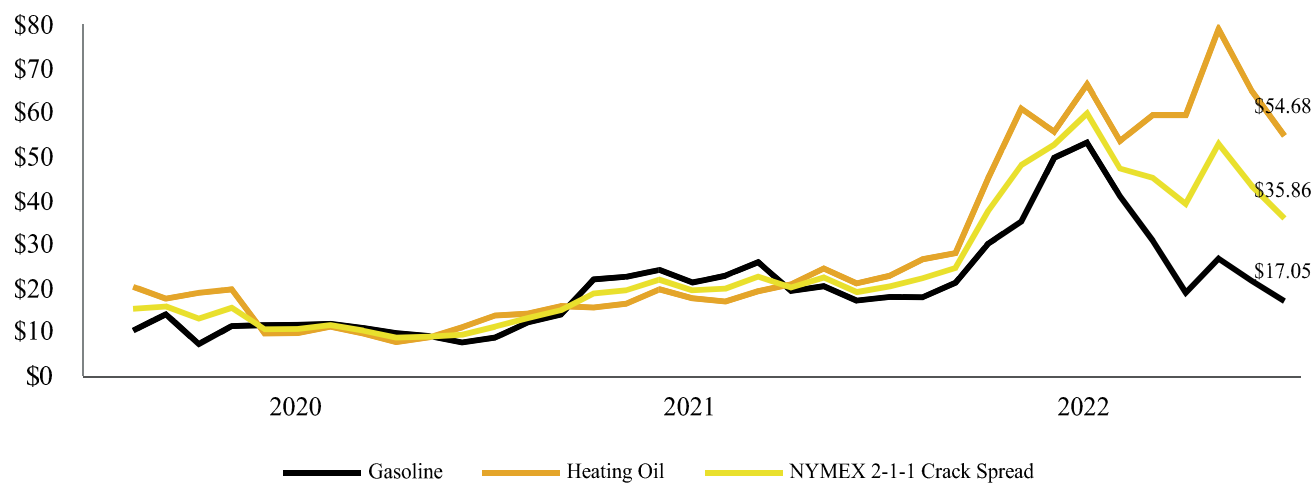
Average monthly prices for RINs increased 12.4% during 2022 compared to 2021. On a blended barrel basis (calculated using applicable RVO percentages), RINs approximated \$7.54 per barrel during 2022 compared to \$6.71 per barrel during 2021.

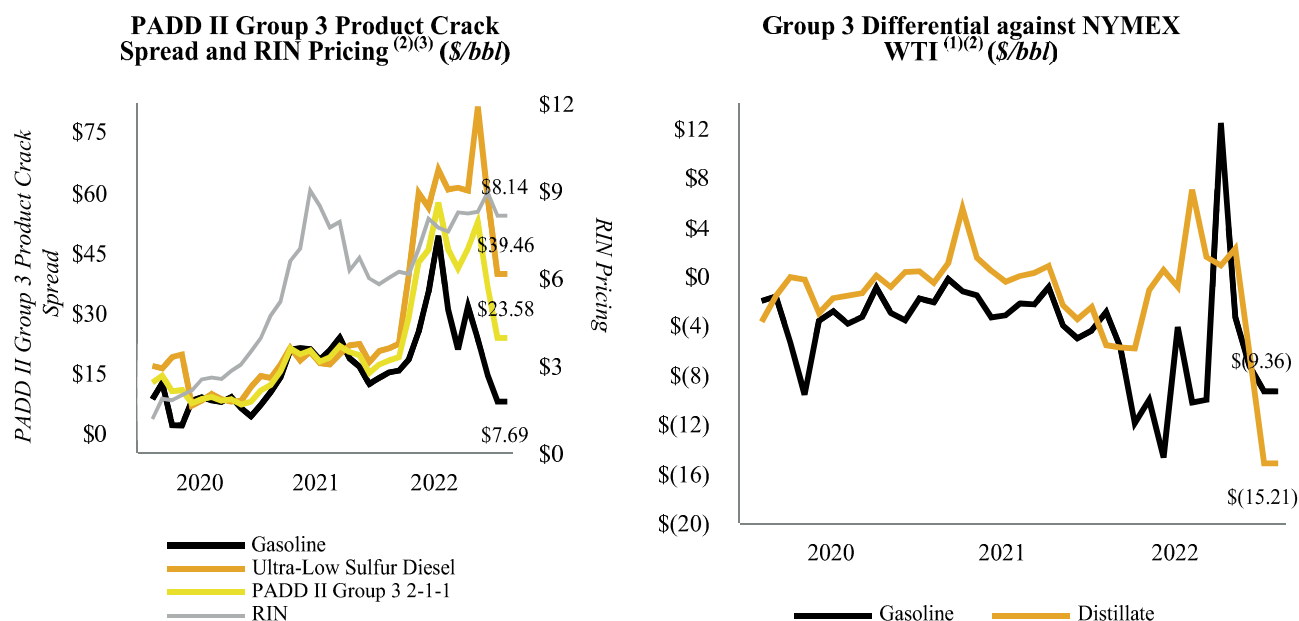
The tables below are presented, on a per barrel basis, by month through December 31, 2022:

Crude Oil Differentials against WTI ⁽¹⁾⁽²⁾



NYMEX Crack Spreads ⁽²⁾





(1) The change over time in NYMEX - WTI, as reflected in the charts above, is illustrated below.

(in \$/bbl)	Average 2020	Average December 2020	Average 2021	Average December 2021	Average 2022	Average December 2022
WTI	\$ 39.34	\$ 47.07	\$ 68.11	\$ 71.69	\$ 94.41	\$ 76.52

- (2) Information used within these charts was obtained from reputable market sources, including the New York Mercantile Exchange (“NYMEX”), Intercontinental Exchange, and Argus Media, among others.
- (3) PADD II is the Midwest Petroleum Area for Defense District (“PADD”), which includes Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, and Wisconsin.

Nitrogen Fertilizer Segment

Within the Nitrogen Fertilizer Segment, earnings and cash flows from operations are primarily affected by the relationship between nitrogen fertilizer product prices, utilization, and operating costs and expenses, including pet coke and natural gas feedstock costs.

The price at which nitrogen fertilizer products are ultimately sold depends on numerous factors, including the global supply and demand for nitrogen fertilizer products which, in turn, depends on, among other factors, world grain demand and production levels, inflation, global supply disruptions, changes in world population, the cost and availability of fertilizer transportation infrastructure, local market conditions, operating levels of competing facilities, weather conditions, the availability of imports, the availability and price of feedstocks to produce nitrogen fertilizer, impacts of foreign imports and foreign subsidies thereof, and the extent of government intervention in agriculture markets. These factors can impact, among other things, the level of inventories in the market, resulting in price volatility and a reduction in product margins. Moreover, the industry typically experiences seasonal fluctuations in demand for nitrogen fertilizer products.

As a result of the Russian invasion of Ukraine, the Black Sea, a major export point for nitrogen fertilizer and grains from these countries, has been closed to exports, which prompted tightening global supply conditions for nitrogen fertilizer in advance of spring planting and wheat and corn availability, two major exports from this region. Further, while fertilizers have not been formally sanctioned by countries, many customers are either unwilling to purchase Russian fertilizers or logistics make it too costly to import these fertilizers. Additionally, natural gas supplied from Russia to Western Europe has been constrained, and natural gas prices have remained elevated since September 2021, causing a significant portion of European nitrogen fertilizer production capacity to be curtailed or costs to be elevated compared to competitors in other regions of the world. Overall, these events have caused grain and fertilizer prices to rise, and we currently expect these conditions to persist through the spring of 2023.

Market Indicators

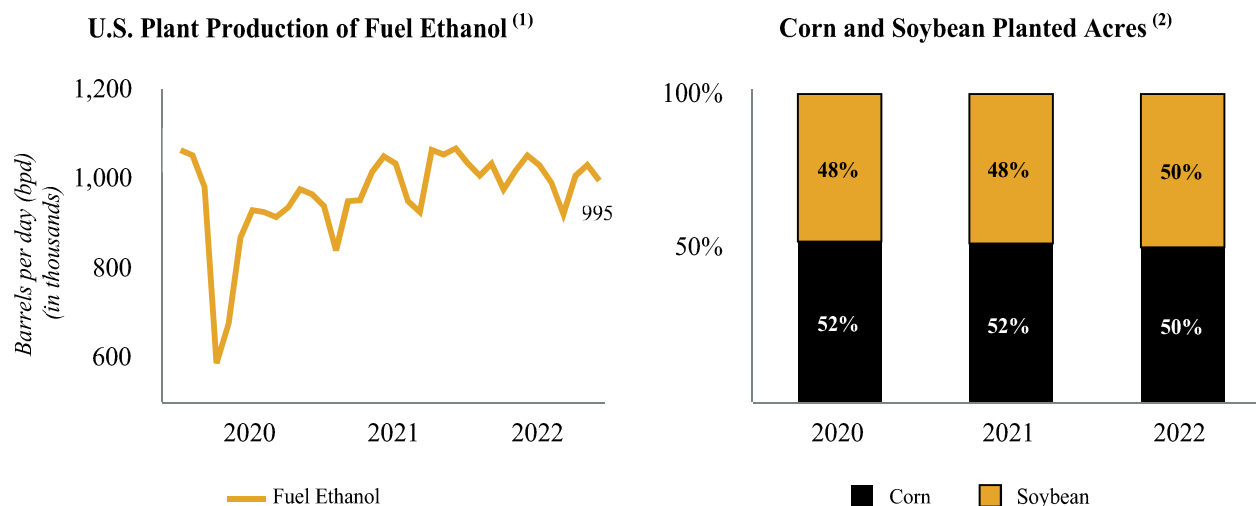
While there is risk of shorter-term volatility given the inherent nature of the commodity cycle, the Company believes the long-term fundamentals for the U.S. nitrogen fertilizer industry remain intact. The Nitrogen Fertilizer Segment views the anticipated combination of (i) increasing global population, (ii) decreasing arable land per capita, (iii) continued evolution to more protein-based diets in developing countries, (iv) sustained use of corn and soybeans as feedstock for the domestic production of ethanol and other renewable fuels, and (v) positioning at the lower end of the global cost curve should provide a solid foundation for nitrogen fertilizer producers in the United States over the longer term.

Corn and soybeans are two major crops planted by farmers in North America. Corn crops result in the depletion of the amount of nitrogen within the soil in which it is grown, which in turn, results in the need for this nutrient to be replenished after each growing cycle. Unlike corn, soybeans are able to obtain most of their own nitrogen through a process known as “N fixation.” As such, upon harvesting of soybeans, the soil retains a certain amount of nitrogen which results in lower demand for nitrogen fertilizer for the following corn planting cycle. Due to these factors, nitrogen fertilizer consumers generally operate a balanced corn-soybean rotational planting cycle as evident by the chart presented below for 2022, 2021, and 2020.

The relationship between the total acres planted for both corn and soybeans has a direct impact on the overall demand for nitrogen products, as the market and demand for nitrogen increases with increased corn acres and decreases with increased soybean acres. Additionally, an estimated 11.6 billion pounds of soybean oil is expected to be used in producing cleaner renewables in marketing year 2022/2023. Multiple refiners have announced renewable diesel expansion projects for 2023 and beyond, which will only increase the demand for soybeans and potentially for corn and canola.

The United States Department of Agriculture (“USDA”) estimates that in spring 2022 farmers planted 88.6 million acres of corn, representing a decrease of 5.1% in corn acres planted as compared to 93.4 million corn acres in 2021. Planted soybean acres were estimated to be 87.5 million acres, representing a 0.3% increase in soybean acres planted as compared to 87.2 million soybean acres in 2021. The estimated combined corn and soybean planted acres of 176.1 million in 2022 is a 2.5% decrease from the total acreage planted in 2021, which was the highest in history. Due to higher input costs for corn planting and increased demand for soybeans, particularly for renewable diesel production, it was more favorable for farmers to plant soybeans compared to corn. The lower planted corn acres in 2022 and lower corn production are expected to be supportive of corn prices for 2023.

Ethanol is blended with gasoline to meet renewable fuel standard requirements and for its octane value. Since 2006, ethanol production has consumed approximately 36% of the U.S. corn crop, so demand for corn generally rises and falls with ethanol demand, as evidenced in the charts below.



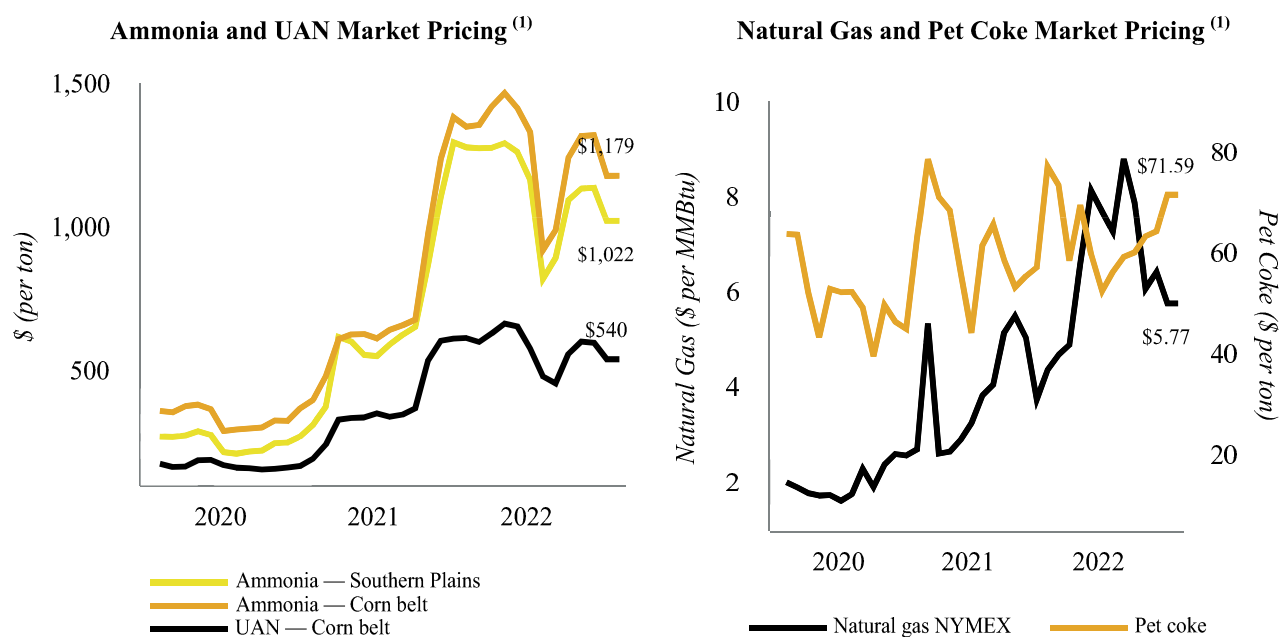
(1) Information used within this chart was obtained from the EIA through December 31, 2022.

(2) Information used within this chart was obtained from the USDA, National Agricultural Statistics Services, as of December 31, 2022.

Weather continues to be a critical variable for crop production. Even with high planted acres and trendline yields per acre in the United States, inventory levels for corn and soybeans remain below historical levels and prices have remained elevated. With tight grain and fertilizer inventory levels driven by the Russia-Ukraine conflict, prices for grains and fertilizers are expected to remain elevated through the spring of 2023. While the weather conditions were difficult early in spring 2022, farmers were able to complete the crop planting later than normal. Demand for nitrogen fertilizer, as well as other crop inputs, was strong for the spring 2022 planting season. During the summer 2022 growing season, severe drought conditions were experienced in Asia, Europe, and parts of the U.S. As a result, crop yields are projected to be below expectations and grain inventories are projected to be at the low end of historical levels, causing grain prices to rise. We expect tight grain inventories to positively impact planted acreage for the spring of 2023 and boost the demand for nitrogen fertilizer.

On June 30, 2021, CF Industries Nitrogen, L.L.C., Terra Nitrogen, Limited Partnership, and Terra International (Oklahoma) LLC filed petitions with the U.S. Department of Commerce (“USDOC”) and the U.S. International Trade Commission (the “ITC”) requesting the initiation of antidumping and countervailing duty investigations on imports of UAN from Russia and Trinidad and Tobago (“Trinidad”). On July 18, 2022, the ITC made a negative final injury determination concerning its investigation of imports from Russia and Trinidad despite USDOC’s final determination in June that UAN is subsidized and dumped in the U.S. market by producers in both countries. Since the decision in July 2022, we have observed minimal impact on the supply or demand for nitrogen fertilizer as a result of these actions.

The charts below show relevant market indicators for the Nitrogen Fertilizer Segment by month through December 31, 2022:



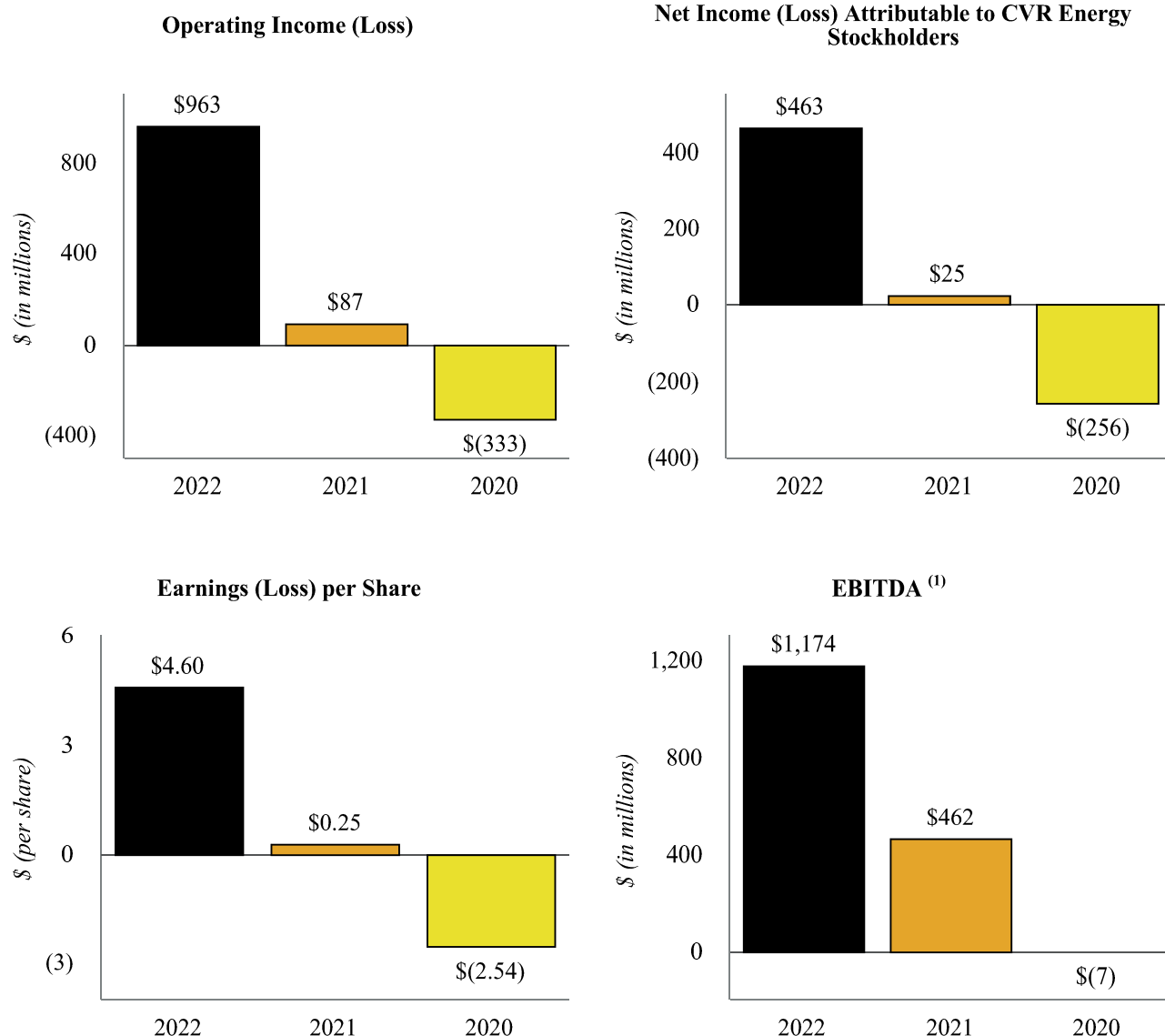
(1) Information used within these charts was obtained from various third-party sources including Green Markets (a Bloomberg Company), Pace Petroleum Coke Quarterly, and the EIA, amongst others.

Results of Operations

Consolidated

The following sections should be read in conjunction with the information outlined within the previous sections of this Part II, Item 7 and the consolidated financial statements and related notes thereto in Part II, Item 8 of this Report. Our consolidated results of operations include renewable fuels, certain other unallocated corporate activities, and the elimination of intercompany transactions and therefore do not equal the sum of the operating results of the Petroleum and Nitrogen Fertilizer Segments.

Consolidated Financial Highlights



(1) See “Non-GAAP Reconciliations” section below for reconciliations of the non-GAAP measure shown above.

Overview - The Company’s operating income and net income were \$963 million and \$644 million, respectively, for the year ended December 31, 2022, increases of \$876 million and \$570 million, respectively, compared to operating income and net income of \$87 million and \$74 million, respectively, for the year ended December 31, 2021. These increases were driven by an improvement in operating income of \$746 million within the Petroleum Segment and \$186 million within the Nitrogen Fertilizer Segment for the year ended December 31, 2022 compared to December 31, 2021. Refer to our discussion of each segment’s results of operations below for further information.

Investment Income on Marketable Securities - On June 10, 2021, the Company distributed substantially all of its holdings in Delek US Holdings, Inc. (“Delek”) (NYSE: DK), of which the Company was the largest stockholder holding approximately 14.3% of Delek’s outstanding common stock, as part of a special dividend. On January 18, 2022, the Company divested its remaining nominal holdings in Delek, and as of December 31, 2022, the Company did not hold an investment in other marketable securities of Delek. There was no dividend income received during the years ended December 31, 2022 and 2021. The Company did not recognize a gain or loss on the investment during the year ended December 31, 2022 compared to a recognized gain of \$81 million for the year ended December 31, 2021.

Other Income (Expense), Net - The Company's Other (expense) income, net, was an expense of \$77 million for the year ended December 31, 2022 compared to income of \$15 million for the year ended December 31, 2021. The change was primarily attributable to the settlement of litigation. Refer to Part II, Item 8, Note 11 ("Commitments and Contingencies") of this Report for further discussion of this settlement.

Income Tax Expense (Benefit) - The income tax expense for the year ended December 31, 2022 was \$157 million, or 19.6% of income before income taxes, as compared to income tax benefit for the year ended December 31, 2021 of \$8 million, or (12.4)% of income before income taxes. The fluctuation in income tax expense was due primarily to an increase in overall pretax earnings and state income tax expense. In addition, the change in the effective tax rate was due primarily to the changes in pretax earnings attributable to noncontrolling interests and an increase in state income tax expense.

Petroleum Segment

The Petroleum Segment utilizes certain inputs within its refining operations. These inputs include crude oil, butanes, natural gasoline, ethanol, and bio-diesel (these are also known as "throughputs").

Refining Throughput and Production Data by Refinery

Throughput Data

(in bpd)

Coffeyville

	Year Ended December 31,		
	2022	2021	2020
Regional crude	53,237	28,270	34,652
WTI	38,265	62,695	51,656
WTL	407	511	—
WTS	462	—	—
Midland WTI	642	452	—
Condensate	12,159	7,911	8,243
Heavy Canadian	6,847	3,695	1,020
DJ Basin	15,607	17,980	5,151
Other feedstocks and blendstocks	11,556	10,788	8,321

Wynnewood

Regional crude	46,159	60,287	56,932
WTL	2,323	3,430	6,235
WTS	143	202	—
Midland WTI	1,073	2,107	1,262
Condensate	13,283	7,360	6,207
Other feedstocks and blendstocks	3,125	3,396	3,616
Total throughput	205,288	209,084	183,295

Production Data

(in bpd)

Coffeyville

	Year Ended December 31,		
	2022	2021	2020
Gasoline	72,478	71,070	59,419
Distillate	58,104	53,441	43,209
Other liquid products	4,789	4,481	3,999
Solids	4,700	4,246	3,073

Wynnewood

Gasoline	35,027	39,858	38,640
Distillate	23,690	31,662	30,638
Other liquid products	5,712	2,862	2,629
Solids	11	21	25

Total production

2022	207,641	181,632
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Light product yield (as % of crude throughput) ⁽¹⁾

99.3 % 100.6 % 100.3 %

Liquid volume yield (as % of total throughput) ⁽²⁾

97.3 % 97.3 % 97.4 %

Distillate yield (as % of crude throughput) ⁽³⁾

42.9 % 43.7 % 43.1 %

(1) Total Gasoline and Distillate divided by total Regional crude, WTI, WTL, Midland WTI, WTS, Condensate, Heavy Canadian and DJ Basin throughput.

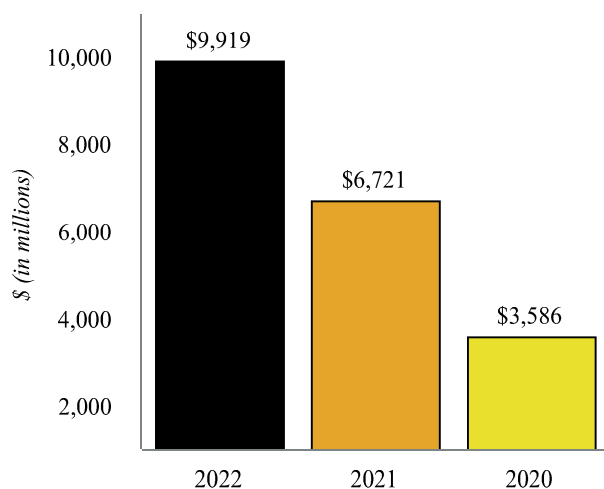
(2) Total Gasoline, Distillate, and Other liquid products divided by total throughput.

(3) Total Distillate divided by total Regional crude, WTI, WTL, Midland WTI, WTS, Condensate, Heavy Canadian and DJ Basin throughput.

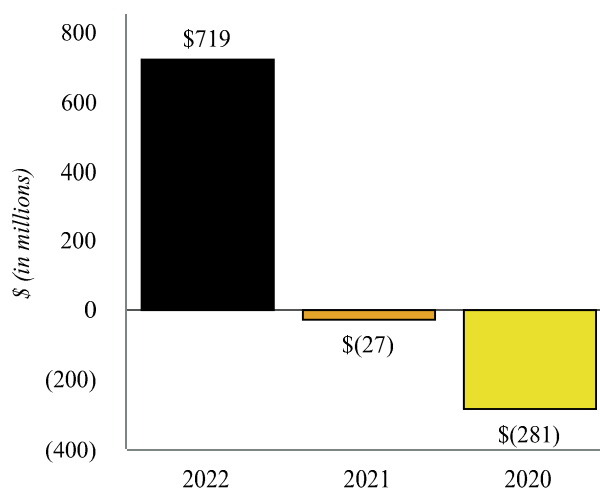
Petroleum Segment Financial Highlights

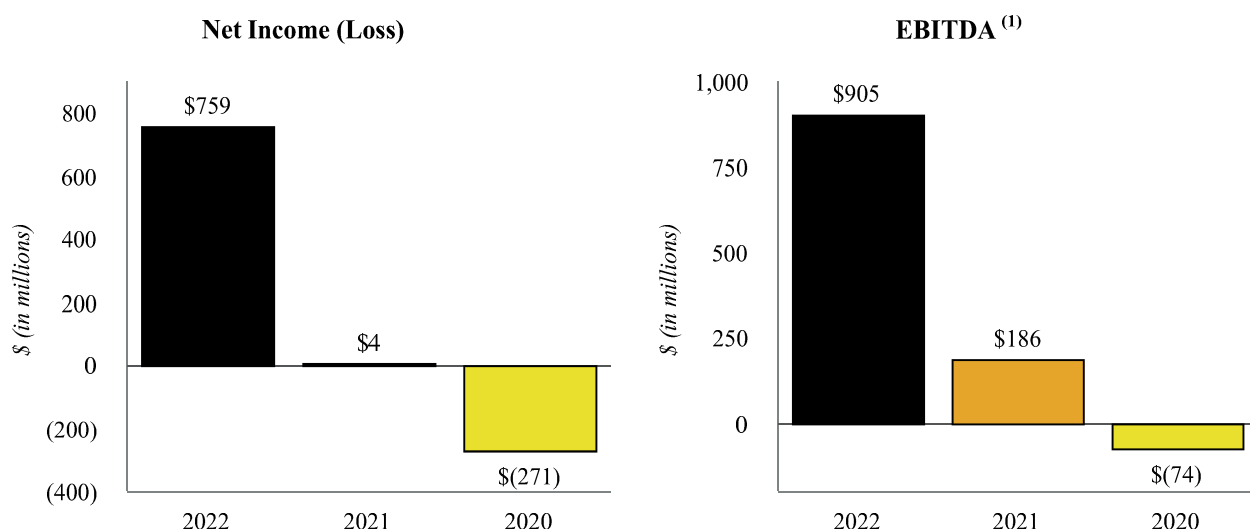
Overview - Petroleum Segment operating income and net income for the year ended December 31, 2022 were \$719 million and \$759 million, respectively, an improvement of \$746 million and \$755 million, respectively, compared to an operating loss and net income of \$27 million and \$4 million, respectively, for the year ended December 31, 2021. The improvement in both operating income and net income compared to the prior period was primarily a result of favorable refining margins resulting from improved crack spreads pricing in the current period, partially offset by increased RFS compliance costs.

Net Sales



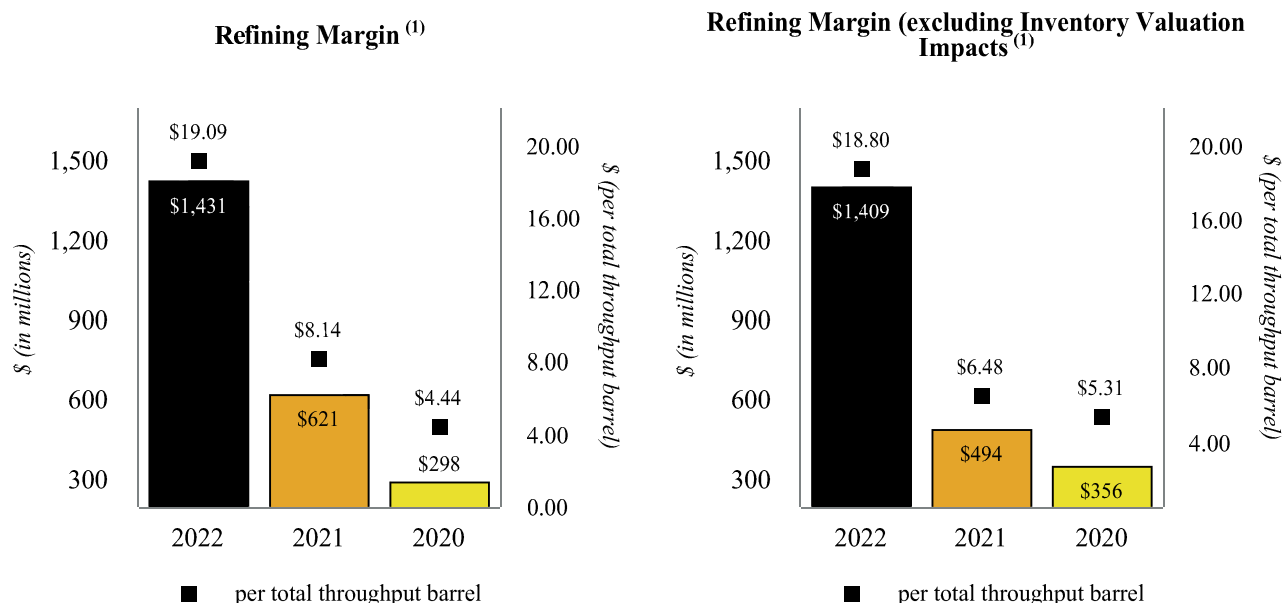
Operating Income (Loss)





(1) See “Non-GAAP Reconciliations” section below for reconciliations of the non-GAAP measure shown above.

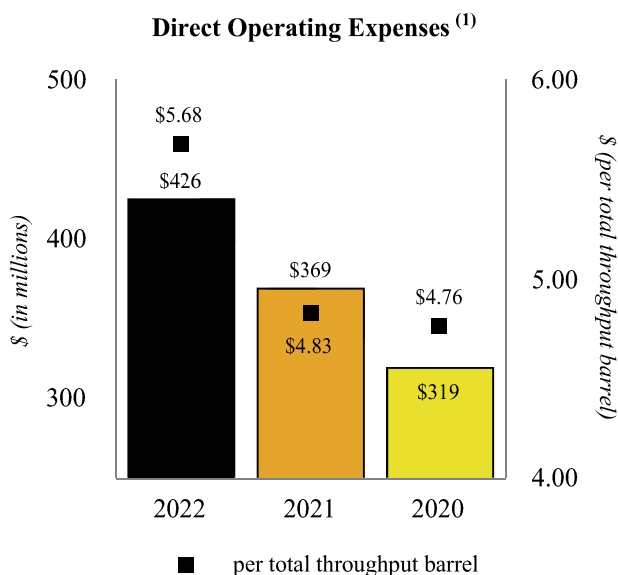
Net Sales - For the year ended December 31, 2022, net sales for the Petroleum Segment increased by \$3.2 billion when compared to the year ended December 31, 2021. The increase in net sales was due to increased prices resulting from tight inventory levels and the ongoing Russia-Ukraine conflict for the year ended December 31, 2022 compared to the year ended December 31, 2021. Further, net sales in 2021 were impacted by Winter Storm Uri, resulting in reduced production rates at both refineries.



(1) See “Non-GAAP Reconciliations” section below for reconciliations of the non-GAAP measures shown above.

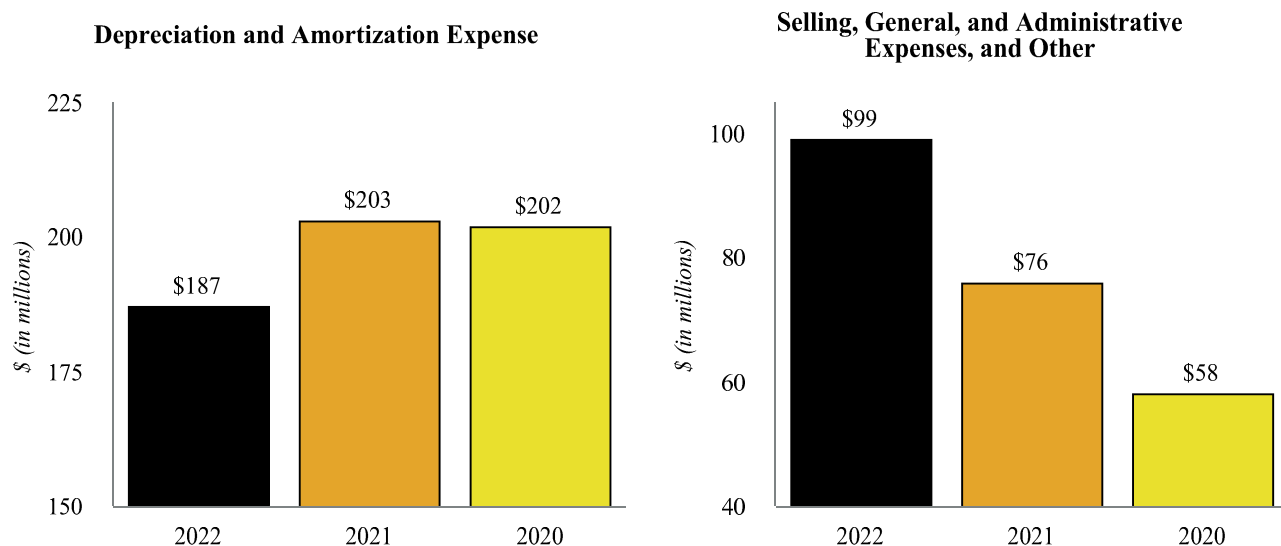
Refining Margin - For the year ended December 31, 2022, refining margin was \$1.4 billion, or \$19.09 per throughput barrel, as compared to \$621 million, or \$8.14 per throughput barrel, for the year ended December 31, 2021. The increase in refining margin of \$810 million was primarily due to an increase in product crack spreads. The Group 3 2-1-1 crack spread increased by \$20.04 per barrel relative to the year ended December 31, 2021 driven by tight inventory levels, increased European demand for diesel, and supply concerns due to the ongoing Russia-Ukraine conflict. Offsetting these impacts for the year ended December 31, 2022, throughput volumes declined by 3,796 bpd due to the Wynnewood turnaround in the first quarter of 2022, the startup of the RDU limiting crude unit capacity, and minor plant outages during 2022. This was combined

with favorable inventory valuation impacts totaling \$22 million, or \$0.29 per total throughput barrel, compared to favorable inventory valuation impacts of \$127 million, or \$1.66 per total throughput barrel, in 2021. While impacts were favorable, the decline in inventory valuation impacts year over year was a result of crude oil price increases in the prior year exceeding crude oil price increases in 2022. The Petroleum Segment's obligated-party subsidiaries recognized costs to comply with RFS of \$403 million, or \$5.38 per throughput barrel, which excludes the RINs revaluation expense impact of \$135 million, or \$1.80 per total throughput barrel, for the year ended December 31, 2022. This is compared to RFS compliance costs of \$372 million, or \$4.87 per throughput barrel, which excludes the RINs revaluation expense impact of \$63 million, or \$0.83 per total throughput barrel, for the year ended December 31, 2021. For the year ended December 31, 2022, the Petroleum Segment's RFS compliance costs included \$103 million of RINs purchased from our renewable diesel operations. The increase in both RFS compliance costs and RINs revaluation in 2022 was primarily related to increased RINs prices for the year ended December 31, 2022 compared to the prior period. This was combined with derivative losses of \$47 million recognized during the year ended December 31, 2022, a result of unfavorable crack spread swaps, partially offset by gains on WCS sales, compared to derivative losses of \$45 million recognized during the year ended December 31, 2021, also a result of unfavorable crack spread swaps, partially offset by gains on WCS sales.



(1) Exclusive of depreciation and amortization expense.

Direct Operating Expenses (Exclusive of Depreciation and Amortization) - For the year ended December 31, 2022, direct operating expenses (exclusive of depreciation and amortization) were \$426 million compared to \$369 million for the year ended December 31, 2021. The increase in the current period was primarily due to personnel costs, repairs and maintenance expense, electricity costs, and natural gas costs. On a total throughput barrel basis, direct operating expenses increased to \$5.68 per barrel from \$4.83 per barrel, as a function of the increased expense in 2022, compounded by the decrease in total throughput in 2022 compared to 2021 caused by the Wynnewood turnaround in the first quarter of 2022, the startup of the RDU in the second quarter of 2022, and minor plant outages during 2022.



Depreciation and Amortization Expense - For the year ended December 31, 2022, depreciation and amortization expense decreased \$16 million compared to the year ended December 31, 2021, primarily due to assets being fully depreciated in 2021 and early 2022.

Selling, General, and Administrative Expenses, and Other - For the year ended December 31, 2022, selling, general and administrative expenses and other was \$99 million compared to \$76 million for the year ended December 31, 2021. The increase was primarily a result of increased personnel costs, driven primarily by increased share-based and incentive-based compensation, and loss on asset disposals in 2022 as compared to 2021.

Nitrogen Fertilizer Segment

Utilization and Production Volumes - The following tables summarize the ammonia utilization at the Nitrogen Fertilizer Segment's facility in Coffeyville, Kansas (the "Coffeyville Fertilizer Facility") and East Dubuque, Illinois (the "East Dubuque Fertilizer Facility"). Utilization is an important measure used by management to assess operational output at each of the Nitrogen Fertilizer Segment's facilities. Utilization is calculated as actual tons of ammonia produced divided by capacity.

Utilization is presented solely on ammonia production, rather than each nitrogen product, as it provides a comparative baseline against industry peers and eliminates the disparity of facility configurations for upgrade of ammonia into other nitrogen products. With production primarily focused on ammonia upgrade capabilities, we believe this measure provides a meaningful view of how we operate.

Gross tons produced for ammonia represent the total ammonia produced, including ammonia produced that was upgraded into other fertilizer products. Net tons available for sale represent the ammonia available for sale that was not upgraded into other fertilizer products. Production for the year ended December 31, 2022 was impacted by unplanned downtime associated with the Messer air separation plant (the "Messer Outages") at the Coffeyville Fertilizer Facility and various pieces of equipment at the East Dubuque Fertilizer Facility in 2022, along with the completion of the planned turnarounds at both

fertilizer facilities during the third quarter of 2022. The table below presents all of these Nitrogen Fertilizer Segment metrics for the years ended December 31, 2022, 2021, and 2020:

	Year Ended December 31,		
	2022	2021	2020
Consolidated Ammonia Utilization	81 %	92 %	98 %
<i>Production Volumes (in thousands of tons)</i>			
Ammonia (gross produced)	703	807	852
Ammonia (net available for sale)	213	275	303
UAN	1,140	1,208	1,303

On a consolidated basis, the Nitrogen Fertilizer Segment's utilization decreased 11% to 81% for the year ended December 31, 2022 compared to the year ended December 31, 2021. This decrease was primarily due to the completion of planned turnarounds at both fertilizer facilities in the third quarter of 2022, along with unplanned downtime in 2022 associated with the Messer Outages at the Coffeyville Fertilizer Facility and various pieces of equipment at the East Dubuque Fertilizer Facility, compared to unplanned downtime at the Coffeyville Fertilizer Facility and the East Dubuque Fertilizer Facility in July and September 2021, respectively, due to externally driven power outages and downtime at the East Dubuque Fertilizer Facility in October 2021 for equipment repair.

Sales and Pricing per Ton - Two of the Nitrogen Fertilizer Segment's key operating metrics are total sales volumes for ammonia and UAN, along with the product pricing per ton realized at the gate. Product pricing at the gate represents net sales less freight revenue divided by product sales volume in tons and is shown in order to provide a pricing measure comparable across the fertilizer industry.

	Year Ended December 31,		
	2022	2021	2020
<i>Consolidated sales (thousand tons)</i>			
Ammonia	195	269	332
UAN	1,144	1,196	1,312
<i>Consolidated product pricing at gate (dollars per ton)</i>			
Ammonia	\$ 1,024	\$ 544	\$ 284
UAN	486	264	152

For the year ended December 31, 2022, total product sales volumes were unfavorable, driven by lower production at both facilities due to the planned turnarounds in the third quarter of 2022, as well as increased downtime from the Messer Outages at the Coffeyville Fertilizer Facility and various pieces of equipment at the East Dubuque Fertilizer Facility in 2022, as compared to 2021. For the year ended December 31, 2022, total product sales were favorable driven by sales price increases of 88% for ammonia and 84% for UAN. Ammonia and UAN sales prices were favorable primarily due to continued tight market conditions due to lower fertilizer supply driven by ongoing impacts from the Russia-Ukraine conflict, including reduced production from Europe as a result of the high energy price environment, and higher crop pricing.

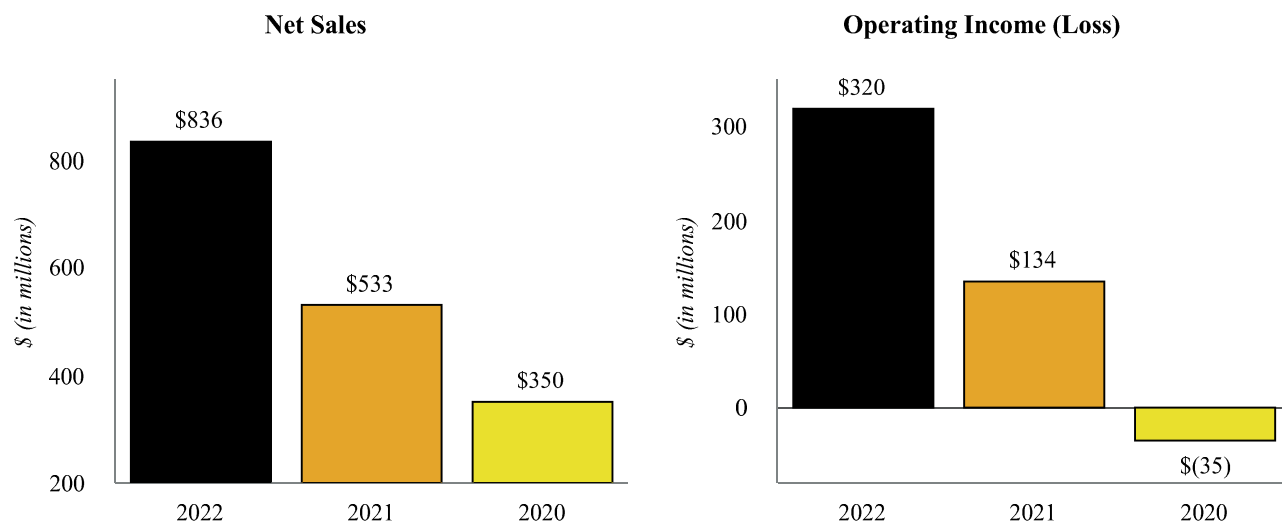
Feedstock - Our Coffeyville Fertilizer Facility utilizes a pet coke gasification process to produce nitrogen fertilizer. Our East Dubuque Fertilizer Facility uses natural gas in its production of ammonia. The table below presents these feedstocks for both facilities within the Nitrogen Fertilizer Segment for the years ended December 31, 2022, 2021, and 2020:

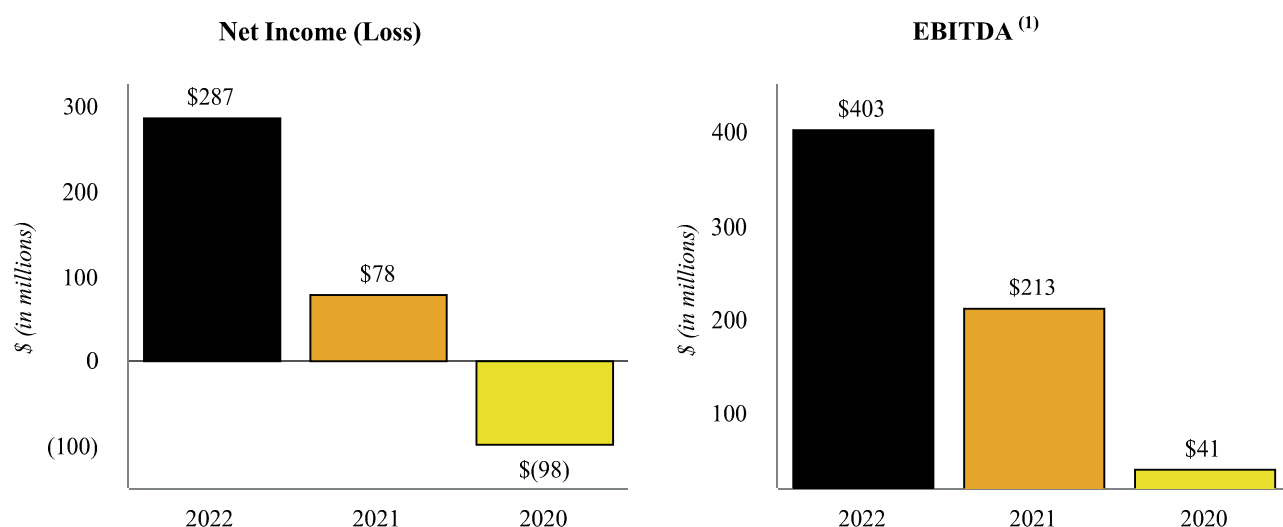
	Year Ended December 31,		
	2022	2021	2020
Petroleum coke used in production (<i>thousand tons</i>)	425	514	523
Petroleum coke (<i>dollars per ton</i>)	\$ 52.88	\$ 44.69	\$ 35.25
Natural gas used in production (<i>thousands of MMBtu</i>) ⁽¹⁾	6,905	8,049	8,611
Natural gas used in production (<i>dollars per MMBtu</i>) ⁽¹⁾	\$ 6.66	\$ 3.95	\$ 2.31
Natural gas in cost of materials and other (<i>thousands of MMBtu</i>) ⁽¹⁾	6,701	7,848	9,349
Natural gas in cost of materials and other (<i>dollars per MMBtu</i>) ⁽¹⁾	\$ 6.37	\$ 3.83	\$ 2.35

(1) The feedstock natural gas shown above does not include natural gas used for fuel. The cost of fuel natural gas is included in Direct operating expenses (exclusive of depreciation and amortization).

Nitrogen Fertilizer Segment Financial Highlights

Overview - The Nitrogen Fertilizer Segment's operating income and net income for the year ended December 31, 2022 were \$320 million and \$287 million, respectively, representing improvements of \$186 million and \$209 million, respectively, compared to operating income and net income of \$134 million and \$78 million, respectively, for the year ended December 31, 2021. These improvements were primarily driven by higher product sales prices for UAN and ammonia in 2022, partially offset by reduced sales volumes, increased costs associated with the two planned turnarounds during the third quarter of 2022, and increased feedstock prices in 2022.





(1) See “Non-GAAP Reconciliations” section below for reconciliations of the non-GAAP measures shown above.

Net Sales - The Nitrogen Fertilizer Segment’s net sales increased by \$303 million to \$836 million for the year ended December 31, 2022 compared to the year ended December 31, 2021. This increase was primarily due to favorable UAN and ammonia pricing conditions which contributed \$348 million in higher revenues, partially offset by decreased sales volumes, which reduced revenues by \$54 million compared to the year ended December 31, 2021. For the years ended December 31, 2022 and 2021, net sales included \$35 million and \$31 million in freight revenue, respectively, and \$11 million and \$11 million in other revenue, respectively.

The following table demonstrates the impact of changes in sales volumes and pricing for the primary components of net sales, excluding urea products, freight, and other revenue, for the year ended December 31, 2022 compared to the year ended December 31, 2021:

(in millions)	Price Variance		Volume Variance	
	\$		\$	
UAN	\$	254	\$	(14)
Ammonia		94		(40)

For the year ended December 31, 2022 compared to the year ended December 31, 2021, ammonia and UAN sales prices were favorable primarily due to continued tight market conditions due to lower fertilizer supply driven by ongoing impacts from the Russia-Ukraine conflict, including reduced production from Europe as a result of the high energy price environment, and higher crop pricing. Total product sales volumes were unfavorable driven by lower production due to unplanned downtime associated with the Messer Outages at the Coffeyville Fertilizer Facility and various pieces of equipment at the East Dubuque Fertilizer Facility in 2022, along with the completion of the planned turnarounds at both fertilizer facilities during the third quarter of 2022.

Cost of Materials and Other - Cost of materials and other for the year ended December 31, 2022 was \$131 million, compared to \$98 million for the year ended December 31, 2021. The \$33 million increase was driven primarily by increases in purchases of nitrogen and ammonia of \$17 million, increased natural gas costs of \$14 million, and higher distribution costs of \$4 million. These increases were partially offset by an inventory build contributing \$2 million.

Direct Operating Expenses (exclusive of depreciation and amortization) - For the year ended December 31, 2022, direct operating expenses (exclusive of depreciation and amortization) were \$270 million compared to \$199 million for the year ended December 31, 2021. The \$72 million variance was primarily due to higher turnaround costs incurred during the planned turnarounds at both fertilizer facilities during 2022, which increased turnaround expenses by \$31 million, increased repair and maintenance expenses by \$15 million, and increased personnel costs by \$3 million. In addition to these turnaround related increases, there were \$14 million of higher prices for natural gas for fuel purposes, \$4 million of increased operating materials

and office costs, \$4 million related to higher electricity pricing, and \$3 million of higher insurance costs. These increases were partially offset by an inventory build contributing \$3 million.

Non-GAAP Measures

Our management uses certain non-GAAP performance measures, and reconciliations to those measures, to evaluate current and past performance and prospects for the future to supplement our financial information presented in accordance with accounting principles generally accepted in the United States (“GAAP”). These non-GAAP financial measures are important factors in assessing our operating results and profitability and include the performance and liquidity measures defined below.

The following are non-GAAP measures we present for the year ended December 31, 2022:

EBITDA - Consolidated net income (loss) before (i) interest expense, net, (ii) income tax expense (benefit) and (iii) depreciation and amortization expense.

Petroleum EBITDA and Nitrogen Fertilizer EBITDA - Segment net income (loss) before segment (i) interest expense, net, (ii) income tax expense (benefit), and (iii) depreciation and amortization.

Refining Margin - The difference between our Petroleum Segment net sales and cost of materials and other.

Refining Margin, adjusted for Inventory Valuation Impacts - Refining Margin adjusted to exclude the impact of current period market price and volume fluctuations on crude oil and refined product inventories purchased in prior periods and lower of cost or net realizable value adjustments, if applicable. We record our commodity inventories on the first-in-first-out basis. As a result, significant current period fluctuations in market prices and the volumes we hold in inventory can have favorable or unfavorable impacts on our refining margins as compared to similar metrics used by other publicly-traded companies in the refining industry.

Refining Margin and Refining Margin adjusted for Inventory Valuation Impacts, per Throughput Barrel - Refining Margin and Refining Margin adjusted for Inventory Valuation Impacts divided by the total throughput barrels during the period, which is calculated as total throughput barrels per day times the number of days in the period.

Direct Operating Expenses per Throughput Barrel - Direct operating expenses for our Petroleum Segment divided by total throughput barrels for the period, which is calculated as total throughput barrels per day times the number of days in the period.

Adjusted EBITDA, Adjusted Petroleum EBITDA and Adjusted Nitrogen Fertilizer EBITDA - EBITDA, Petroleum EBITDA and Nitrogen Fertilizer EBITDA adjusted for certain significant non-cash items and items that management believes are not attributable to or indicative of our on-going operations or that may obscure our underlying results and trends.

Adjusted Earnings (Loss) per Share - Earnings (loss) per share adjusted for certain significant non-cash items and items that management believes are not attributable to or indicative of our on-going operations or that may obscure our underlying results and trends.

Free Cash Flow - Net cash provided by (used in) operating activities less capital expenditures and capitalized turnaround expenditures.

Net Debt and Finance Lease Obligations - Net debt and finance lease obligations is total debt and finance lease obligations reduced for cash and cash equivalents.

Total Debt and Net Debt and Finance Lease Obligations to EBITDA Exclusive of Nitrogen Fertilizer - Total debt and net debt and finance lease obligations is calculated as the consolidated debt and net debt and finance lease obligations less the Nitrogen Fertilizer Segment’s debt and net debt and finance lease obligations as of the most recent period ended divided by EBITDA exclusive of the Nitrogen Fertilizer Segment for the most recent twelve-month period.

We present these measures because we believe they may help investors, analysts, lenders and ratings agencies analyze our results of operations and liquidity in conjunction with our U.S. GAAP results, including but not limited to our operating performance as compared to other publicly-traded companies in the refining and fertilizer industries, without regard to historical

cost basis or financing methods and our ability to incur and service debt and fund capital expenditures. Non-GAAP measures have important limitations as analytical tools, because they exclude some, but not all, items that affect net earnings and operating income. These measures should not be considered substitutes for their most directly comparable U.S. GAAP financial measures. See “Non-GAAP Reconciliations” included herein for reconciliation of these amounts. Due to rounding, numbers presented within this section may not add or equal to numbers or totals presented elsewhere within this document.

Factors Affecting Comparability of Our Financial Results

Our historical results of operations for the periods presented may not be comparable with prior periods or to our results of operations in the future for the reasons discussed below.

Petroleum Segment

Coffeyville Refinery - The next planned turnaround of the refinery in Coffeyville, Kansas (the “Coffeyville Refinery”) is expected to start in the spring of 2023, with pre-planning expenditures of \$14 million capitalized for the year ended December 31, 2022.

Wynnewood Refinery - The Wynnewood Refinery began a major scheduled turnaround in late February 2022 that was completed in early April 2022. We capitalized expenditures of \$67 million and \$7 million related to turnaround activities for the years ended December 31, 2022 and 2021, respectively.

Nitrogen Fertilizer Segment

Coffeyville Fertilizer Facility - A planned turnaround at the Coffeyville Fertilizer Facility commenced in July 2022 and was completed in mid-August 2022. For the year ended December 31, 2022, we incurred turnaround expense of \$12 million. For the year ended December 31, 2021, we incurred turnaround expense of less than \$1 million related to planning for the Coffeyville Fertilizer Facility’s turnaround completed during the third quarter of 2022. During the planning and execution of this turnaround, we updated the estimated useful lives of certain assets, which resulted in additional depreciation expense of \$6 million during the year ended December 31, 2022. Additionally, the Coffeyville Fertilizer Facility had planned downtime during the fourth quarter of 2021 at a cost of \$2 million.

East Dubuque Fertilizer Facility - A planned turnaround at the East Dubuque Fertilizer Facility commenced in August 2022 and was completed in mid-September 2022. For the year ended December 31, 2022, we incurred turnaround expense of \$21 million. For the year ended December 31, 2021, we incurred turnaround expense of \$1 million related to planning for the East Dubuque Fertilizer Facility’s turnaround completed during the third quarter of 2022. During the planning and execution of this turnaround, we updated the estimated useful lives of certain assets, which resulted in additional depreciation expense of \$6 million and \$5 million during the years ended December 31, 2022 and 2021, respectively.

Non-GAAP Reconciliations

Reconciliation of Net Income (Loss) to EBITDA and Adjusted EBITDA

(in millions)	Year Ended December 31,		
	2022	2021	2020
Net income (loss)	\$ 644	\$ 74	\$ (320)
Interest expense, net	85	117	130
Income tax expense (benefit)	157	(8)	(95)
Depreciation and amortization	288	279	278
EBITDA	1,174	462	(7)
<i>Adjustments:</i>			
Revaluation of RFS liability	135	63	59
Gain on marketable securities	—	(81)	(34)
Unrealized loss (gain) on derivatives, net	5	(16)	9
Inventory valuation impacts, (favorable) unfavorable	(24)	(127)	58
Goodwill impairment	—	—	41
Call Option Lawsuits settlement ⁽¹⁾	79	—	—
Adjusted EBITDA	\$ 1,369	\$ 301	\$ 126

Reconciliation of Basic and Diluted Earnings (Loss) per Share to Adjusted Earnings (Loss) per Share

	Year Ended December 31,		
	2022	2021	2020
Basic and diluted earnings (loss) per share	\$ 4.60	\$ 0.25	\$ (2.54)
<i>Adjustments:</i> ⁽²⁾			
Revaluation of RFS liability	1.00	0.46	0.43
Gain on marketable securities	—	(0.59)	(0.25)
Unrealized loss (gain) on derivatives, net	0.04	(0.12)	0.07
Inventory valuation impacts, (favorable) unfavorable	(0.18)	(0.93)	0.43
Goodwill impairment ⁽³⁾	—	—	0.07
Call Option Lawsuits settlement ⁽¹⁾	0.58	—	—
Adjusted earnings (loss) per share	\$ 6.04	\$ (0.93)	\$ (1.79)

(1) Refer to Part II, Item 8, Note 11 (“Commitments and Contingencies”) of this Report for further discussion of this settlement.

(2) Amounts are shown after-tax, using the Company’s marginal tax rate, and are presented on a per share basis using the weighted average shares outstanding for each period.

(3) Amount is shown exclusive of noncontrolling interests.

Reconciliation of Net Cash Provided By Operating Activities to Free Cash Flow

(in millions)	Year Ended December 31,		
	2022	2021	2020
Net cash provided by operating activities	\$ 967	\$ 396	\$ 90
<i>Less:</i>			
Capital expenditures	(191)	(224)	(124)
Capitalized turnaround expenditures	(83)	(5)	(159)
Free cash flow	\$ 693	\$ 167	\$ (193)

Reconciliation of Petroleum Segment Net Income (Loss) to EBITDA and Adjusted EBITDA

(in millions)	Year Ended December 31,		
	2022	2021	2020
Petroleum net income (loss)	\$ 759	\$ 4	\$ (271)
Interest income, net	(41)	(21)	(5)
Depreciation and amortization	187	203	202
Petroleum EBITDA	905	186	(74)
<i>Adjustments:</i>			
Revaluation of RFS liability	135	63	59
Unrealized loss (gain) on derivatives, net	3	(16)	9
Inventory valuation impacts, (favorable) unfavorable ^{(1) (2)}	(22)	(127)	58
Petroleum Adjusted EBITDA	\$ 1,021	\$ 106	\$ 52

Reconciliation of Petroleum Segment Gross Profit (Loss) to Refining Margin and Refining Margin Adjusted for Inventory Valuation Impact

(in millions)	Year Ended December 31,		
	2022	2021	2020
Net sales	\$ 9,919	\$ 6,721	\$ 3,586
<i>Less:</i>			
Cost of materials and other	(8,488)	(6,100)	(3,288)
Direct operating expenses (exclusive of depreciation and amortization)	(426)	(369)	(319)
Depreciation and amortization	(182)	(197)	(194)
Gross profit (loss)	823	55	(215)
<i>Add:</i>			
Direct operating expenses (exclusive of depreciation and amortization)	426	369	319
Depreciation and amortization	182	197	194
Refining Margin	1,431	621	298
Inventory valuation impacts, (favorable) unfavorable ^{(1) (2)}	(22)	(127)	58
Refining margin, adjusted for inventory valuation impacts	\$ 1,409	\$ 494	\$ 356

- (1) The Petroleum Segment's basis for determining inventory value under GAAP is First-In, First-Out ("FIFO"). Changes in crude oil prices can cause fluctuations in the inventory valuation of crude oil, work in process and finished goods, thereby resulting in a favorable inventory valuation impact when crude oil prices increase and an unfavorable inventory valuation impact when crude oil prices decrease. The inventory valuation impact is calculated based upon inventory values at the beginning of the accounting period and at the end of the accounting period. In order to derive the inventory valuation impact per total throughput barrel, we utilize the total dollar figures for the inventory valuation impact and divide by the number of total throughput barrels for the period.
- (2) Includes an inventory valuation charge of \$58 million recorded in the first quarter of 2020, as inventories were reflected at the lower of cost or net realizable value. No adjustment was necessary during the years ended December 31, 2022 or December 31, 2021 or any other period in 2020.

Reconciliation of Petroleum Segment Total Throughput Barrels

	Year Ended December 31,		
	2022	2021	2020
Total throughput barrels per day	205,288	209,084	183,295
Days in the period	365	365	366
Total throughput barrels	74,930,140	76,315,701	67,085,913

Reconciliation of Petroleum Segment Refining Margin per Total Throughput Barrel

(in millions, except per total throughput barrel)

	Year Ended December 31,		
	2022	2021	2020
Refining margin	\$ 1,431	\$ 621	\$ 298
Divided by: total throughput barrels	75	76	67
Refining margin per total throughput barrel	\$ 19.09	\$ 8.14	\$ 4.44

Reconciliation of Petroleum Segment Refining Margin Adjusted for Inventory Valuation Impact per Total Throughput Barrel

(in millions, except per total throughput barrel)

	Year Ended December 31,		
	2022	2021	2020
Refining margin, adjusted for inventory valuation impact	\$ 1,409	\$ 494	\$ 356
Divided by: total throughput barrels	75	76	67
Refining margin adjusted for inventory valuation impact per total throughput barrel	\$ 18.80	\$ 6.48	\$ 5.31

Reconciliation of Petroleum Segment Direct Operating Expenses per Total Throughput Barrel

(in millions, except per total throughput barrel)

	Year Ended December 31,		
	2022	2021	2020
Direct operating expenses (exclusive of depreciation and amortization)	\$ 426	\$ 369	\$ 319
Divided by: total throughput barrels	75	76	67
Direct operating expenses per total throughput barrel	\$ 5.68	\$ 4.83	\$ 4.76

Reconciliation of Nitrogen Fertilizer Segment Net Income (Loss) to EBITDA and Adjusted EBITDA

(in millions)

	Year Ended December 31,		
	2022	2021	2020
Nitrogen Fertilizer net income (loss)	\$ 287	\$ 78	\$ (98)
Interest expense, net	34	61	63
Depreciation and amortization	82	74	76
Nitrogen Fertilizer EBITDA	403	213	41
<i>Adjustments:</i>			
Goodwill impairment	—	—	41
Nitrogen Fertilizer Adjusted EBITDA	\$ 403	\$ 213	\$ 82

Reconciliation of Total Debt and Net Debt and Finance Lease Obligations to EBITDA Exclusive of Nitrogen Fertilizer

(in millions)

	Year Ended December 31, 2022
Total debt and finance lease obligations ⁽¹⁾	\$ 1,591
<i>Less:</i>	
Nitrogen Fertilizer debt and finance lease obligations ⁽¹⁾	<u>\$ (547)</u>
Total debt and finance lease obligations exclusive of Nitrogen Fertilizer	<u>1,044</u>
 EBITDA exclusive of Nitrogen Fertilizer	 <u>\$ 771</u>
 Total debt and finance lease obligations to EBITDA exclusive of Nitrogen Fertilizer	 <u>1.35</u>
 Consolidated cash and cash equivalents	 \$ 510
<i>Less:</i>	
Nitrogen Fertilizer cash and cash equivalents	<u>(86)</u>
Cash and cash equivalents exclusive of Nitrogen Fertilizer	<u>424</u>
 Net debt and finance lease obligations exclusive of Nitrogen Fertilizer ⁽²⁾	 <u>\$ 620</u>
 Net debt and finance lease obligations to EBITDA exclusive of Nitrogen Fertilizer ⁽²⁾	 <u>\$ 0.80</u>

(1) Amounts are shown inclusive of the current portion of long-term debt and finance lease obligations.

(2) Net debt represents total debt and finance lease obligations exclusive of cash and cash equivalents.

	Three Months Ended				Year Ended December 31, 2022 ⁽¹⁾
(in millions)	March 31, 2022	June 30, 2022	September 30, 2022	December 31, 2022	
<i>Consolidated</i>					
Net income	\$ 153	\$ 239	\$ 80	\$ 172	\$ 644
Interest expense, net	24	23	19	18	85
Income tax expense	34	66	7	50	157
Depreciation and amortization	67	73	75	73	288
EBITDA	<u>\$ 278</u>	<u>\$ 401</u>	<u>\$ 181</u>	<u>\$ 313</u>	<u>\$ 1,174</u>
 <i>Nitrogen Fertilizer</i>					
Net income (loss)	\$ 94	\$ 118	\$ (20)	\$ 95	\$ 287
Interest expense, net	10	8	8	8	34
Depreciation and amortization	19	21	22	19	82
EBITDA	<u>\$ 123</u>	<u>\$ 147</u>	<u>\$ 10</u>	<u>\$ 122</u>	<u>\$ 403</u>
 EBITDA exclusive of Nitrogen Fertilizer	 \$ 155	 \$ 254	 \$ 171	 \$ 191	 \$ 771

(1) Due to rounding, numbers within this table may not add or equal to totals presented.

Liquidity and Capital Resources

Our principal source of liquidity has historically been cash from operations. Our principal uses of cash are for working capital, capital expenditures, funding our debt service obligations, and paying dividends to our stockholders, as further discussed below.

Following the significant declines in demand and pricing for crude oil and refined products in 2020 due to the COVID-19 pandemic, market conditions improved steadily throughout 2021 and into 2022. In the first quarter of 2022, following the Russian invasion of Ukraine, crude oil and refined product prices increased and have been volatile over concerns of a reduction in global supply of these products due to sanctions placed on Russian exports by the U.S. and numerous other countries. Despite the extreme volatility in commodity pricing, the increase in refined product pricing during 2021 and 2022 has had a favorable impact on our business and has not significantly impacted our primary source of liquidity.

While we believe demand for crude oil and refined products has stabilized, there is still uncertainty on the horizon due to the potential for recession driven demand destruction and any potential resolution of the Russia-Ukraine conflict. We continue to maintain our focus on safe and reliable operations, maintain an appropriate level of cash to fund ongoing operations, and protect our balance sheet. As a result of these factors, the Board elected to declare cash dividends of \$0.40 for the first, second, and third quarters of 2022 and \$0.50 for the fourth quarter of 2022. The Board also elected to declare special dividends equal to \$2.60 and \$1.00 during the second and third quarters of 2022, respectively. No quarterly dividends were declared for the fourth quarter of 2021. These decisions support the Company's continued focus on financial discipline through a balanced approach of evaluation of strategic investment opportunities and stockholder dividends while maintaining adequate capital requirements for ongoing operations throughout the environment of uncertainty. The Board will continue to evaluate the economic environment, the Company's cash needs, optimal uses of cash, and other applicable factors, and may elect to make additional changes to the Company's dividend (if any) in future periods. Additionally, in executing financial discipline, we have successfully implemented and are maintaining the following measures:

- Deferred the majority of our growth capital spending, with the exception of the RDU project and construction of the renewables feedstock pretreater project at the Wynnewood Refinery;
- Focused refining maintenance capital expenditures to only include those projects which are a priority to support continuing safe and reliable operations, or which we consider required to support future activities;
- Focused future capital allocation to high-return assets and opportunities that advance participation in the energy industry transformation;
- Continued to focus on disciplined management of operational and general and administrative cost reductions; and
- For the Petroleum Segment, deferred the turnaround at the refinery in Coffeyville, Kansas (the "Coffeyville Refinery") from fall of 2021 to spring of 2023.

When considering the market conditions and actions outlined above, we currently believe that our cash from operations and existing cash and cash equivalents, along with borrowings, as necessary, will be sufficient to satisfy anticipated cash requirements associated with our existing operations for at least the next 12 months. However, our future capital expenditures and other cash requirements could be higher than we currently expect as a result of various factors including, but not limited to, rising material and labor costs, the costs associated with complying with the Renewable Fuel Standard's outcome of litigation and other factors. Additionally, our ability to generate sufficient cash from our operating activities and secure additional financing depends on our future operational performance, which is subject to general economic, political, financial, competitive, and other factors, some of which may be beyond our control.

Depending on the needs of our business, contractual limitations and market conditions, we may from time to time seek to issue equity securities, incur additional debt, issue debt securities, or redeem, repurchase, refinance, or retire our outstanding debt through privately negotiated transactions, open market repurchases, redemptions, exchanges, tender offers or otherwise, but we are under no obligation to do so. There can be no assurance that we will seek to do any of the foregoing or that we will be able to do any of the foregoing on terms acceptable to us or at all.

On February 22, 2022, CVR Partners redeemed the remaining \$65 million in aggregate principal amount of its 2023 UAN Notes at par, plus accrued and unpaid interest. This transaction represents a significant and favorable change in CVR Partners' cash flow and liquidity position, with annual savings of approximately \$6 million in future interest expense. On June 30, 2022, CVR Refining and certain of its subsidiaries entered into Amendment No. 3 to the Amended and Restated ABL Credit

Agreement (as amended, the “Petroleum ABL”). The Petroleum ABL is a senior secured asset based revolving credit facility in an aggregate principal amount of up to \$275 million and a maturity date of June 30, 2027. Refer to Part II, Item 8, Note 6 (“Long-Term Debt and Finance Lease Obligations”) of this Report for further discussion. The Company, and its subsidiaries, were in compliance with all applicable covenants under their respective debt instruments as of December 31, 2022, as applicable.

We do not have any “off-balance sheet arrangements” as such term is defined within the rules and regulations of the SEC.

Cash and Other Liquidity

As of December 31, 2022, we had total liquidity of approximately \$797 million which consisted of consolidated cash and cash equivalents of \$510 million, \$252 million available under the Petroleum ABL, and \$35 million available under the Asset Based Credit Agreement (“Nitrogen Fertilizer ABL”). As of December 31, 2021, we had \$510 million in cash and cash equivalents.

(in millions)

CVR Partners:

9.25% Senior Secured Notes, due June 2023 ⁽¹⁾

6.125% Senior Notes, due June 2028

Unamortized discount and debt issuance costs

Total CVR Partners debt

CVR Energy:

5.25% Senior Notes, due February 2025

5.75% Senior Notes, due February 2028

Unamortized debt issuance costs

Total CVR Energy debt

Total long-term debt

	December 31, 2022	December 31, 2021
	\$ —	\$ 65
	550	550
	(3)	(4)
	\$ 547	\$ 611
	\$ 600	\$ 600
	400	400
	(4)	(5)
	\$ 996	\$ 995
	1,543	1,606

(1) The \$65 million outstanding balance of the 2023 UAN Notes was paid in full on February 22, 2022 at par, plus accrued and unpaid interest.

CVR Partners

As of December 31, 2022, the Nitrogen Fertilizer Segment has the 6.125% Senior Secured Notes, due June 2028 (the “2028 UAN Notes”) and the Nitrogen Fertilizer ABL, the proceeds of which may be used to fund working capital, capital expenditures, and for other general corporate purposes. Refer to Part II, Item 8, Note 6 (“Long-Term Debt and Finance Lease Obligations”) of this Report for further discussion.

CVR Refining

As of December 31, 2022, the Petroleum Segment has the Petroleum ABL, the proceeds of which may be used to fund working capital, capital expenditures, and for other general corporate purposes. Refer to Part II, Item 8, Note 6 (“Long-Term Debt and Finance Lease Obligations”) of this Report for further discussion.

CVR Energy

As of December 31, 2022, CVR Energy has the 5.25% Senior Notes, due 2025 (the “2025 Notes”) and the 5.75% Senior Notes, due 2028 (the “2028 Notes”) and together with the 2025 Notes, the “Notes”), the net proceeds of which may be used for general corporate purposes, which may include funding acquisitions, capital projects, and/or share repurchases or other distributions to our stockholders. Refer to Part II, Item 8, Note 6 (“Long-Term Debt and Finance Lease Obligations”) of this Report for further discussion.

Capital Spending

We divide capital spending needs into two categories: maintenance and growth. Maintenance capital spending includes non-discretionary maintenance projects and projects required to comply with environmental, health, and safety regulations. Growth capital projects generally involve an expansion of existing capacity and/or a reduction in direct operating expenses. We undertake growth capital spending based on the expected return on incremental capital employed.

In April 2022, we completed the renewable diesel project at our Wynnewood Refinery by converting the refinery's hydrocracker to a RDU capable of producing approximately 100 million gallons of renewable diesel per year at a total cost of \$179 million. In November 2021, the Board approved the renewable feedstock pretreater project at the Wynnewood Refinery, which is expected to be completed in the third quarter of 2023 at an estimated cost of \$95 million.

Our total capital expenditures for the year ended December 31, 2022, along with our estimated expenditures for 2023, by segment, are as follows:

(in millions)	2022 Actual			2023 Estimate ⁽¹⁾					
				Maintenance		Growth		Total	
	Maintenance	Growth	Total	Low	High	Low	High	Low	High
Petroleum	\$ 84	\$ 2	\$ 86	\$ 91	\$ 100	\$ 30	\$ 33	\$ 121	\$ 133
Renewables ⁽²⁾	2	67	69	—	1	39	47	39	48
Nitrogen Fertilizer	40	1	41	31	33	2	3	33	36
Other	7	—	7	7	8	—	—	7	8
Total	\$ 133	\$ 70	\$ 203	\$ 129	\$ 142	\$ 71	\$ 83	\$ 200	\$ 225

(1) Total 2023 estimated capitalized costs include approximately \$6 million of growth related projects that will require additional approvals before commencement.

(2) Renewables reflects spending on the Wynnewood Refinery's RDU and renewable feedstock pretreater projects. As of December 31, 2022, Renewables does not meet the definition of a reportable segment as defined under Accounting Standards Codification Topic 280.

Our estimated capital expenditures are subject to change due to unanticipated changes in the cost, scope, and completion time for capital projects. For example, we may experience unexpected changes in labor or equipment costs necessary to comply with government regulations or to complete projects that sustain or improve the profitability of the Refineries or Facilities. We may also accelerate or defer some capital expenditures from time to time. Capital spending for CVR Partners is determined by the board of directors of its general partner (the "UAN GP Board"). We will continue to monitor market conditions and make adjustments, if needed, to our current capital spending or turnaround plans.

The Petroleum Segment began a major scheduled turnaround at the Wynnewood Refinery in late February 2022 that was completed in early April 2022. We capitalized expenditures of \$67 million and \$7 million for the years ended December 31, 2022 and 2021, respectively. The Petroleum Segment's next planned turnaround at the Coffeyville Refinery is currently expected to start in the spring of 2023, with pre-planning expenditures of \$14 million capitalized for the year ended December 31, 2022.

The Nitrogen Fertilizer Segment's planned turnaround at the Coffeyville Fertilizer Facility commenced in July 2022 and was completed in mid-August 2022. The planned turnaround at the East Dubuque Fertilizer Facility commenced in August 2022 and was completed in mid-September 2022. For the years ended December 31, 2022 and 2021, we incurred turnaround expense of \$12 million and less than \$1 million, respectively, at the Coffeyville Fertilizer Facility and \$21 million and \$1 million, respectively, at the East Dubuque Fertilizer Facility. Additionally, the Coffeyville Fertilizer Facility had planned downtime for certain maintenance activities during the fourth quarter of 2021 at a cost of \$2 million.

Dividends to CVR Energy Stockholders

Dividends, if any, including the payment, amount and timing thereof, are determined at the discretion of our Board. IEP, through its ownership of the Company's common stock, is entitled to receive dividends that are declared and paid by the Company based on the number of shares held at each record date. The following table presents quarterly dividends, excluding any special dividends, paid to the Company's stockholders, including IEP, during 2022 (amounts presented in table below may not add to totals presented due to rounding):

Related Period	Date Paid	Quarterly Dividends Per Share	Quarterly Dividends Paid (in millions)		
			Public Stockholders	IEP	Total
2022 - 1st Quarter	May 23, 2022	\$ 0.40	\$ 12	\$ 28	\$ 40
2022 - 2nd Quarter	August 22, 2022	0.40	12	28	40
2022 - 3rd Quarter	November 21, 2022	0.40	12	28	40
Total 2022 quarterly dividends		\$ 1.20	\$ 35	\$ 85	\$ 121

No quarterly dividends were paid during the first quarter of 2022 related to the fourth quarter of 2021, and there were no quarterly dividends declared or paid during 2021 related to the first, second, and third quarters of 2021 and fourth quarter of 2020. During the year ended December 31, 2020, the Company paid quarterly dividends totaling \$1.20 per common share, or \$121 million. Of these dividends, IEP received \$85 million due to its ownership interest in the Company's shares.

On August 1, 2022 and October 31, 2022, the Company also declared special dividends of \$2.60 and \$1.00 per share, or \$261 million and \$101 million, respectively, which were paid on August 22, 2022 and November 21, 2022, respectively. Of these amounts, IEP received \$185 million and \$71 million, respectively, due to its ownership interest in the Company's shares.

On May 26, 2021, the Company announced a special dividend of approximately \$492 million, or equivalent to \$4.89 per share of the Company's common stock, to be paid in a combination of cash (the "Cash Distribution") and the common stock of Delek US Holdings, Inc. ("Delek") held by the Company (the "Stock Distribution"). On June 10, 2021, the Company distributed an aggregate amount of approximately \$241 million, or \$2.40 per share of the Company's common stock, pursuant to the Cash Distribution, and approximately 10,539,880 shares of Delek common stock, which represented approximately 14.3% of the outstanding shares of Delek common stock, pursuant to the Stock Distribution. IEP received approximately 7,464,652 shares of common stock of Delek and \$171 million in cash. The Stock Distribution was recorded as a reduction to equity through a derecognition of our investment in Delek, and the Company recognized a gain of \$112 million from the initial investment in Delek through the date of the Stock Distribution.

For the fourth quarter of 2022, the Company, upon approval by the Company's Board on February 21, 2023, declared a cash dividend of \$0.50 per share, or \$50 million, which is payable March 13, 2023 to shareholders of record as of March 6, 2023. Of this amount, IEP will receive \$36 million due to its ownership interest in the Company's shares.

Distributions to CVR Partners' Unitholders

Distributions, if any, including the payment, amount and timing thereof, are subject to change at the discretion of the UAN GP Board. The following tables present distributions paid by CVR Partners to CVR Partners' unitholders, including amounts received by the Company, as of December 31, 2022 and 2021 (amounts presented in tables below may not add to totals presented due to rounding):

Related Period	Date Paid	Quarterly Distributions Per Common Unit	Quarterly Distributions Paid (in millions)		
			Public Unitholders	CVR Energy	Total
2021 - 4th Quarter	March 14, 2022	\$ 5.24	\$ 35	\$ 20	\$ 56
2022 - 1st Quarter	May 23, 2022	2.26	15	9	24
2022 - 2nd Quarter	August 22, 2022	10.05	67	39	106
2022 - 3rd Quarter	November 21, 2022	1.77	12	7	19
Total 2022 quarterly distributions		\$ 19.32	\$ 129	\$ 75	\$ 205

Related Period	Date Paid	Quarterly Distributions Per Common Unit	Quarterly Distributions Paid (in millions)		
			Public Unitholders	CVR Energy	Total
2021 - 2nd Quarter	August 23, 2021	\$ 1.72	\$ 11	\$ 7	\$ 18
2021 - 3rd Quarter	November 22, 2021	2.93	20	11	31
Total 2021 quarterly distributions		\$ 4.65	\$ 31	\$ 18	\$ 50

There were no quarterly distributions declared or paid by CVR Partners related to the first quarter of 2021 and the fourth quarter of 2020. During the year ended December 31, 2020, there were no quarterly distributions declared or paid by CVR Partners.

For the fourth quarter of 2022, CVR Partners, upon approval by the UAN GP Board on February 21, 2023, declared a distribution of \$10.50 per common unit, or \$111 million, which is payable March 13, 2023 to unitholders of record as of March 6, 2023. Of this amount, CVR Energy will receive approximately \$41 million, with the remaining amount payable to public unitholders.

Capital Structure

On October 23, 2019, the Board authorized a stock repurchase program (the “Stock Repurchase Program”). The Stock Repurchase Program would enable the Company to repurchase up to \$300 million of the Company’s common stock. Repurchases under the Stock Repurchase Program may be made from time-to-time through open market transactions, block trades, privately negotiated transactions or otherwise in accordance with applicable securities laws. The timing, price and amount of repurchases (if any) will be made at the discretion of management and are subject to market conditions as well as corporate, regulatory, debt maintenance and other considerations. While the Stock Repurchase Program currently has a duration of four years, it does not obligate the Company to acquire any stock and may be terminated by the Board at any time. As of December 31, 2022, the Company has not repurchased any of the Company’s common stock under the Stock Repurchase Program.

On May 6, 2020, CVR Partners announced that the UAN GP Board, on behalf of CVR Partners, authorized a unit repurchase program (the “Unit Repurchase Program”), which was increased on February 22, 2021. The Unit Repurchase Program, as increased, authorized CVR Partners to repurchase up to \$20 million of CVR Partners’ common units. During the years ended December 31, 2022 and 2021, CVR Partners repurchased 111,695 and 24,378 common units, respectively, on the open market in accordance with a repurchase agreement under Rules 10b5-1 and 10b-18 of the Securities Exchange Act of 1934, as amended, at a cost of \$12 million and \$1 million, respectively, exclusive of transaction costs, or an average price of \$110.98 and \$21.69 per common unit, respectively. As of December 31, 2022, CVR Partners had a nominal authorized amount remaining under the Unit Repurchase Program. This Unit Repurchase Program does not obligate CVR Partners to acquire any common units and may be cancelled or terminated by the UAN GP Board at any time.

Cash Flows

The following table sets forth our consolidated cash flows for the periods indicated below:

(in millions)	Year Ended December 31,		
	2022	2021	2020
<i>Net cash provided by (used in):</i>			
Operating activities	\$ 967	\$ 396	\$ 90
Investing activities	(271)	(238)	(423)
Financing activities	(696)	(315)	355
Net increase (decrease) in cash, cash equivalents and restricted cash	\$ —	\$ (157)	\$ 22

Operating Activities

The change in net cash provided by operating activities for the year ended December 31, 2022 compared to the year ended December 31, 2021 was primarily due to a \$712 million increase in EBITDA during 2022 as a result of stronger operations during 2022 compared to 2021. This is partially offset by a decrease in working capital of \$209 million primarily associated with lower liability variances in 2022 compared to 2021.

Investing Activities

The change in net cash used in investing activities for the year ended December 31, 2022 compared to the year ended December 31, 2021 was primarily due to an increase in our turnaround expenditures of \$78 million in 2022 compared to 2021 related to the planned turnaround at the Wynnewood Refinery completed in 2022 and a reduction in the proceeds from the sale of assets of \$7 million. These are partially offset by a reduction in capital expenditures of \$33 million, as the Wynnewood Refinery's RDU was completed in April 2022, and a \$20 million acquisition of pipeline assets in 2021 with no corresponding asset purchases in 2022.

Financing Activities

The change in net cash used in financing activities for the year ended December 31, 2022 compared to the year ended December 31, 2021 was primarily due to an increase in dividends paid to CVR Partners non-controlling interest holders and CVR Energy stockholders of \$98 million and \$242 million, respectively, during 2022 compared to 2021, a change of \$33 million in the redemption of the remaining balance of the 2023 UAN Notes in 2022 compared to the partial redemption of the 2023 UAN Notes and the 6.5% UAN Notes due April 2021 during 2021, and an increase of \$11 million in unit repurchases of CVR Partners' common units in 2022 compared to 2021.

Recent Accounting Pronouncements

Refer to Part II, Item 8, Note 2 ("Summary of Significant Accounting Policies") of this Report for a discussion of recent accounting pronouncements applicable to the Company.

Critical Accounting Estimates

We prepare our consolidated financial statements in accordance with GAAP requiring management to make judgments, assumptions, and estimates based on the best available information at the time. 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.

Inventory Valuation

The cost of our petroleum and nitrogen fertilizer product inventories is determined under the FIFO method. Our FIFO inventories are carried at the lower of cost or net realizable value. We compare the estimated realizable value of inventories to their cost by product at each of our facilities. In our Petroleum Segment, to determine the net realizable value of our inventories, we assume that crude oil and other feedstocks are converted into refined products, which requires us to make estimates regarding the refined products expected to be produced from those feedstocks and the conversion costs required to convert those feedstocks into refined products. We also estimate the usual and customary transportation costs required to move the inventory from our plants to the appropriate points of sale, if material. We then apply an estimated selling price to our inventories based primarily on actual prices observed subsequent to the end of the reporting period with any remaining volumes' selling price estimated using indicative market pricing available as of the time the estimate is made. If the net realizable value is less than cost, we recognize a loss for the difference in our statements of operations. For our Nitrogen Fertilizer Segment, depending on inventory levels, the per-ton realizable value of our fertilizer products is estimated using pricing on in-transit orders, pricing for open, fixed-price orders that have not shipped, and, if volumes remain unaccounted for, current management pricing estimates for fertilizer products. Management's estimate for current pricing reflects up-to-date pricing in each facility's market as of the end of each reporting period. Reductions to selling prices for unreimbursed freight costs are included to arrive at net realizable value, as applicable. During the year ended December 31, 2020, we recognized

losses on inventory of \$59 million to reflect net realizable value, primarily associated with our Petroleum Segment. No amounts were recognized for the years ended December 31, 2022 and 2021. Due to the amount and variability in volume of inventories maintained, changes in production costs, and the volatility of market pricing for our products, losses recognized to reflect inventories at the lower of cost or net realizable value could have a material impact on the Company's results of operations.

Impairment of Long-lived Assets

Long-lived assets used in operations are assessed for impairment whenever changes in facts and circumstances indicate a possible significant deterioration in future expected cash flows. If the sum of the undiscounted expected future cash flows of an asset group is less than the carrying value, including applicable liabilities, the carrying value is written down to its estimated fair value. Individual assets are grouped for impairment purposes based on a judgmental assessment of the lowest level for which there are identifiable cash flows that are largely independent of the cash flows of other assets (for example, at a refinery or fertilizer facility level). In addition, when preparing the expected future cash flows or estimating the fair value of impaired assets, we make several estimates that include subjective assumptions related to future sales volumes, commodity prices, operating costs, discount rates, and capital expenditures, among others.

Item 7A. *Quantitative and Qualitative Disclosures About Market Risk*

Our market risk sensitive instruments and positions have inherent risks including potential loss from adverse changes in commodity prices, RINs prices, and interest rates.

Commodity Price Risk

The Petroleum Segment, as a manufacturer of refined petroleum products, and the Nitrogen Fertilizer Segment, as a manufacturer of nitrogen fertilizer products, all of which are commodities, have exposure to market pricing for products sold in the future. In order to realize value from our processing capacity, a positive spread between the cost of raw materials and the value of finished products must be achieved (i.e., gross margin or crack spread). The physical commodities that comprise our raw materials and finished goods are typically bought and sold at a spot or index price that can be highly variable.

The Petroleum Segment uses a crude oil purchasing intermediary, Vitol, Inc., to purchase the majority of its non-gathered crude oil inventory for the refineries, which allows it to take title to and price its crude oil at locations in close proximity to the refineries, as opposed to the crude oil origination point, reducing its risk associated with volatile commodity prices by shortening the commodity conversion cycle time. The commodity conversion cycle time refers to the time elapsed between raw material acquisition and the sale of finished goods. In addition, the Petroleum Segment seeks to reduce the variability of commodity price exposure by engaging in hedging strategies and transactions that will serve to protect gross margin as forecasted in the annual operating plan. With regard to its hedging activities, the Petroleum Segment may enter into, or has entered into, financial instruments which serve to (1) lock in or fix a percentage of the anticipated or planned gross margin in future periods when the derivative market offers commodity spreads that generate positive cash flows, (2) hedge the value of inventories in excess of minimum required inventories, and (3) manage existing positions related to a change in anticipated operations and market conditions.

The Nitrogen Fertilizer Segment has commitments to purchase natural gas for use in the East Dubuque Fertilizer Facility at the spot market and through short-term, fixed supply, fixed price, and index price purchase contracts. In the normal course of business, nitrogen-based fertilizer products are produced throughout the year to supply the needs of our customers during the high-delivery-volume spring and fall seasons. The value of fertilizer product inventory is subject to market risk due to fluctuations in the relevant commodity prices. Prices of nitrogen fertilizer products can be volatile. We believe that market prices of nitrogen products are affected by changes in grain prices, demand, natural gas prices, and other factors.

RFS Compliance Price Risk

As a producer of transportation fuels from crude oil, the Petroleum Segment's obligated-party subsidiaries are required to blend biofuels into the products it produces or purchase RINs in the open market in lieu of blending to meet the mandates established by the EPA. The Petroleum Segment's obligated-party subsidiaries are exposed to market risk related to volatility in the price of RINs needed to comply with the RFS that are not otherwise generated through blending of renewable fuels in our refining and marketing operations. To mitigate the impact of this risk on the Petroleum Segment's results of operations and cash flows, the Petroleum Segment's obligated-party subsidiaries blend ethanol and biodiesel to the extent possible. In April 2022, we completed the renewable diesel project at our Wynnewood Refinery, to convert the Wynnewood Refinery's hydrocracker to

a RDU, at a total cost of \$179 million, which is capable of producing approximately 100 million gallons of renewable diesel per year and generating approximately 170 to 180 million RINs annually. In November 2021, the Board approved the renewable feedstock pretreater project at the Wynnewood Refinery, which is currently expected to be completed in the third quarter of 2023 at an estimated cost of \$95 million. We continually monitor the impact of the RFS on our business and evaluate strategies to mitigate the impacts of the RFS program, the administration thereof, and the market volatility for RINs on our business. Refer to Part I, Item 1A, “Risk Factors,” Part II, Item 7, “Management’s Discussion and Analysis” and Part II, Item 8, Note 11 (“Commitments and Contingencies”), of this Report for further discussion about compliance with the RFS and the potential impacts on our business.

Item 8. *Financial Statements and Supplementary Data*

**CVR ENERGY, INC. AND SUBSIDIARIES
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS**

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Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of CVR Energy, Inc.

Opinion on the financial statements

We have audited the accompanying consolidated balance sheets of CVR Energy, Inc. (a Delaware corporation) and subsidiaries (the “Company”) as of December 31, 2022 and 2021, the related consolidated statements of operations, changes in equity, and cash flows for each of the three years in the period ended December 31, 2022, and the related notes (collectively referred to as the “financial statements”). In our opinion, the financial statements 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.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (“PCAOB”), the Company’s internal control over financial reporting as of December 31, 2022, based on criteria established in the 2013 *Internal Control - Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (“COSO”), and our report dated February 22, 2023 expressed an unqualified opinion.

Basis for opinion

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

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

Critical audit matters

Critical audit matters are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. We determined that there are no critical audit matters.

/s/ GRANT THORNTON LLP

We have served as the Company’s auditor since 2013.

Dallas, Texas
February 22, 2023

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of CVR Energy, Inc.

Opinion on internal control over financial reporting

We have audited the internal control over financial reporting of CVR Energy, Inc. (a Delaware corporation) and subsidiaries (the “Company”) as of December 31, 2022, based on criteria established in the 2013 *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (“COSO”). 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 the 2013 *Internal Control - Integrated Framework* issued by COSO.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (“PCAOB”), the consolidated financial statements of the Company as of and for the year ended December 31, 2022, and our report dated February 22, 2023 expressed an unqualified opinion on those financial statements.

Basis for opinion

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

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

Definition and limitations of internal control over financial reporting

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

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

/s/ GRANT THORNTON LLP

Dallas, Texas
February 22, 2023

CVR ENERGY, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

	December 31,	
	2022	2021
ASSETS		
<i>Current assets:</i>		
Cash and cash equivalents (including \$86 and \$113, respectively, of consolidated variable interest entity ("VIE"))	\$ 510	\$ 510
Accounts receivable, net (including \$90 and \$88, respectively, of VIE)	358	299
Inventories (including \$78 and \$52, respectively, of VIE)	624	484
Prepaid expenses and other current assets (including \$11 and \$9, respectively, of VIE)	101	76
Total current assets	1,593	1,369
Property, plant, and equipment, net (including \$811 and \$850, respectively, of VIE)	2,247	2,273
Other long-term assets (including \$24 and \$14, respectively, of VIE)	279	264
Total assets	\$ 4,119	\$ 3,906
LIABILITIES AND EQUITY		
<i>Current liabilities:</i>		
Accounts payable (including \$51 and \$50, respectively, of VIE)	497	409
Other current liabilities (including \$75 and \$111, respectively, of VIE)	942	747
Total current liabilities	1,439	1,156
<i>Long-term liabilities:</i>		
Long-term debt and finance lease obligations, net of current portion (including \$547 and \$611, respectively, of VIE)	1,585	1,654
Deferred income taxes	249	268
Other long-term liabilities (including \$16 and \$12, respectively, of VIE)	55	58
Total long-term liabilities	1,889	1,980
<i>Commitments and contingencies (See Note 11)</i>		
<i>CVR Energy stockholders' equity:</i>		
Common stock, \$0.01 par value per share; 350,000,000 shares authorized; 100,629,209 and 100,629,209 shares issued as of December 31, 2022 and 2021, respectively	1	1
Additional paid-in-capital	1,508	1,510
Accumulated deficit	(976)	(956)
Treasury stock, 98,610 shares at cost	(2)	(2)
Total CVR stockholders' equity	531	553
Noncontrolling interest	260	217
Total equity	791	770
Total liabilities and equity	\$ 4,119	\$ 3,906

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

CVR ENERGY, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended December 31,		
	2022	2021	2020
<i>(in millions, except per share data)</i>			
Net sales	\$ 10,896	\$ 7,242	\$ 3,930
<i>Operating costs and expenses:</i>			
Cost of materials and other	8,766	6,185	3,373
Direct operating expenses (exclusive of depreciation and amortization)	719	569	478
Depreciation and amortization	281	270	268
Cost of sales	9,766	7,024	4,119
Selling, general and administrative expenses (exclusive of depreciation and amortization)	149	119	86
Depreciation and amortization	7	9	10
Loss on asset disposals	11	3	7
Goodwill impairment	—	—	41
Operating income (loss)	963	87	(333)
<i>Other (expense) income:</i>			
Interest expense, net	(85)	(117)	(130)
Investment income on marketable securities	—	81	41
Other (expense) income, net	(77)	15	7
Income (loss) before income tax expense	801	66	(415)
Income tax expense (benefit)	157	(8)	(95)
Net income (loss)	644	74	(320)
Less: Net income (loss) attributable to noncontrolling interest	181	49	(64)
Net income (loss) attributable to CVR Energy stockholders	\$ 463	\$ 25	\$ (256)
Basic and diluted earnings (loss) per share	\$ 4.60	\$ 0.25	\$ (2.54)
<i>Weighted-average common shares outstanding:</i>			
Basic and diluted	100.5	100.5	100.5

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

CVR ENERGY, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

	Common Stockholders							
(in millions, except share data)	Shares Issued	\$0.01 Par Value Common Stock	Additional Paid-In Capital	Accumulated Deficit	Treasury Stock	Total CVR Stockholders' Equity	Noncontrolling Interest	Total Equity
Balance at December 31, 2019	100,629,209	\$ 1	\$ 1,507	\$ (113)	\$ (2)	\$ 1,393	\$ 275	\$ 1,668
Net loss	—	—	—	(256)	—	(256)	(64)	(320)
Dividends paid to CVR Energy stockholders	—	—	—	(121)	—	(121)	—	(121)
Changes in equity due to CVR Partners' common unit repurchases	—	—	3	—	—	3	(11)	(8)
Balance at December 31, 2020	100,629,209	1	1,510	(490)	(2)	1,019	200	1,219
Net income	—	—	—	25	—	25	49	74
Dividends paid to CVR Energy stockholders	—	—	—	(492)	—	(492)	—	(492)
Distributions from CVR Partners to public unitholders	—	—	—	—	—	—	(31)	(31)
Changes in equity due to CVR Partners' common unit repurchases	—	—	—	—	—	—	(1)	(1)
Other	—	—	—	1	—	1	—	1
Balance at December 31, 2021	100,629,209	1	1,510	(956)	(2)	553	217	770
Net income	—	—	—	463	—	463	181	644
Dividends paid to CVR Energy stockholders	—	—	—	(483)	—	(483)	—	(483)
Distributions from CVR Partners to public unitholders	—	—	—	—	—	—	(129)	(129)
Changes in equity due to CVR Partners' common unit repurchases	—	—	(2)	—	—	(2)	(9)	(11)
Balance at December 31, 2022	100,629,209	\$ 1	\$ 1,508	\$ (976)	\$ (2)	\$ 531	\$ 260	\$ 791

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

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

	Year Ended December 31,		
	2022	2021	2020
<i>(in millions)</i>			
<i>Cash flows from operating activities:</i>			
Net income (loss)	\$ 644	\$ 74	\$ (320)
<i>Adjustments to reconcile net income (loss) to net cash provided by operating activities:</i>			
Depreciation and amortization	288	279	278
Loss on lower of cost or net realizable value adjustments	—	—	59
Goodwill impairment	—	—	41
Deferred income taxes	(17)	(98)	(30)
Gain on marketable securities	—	(81)	(34)
Loss on asset disposals	11	3	7
Loss on extinguishment of debt	1	8	3
Unrealized loss (gain) on derivatives, net	5	(16)	10
Share-based compensation	71	46	4
Other items	2	4	7
<i>Changes in assets and liabilities:</i>			
Accounts receivable	(78)	(91)	31
Inventories	(140)	(182)	9
Prepaid expenses and other current assets	(29)	12	(28)
Accounts payable	78	122	(121)
Deferred revenue	(20)	27	(2)
Other current liabilities	158	290	178
Other long-term assets and liabilities	(7)	(1)	(2)
Net cash provided by operating activities	967	396	90
<i>Cash flows from investing activities:</i>			
Capital expenditures	(191)	(224)	(124)
Turnaround expenditures	(83)	(5)	(159)
Proceeds from sale of assets	—	7	1
Acquisition of pipeline assets	—	(20)	—
Investment in marketable securities	—	3	(140)
Other investing activities	3	1	(1)
Net cash used in investing activities	(271)	(238)	(423)
<i>Cash flows from financing activities:</i>			
Proceeds from issuance of senior secured notes	—	550	1,000
Principal payments on senior secured notes	(65)	(582)	(500)
Call premium on extinguishment of debt	—	—	(5)
Repurchase of common units by CVR Partners	(12)	(1)	(7)
Dividends to CVR Energy's stockholders	(483)	(241)	(121)
Distributions to CVR Partners' noncontrolling interest holders	(129)	(31)	—
Other financing activities	(7)	(10)	(12)
Net cash (used in) provided by financing activities	(696)	(315)	355
Net increase (decrease) in cash, cash equivalents and restricted cash	—	(157)	22
Cash, cash equivalents and restricted cash, beginning of period	517	674	652
Cash, cash equivalents and restricted cash, end of period	\$ 517	\$ 517	\$ 674

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

CVR ENERGY, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1) Organization and Nature of Business

Organization

CVR Energy, Inc. (“CVR Energy,” “CVR,” “we,” “us,” “our,” or the “Company”) is a diversified holding company primarily engaged in the petroleum refining and marketing industry (the “Petroleum Segment”) and the nitrogen fertilizer manufacturing industry through its interest in CVR Partners, LP, a publicly traded limited partnership (the “Nitrogen Fertilizer Segment” or “CVR Partners”). The Petroleum Segment refines and markets high value transportation fuels primarily in the form of gasoline and diesel fuels. CVR Partners produces and markets nitrogen fertilizers primarily in the form of urea ammonium nitrate (“UAN”) and ammonia. We also produce and market renewable diesel. CVR’s common stock is listed on the New York Stock Exchange (“NYSE”) under the symbol “CVI.” Icahn Enterprises L.P. and its affiliates (“IEP”) owned approximately 71% of the Company’s outstanding common stock as of December 31, 2022.

Stock Repurchase Program

On October 23, 2019, the Board of Directors authorized a stock repurchase program (the “Stock Repurchase Program”). The Stock Repurchase Program enables the Company to repurchase up to \$300 million of the Company’s common stock. Repurchases under the Stock Repurchase Program may be made from time-to-time through open market transactions, block trades, privately negotiated transactions or otherwise in accordance with applicable securities laws. The timing, price and amount of repurchases (if any) will be made at the discretion of management and are subject to market conditions as well as corporate, regulatory and other considerations. While the Stock Repurchase Program currently has a duration of four years, it does not obligate the Company to acquire any stock and may be terminated by the Board of Directors at any time. We did not repurchase any of our common stock during the years ended December 31, 2022, 2021, and 2020.

CVR Partners, LP

Interest Holders - As of December 31, 2022, public common unitholders held approximately 63% of CVR Partners’ outstanding common units and CVR Services, LLC (“CVR Services”), a wholly-owned subsidiary of CVR Energy, held the remaining approximately 37% of CVR Partners’ outstanding common units. In addition, CVR Services held 100% of the interest in CVR Partners’ general partner, CVR GP, LLC (“CVR GP”), which held a non-economic general partner interest in CVR Partners as of December 31, 2022. The non-controlling interest reflected on the Consolidated Balance Sheets of CVR is only impacted by the net income of, and distributions from, CVR Partners.

Unit Repurchase Program - On May 6, 2020, the board of directors of CVR Partners’ general partner (the “UAN GP Board”), on behalf of CVR Partners, authorized a unit repurchase program (the “Unit Repurchase Program”), which was increased on February 22, 2021. The Unit Repurchase Program, as increased, authorized CVR Partners to repurchase up to \$20 million of the CVR Partners’ common units. During the years ended December 31, 2022 and December 31, 2021, CVR Partners repurchased 111,695 and 24,378 common units, respectively, on the open market in accordance with a repurchase agreement under Rules 10b5-1 and 10b-18 of the Securities Exchange Act of 1934, as amended, at a cost of \$12 million and \$1 million, respectively, exclusive of transaction costs, or an average price of \$110.98 and \$21.69 per common unit, respectively. During the year ended December 31, 2020, as adjusted to reflect the impact of the 1-for-10 reverse unit split of CVR Partners’ common units that was effective as of November 23, 2020, CVR Partners repurchased 623,177 common units, respectively, at a cost of \$7 million, exclusive of transaction costs, or an average price of \$11.34 per common unit. As of December 31, 2022, CVR Partners, considering all repurchases made since inception of the Unit Repurchase Program, had a nominal authorized amount remaining under the Unit Repurchase Program. This Unit Repurchase Program does not obligate CVR Partners to acquire any common units and may be cancelled or terminated by the UAN GP Board at any time.

As a result of these repurchases, and the resulting change in CVR Energy’s ownership of CVR Partners while maintaining control, CVR Energy recognized a decrease of \$2 million to additional paid-in capital from the reduction of non-controlling interests totaling \$3 million and related reduction of a deferred tax liability totaling \$1 million from changes in its book versus tax basis in CVR Partners as of December 31, 2022. CVR Energy recognized a nominal increase to additional paid-in capital from the non-cash reduction of non-controlling interests totaling \$0.1 million and the recognition of a deferred tax liability totaling \$0.1 million from changes in its book versus tax basis in CVR Partners as of December 31, 2021.

CVR ENERGY, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(2) Summary of Significant Accounting Policies

Principles of Consolidation

The accompanying consolidated financial statements, prepared in accordance with accounting principles generally accepted in the United States of America (“GAAP”) and in accordance with the rules and regulations of the Securities and Exchange Commission (“SEC”), include the accounts of the Company and its majority-owned direct and indirect subsidiaries. All intercompany accounts and transactions have been eliminated. The ownership interests of noncontrolling investors in CVR Partners are recorded as noncontrolling interests. CVR Energy has not recognized any other comprehensive income for the periods ended December 31, 2022, 2021, and 2020.

CVR Partners was determined to be a variable interest entity (“VIE”) and is consolidated by the Company. As the 100% owner of the general partner of CVR Partners, the Company has the sole ability to direct the activities that most significantly impact the economic performance of CVR Partners and is considered the primary beneficiary.

Investments in entities over which the Company has significant influence, but does not control, are accounted for using the equity method of accounting. Income from equity method investments represents CVR Energy’s proportionate share of net income generated by the equity method investees and is recorded in Other (expense) income, net on the Company’s Consolidated Statements of Operations.

Reclassifications

Certain immaterial reclassifications have been made within the consolidated financial statements for prior periods to conform with current presentation.

Use of Estimates

The consolidated financial statements are prepared in conformity with GAAP, which requires management to make certain estimates and assumptions that affect the reported amounts and disclosure of assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Estimates are reviewed on an ongoing basis, based on currently available information. Changes in facts and circumstances may result in revised estimates, and actual results could differ from those estimates.

Cash and Cash Equivalents

Cash and cash equivalents include cash on hand and on deposit and investments in highly liquid money market accounts with original maturities of three months or less.

Restricted Cash

Restricted cash consists of cash that must be maintained in a commercial escrow account pending resolution of certain litigation matters and is discussed further in Note 11 (“Commitments and Contingencies”).

Accounts Receivable, net

Accounts receivable, net primarily consists of customer accounts receivable recorded at the invoiced amounts and generally do not bear interest. Also included within Accounts receivable, net for the Nitrogen Fertilizer Segment are uncollected fixed price contracts which is discussed further within Note 7 (“Revenue”).

Allowances for doubtful accounts are based on historical loss experience, expected credit losses from current economic conditions, and management’s expectations of future economic conditions. The allowance is recorded when the receivable is deemed uncollectible and is booked to bad debt expense. The largest concentration of credit for any one customer was approximately 11% and 8% of the Accounts receivable, net balance at December 31, 2022 and 2021, respectively. During the years ended December 31, 2022, 2021 and 2020, the Company had nominal bad debt expenses.

CVR ENERGY, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Inventories

Inventories consist primarily of domestic and foreign crude oil, blending stock and components, work-in-progress, fertilizer products, refined fuels and by-products, and renewable diesel, all of which are valued at the lower of GAAP First-In, First-Out (“FIFO”) cost or net realizable value. Certain inventories in the Petroleum and Nitrogen Fertilizer Segments, including other raw materials, spare parts, and supplies, are valued at the weighted moving-average cost, which approximates FIFO. The cost of inventories includes inbound freight costs.

Inventories consisted of the following:

	December 31,	
	2022	2021
(in millions)		
Finished goods	\$ 297	\$ 215
Raw materials	206	177
In-process inventories	35	20
Parts, supplies and other	86	72
Total inventories	\$ 624	\$ 484

At December 31, 2022 and 2021, inventories related to the Nitrogen Fertilizer Segment included depreciation of approximately \$4 million and \$3 million, respectively.

Property, Plant and Equipment, net

Additions to property, plant and equipment, including capitalized interest and certain costs allocable to construction and property purchases, are recorded at cost. Expenditures for improvements that increase economic benefit or returns and/or extend useful life are capitalized. Depreciation is computed using the straight-line method over the estimated useful lives of the various classes of depreciable assets. The lives used in computing depreciation for significant asset classes are as follows:

Asset	Range of Useful Lives, in Years
Land and improvements	10 to 30
Buildings and improvements	1 to 30
Machinery and equipment	1 to 30
Furniture and fixtures	3 to 10
Right-of-use (“ROU”) finance leases	3 to 18
Other	5 to 30

Property, plant, and equipment, net consisted of the following:

	December 31,	
	2022	2021
(in millions)		
Machinery and equipment	\$ 4,194	\$ 4,033
Buildings and improvements	86	88
ROU finance leases	79	81
Land and improvements	72	71
Furniture and fixtures	37	37
Construction in progress	143	142
Other	15	15
	4,626	4,467
Less: Accumulated depreciation and amortization	(2,379)	(2,194)
Total property, plant and equipment, net	\$ 2,247	\$ 2,273

CVR ENERGY, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Leasehold improvements and assets held under finance leases are depreciated or amortized utilizing the straight-line method over the shorter of the contractual lease term or the estimated useful life of the asset. Expenditures for routine maintenance and repair costs are expensed when incurred and are reported in Direct operating expenses (exclusive of depreciation and amortization) in the Company's Consolidated Statements of Operations. For the years ended December 31, 2022, 2021, and 2020, depreciation and amortization expenses were \$221 million, \$206 million, and \$210 million, respectively.

During the year ended December 31, 2022, the Company had not identified the existence of an impairment indicator for our long-lived asset groups as outlined under the Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") Topic 360, *Property, Plant, and Equipment*.

Equity Method Investments

The Company accounts for investments in which it has a noncontrolling interest, yet has significant influence over the entity, using the equity method of accounting, whereby the Company records its pro-rata share of earnings, contributions to, and distributions from joint ventures as adjustments to the investment balance.

Leases

At inception, the Company determines whether an arrangement is a lease and the appropriate lease classification. Operating leases are included as operating lease right-of-use ("ROU") assets within Other long-term assets and lease liabilities within Other current liabilities and Other long-term liabilities on our Consolidated Balance Sheets. Finance leases are included as ROU finance leases within Property, plant, and equipment, net, and finance lease liabilities within Other current liabilities and Long-term debt and finance lease obligations, net of current portion on our Consolidated Balance Sheets. Leases with an initial expected term of 12 months or less are considered short-term and are not recorded on our Consolidated Balance Sheets. The Company recognizes lease expense for these leases on a straight-line basis over the expected lease term.

ROU assets represent the Company's right to use an underlying asset for the lease term, and lease liabilities represent the obligation to make lease payments arising from the lease. ROU assets and liabilities are recognized at the lease commencement date based on the present value of minimum lease payments over the lease term using an incremental borrowing rate with a maturity similar to the lease term, as our leases do not generally provide an implicit rate. The lease term is modified to reflect options to extend or terminate the lease when it is reasonably certain we will exercise such option. The depreciable life of assets and leasehold improvements is limited by the expected lease term, unless there is a transfer of title or purchase option reasonably certain of exercise, in which case the depreciation policy in the "Property, Plant and Equipment, net" section above is applicable. The periodic lease payments are treated as payments of the lease obligation and interest is recorded as interest expense. A lease modification is assessed to conclude whether it is a separate new contract or a modified contract. If it is a modified contract, the Company reconsiders the lease classification and remeasures the lease.

Deferred Financing Costs

Lender and other third-party costs associated with debt issuances are deferred and amortized to interest expense and other financing costs using the effective-interest method over the term of the debt. Deferred financing costs related to line-of-credit arrangements are amortized using the straight-line method through the maturity date of the facility. The deferred financing costs are included net within Long-term debt and finance lease obligations, net of current portion and in Other long-term liabilities for the line-of-credit arrangements where no debt balance exists.

Impairment of Long-Lived Assets and Goodwill

Long-lived assets (excluding goodwill, intangible assets with indefinite lives, and deferred tax assets) are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset or asset group may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to the estimated undiscounted future net cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated undiscounted future net cash flows, an impairment charge is recognized for the amount by which the carrying amount of the asset exceeds their fair value. Assets to be disposed of are reported at the lower of their carrying value or fair value less cost to sell.

CVR ENERGY, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Goodwill represents the excess of the cost of an acquired entity over the fair value of the assets acquired less liabilities assumed. Intangible assets are assets that lack physical substance (excluding financial assets). Goodwill acquired in a business combination and intangible assets with indefinite useful lives are not amortized, while intangible assets with finite useful lives are amortized. Goodwill and intangible assets not subject to amortization are tested for impairment annually or more frequently if events or changes in circumstances indicate the asset might be impaired. The Company uses November 1 of each year as its annual valuation date for its goodwill impairment test.

The Company tests goodwill for impairment annually on November 1 of each year, or more frequently if events or changes in circumstances indicate the asset might be impaired. One of our reporting units associated with our Nitrogen Fertilizer Segment's Coffeyville, Kansas facility (the "Coffeyville Fertilizer Facility") had a goodwill balance of \$41 million at December 31, 2019, which was fully impaired during the second quarter of 2020 when it was determined the estimated fair value of the Coffeyville Fertilizer Facility reporting unit did not exceed its carrying value. As there was no goodwill balance at December 31, 2022, 2021, or 2020, no annual impairment review was performed.

Asset Retirement Obligations

The Company records an asset retirement obligation ("ARO") at fair value for the estimated cost to retire a tangible long-lived asset at the time the liability is incurred, which is generally when the asset is purchased, constructed, or leased. The liability is recorded when there is a legal or contractual obligation to incur costs to retire the asset and only when a reasonable estimate of the fair value can be made.

Certain of the Company's assets can be used for extended or indeterminate periods of time with proper maintenance and upgrades, which the Company intends, and has a historical practice of, to maintain and upgrade as technological advances are made available. As a result, the Company believes these assets have indeterminate lives for purposes of estimating AROs. A liability will be recognized at such time when sufficient information exists to estimate a date or range of potential settlement dates needed to employ a present value technique to estimate fair value.

Loss Contingencies

In the ordinary course of business, the Company may become party to lawsuits, administrative proceedings, and governmental investigations, including environmental, regulatory, and other matters. The outcome of these matters cannot always be predicted accurately, but the Company accrues liabilities for these matters if the Company has determined that it is probable a loss will be incurred and the loss can be reasonably estimated. While it is not possible to predict the outcome of such proceedings, if one or more of them were decided against us, the Company believes there would be no material impact on its consolidated financial statements. Accrued amounts are reflected in Other current liabilities or Other long-term liabilities depending on when the Company expects to expend such amounts. Refer to Note 11 ("Commitments and Contingencies") for further discussion.

Environmental, Health & Safety ("EH&S") Matters

The Petroleum Segment and Nitrogen Fertilizer Segment are subject to various federal, state, and local environmental, health, and safety rules and regulations. Liabilities related to future remediation costs of past environmental contamination of properties are recognized when the related costs are considered probable and can be reasonably estimated. Estimates of these costs are based upon currently available facts, internal and third-party assessments of contamination, available remediation technology, site-specific costs, and currently enacted laws and regulations. In reporting environmental liabilities, no offset is made for potential recoveries. Loss contingency accruals, including those for environmental remediation, are subject to revision as further information develops or circumstances change, and such accruals can take into account the legal liability of other parties. Management periodically reviews and, as appropriate, revises its environmental accruals. Environmental expenditures for capital assets are capitalized at the time of the expenditure when such costs provide future economic benefits. Accrued amounts are reflected in Other current liabilities or Other long-term liabilities depending on when the Company expects to expend such amounts. Refer to Note 11 ("Commitments and Contingencies") for further discussion.

Revenue Recognition

The Company's revenue is generated from contracts with customers and is recognized at a point in time when performance obligations are satisfied by transferring control of the products or services to a customer. The transfer of control occurs upon

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shipment or delivery of the product, as the customer accepts the product, has title and significant risks and rewards of ownership of the product, physical possession of the product has been transferred, and we have the right to payment.

The transaction prices of the Company's contracts are either fixed or based on market indices, and any uncertainty related to the variable consideration when determining the transaction price is resolved on the pricing date or the date when the product is delivered. The payment terms depend on the product and type of contract, but generally require customers to pay within 30 days or less, and do not contain significant financing components.

Any pass-through finished goods delivery costs reimbursed by customers are reported in Net sales, while an offsetting expense is included in Cost of materials and other. Non-monetary product exchanges and certain buy/sell transactions which are entered into in the normal course of business are included on a net cost basis in Cost of materials and other on our Consolidated Statements of Operations. Qualifying excise and other taxes collected from customers and remitted to governmental authorities are recorded as a reduction of the transaction price.

Certain sales contracts of the Nitrogen Fertilizer Segment require customer prepayment prior to product delivery to guarantee a price and supply of nitrogen fertilizer. Deferred revenue is recorded at the point in time in which a prepaid contract is legally enforceable and the associated right to consideration is unconditional prior to transferring product to the customer. An associated receivable is recorded for uncollected prepaid contract amounts.

Cost Classifications

Cost of materials and other consists primarily of crude oil costs, feedstock blendstocks, purchased refined products, purchased ammonia, purchased hydrogen, pet coke expenses, Renewable Identification Number ("RIN") expenses, derivative gains or losses, and freight and distribution expenses. Direct operating expenses (exclusive of depreciation and amortization) consist primarily of energy and other utility costs, direct costs of labor, including applicable share-based compensation expense, property taxes, plant-related maintenance services, including turnaround expenses for the Nitrogen Fertilizer Segment, and environmental and safety compliance costs, as well as catalyst and chemical costs. Selling, general and administrative expenses (exclusive of depreciation and amortization) consist primarily of labor and other direct expenses associated with the Company's corporate activities, including accounting, finance, information technology, human resources, legal, and other related administrative functions. For the Company's Nitrogen Fertilizer Segment, Cost of materials and other and Direct operating expenses (exclusive of depreciation and amortization) are also impacted by changes in inventory balances, as these financial statement line items include inventory production costs.

Derivatives

Our segments are subject to fluctuations of commodity prices caused by supply and economic conditions, weather, interest rates, and other factors. To manage the impact of price fluctuations of crude oil and other commodities in our results of operations and certain inventories, and to fix margins on future sales and purchases, the Petroleum Segment uses various commodity derivative instruments, such as futures and swaps. The Company has not designated any of its derivative contracts as hedge accounting and records changes in fair value and cash settlements in the Consolidated Statements of Operations.

On a regular basis, the Company enters into commodity contracts with counterparties for the purchases or sale of crude oil, blendstocks, various finished products, and RINs. These contracts usually qualify for the normal purchase normal sale exception and follow the accrual method of accounting. The Petroleum Segment may enter into forward purchase or sale contracts associated with RINs. All other derivative instruments are recorded at fair value using mark-to-market accounting on a periodic basis utilizing third-party pricing.

The Nitrogen Fertilizer Segment may enter into forward contracts with fixed delivery prices to purchase portions of its natural gas requirements. These natural gas contracts are not treated as derivatives as they qualify for the normal purchase and normal sale exclusions. Accordingly, the fair value of these contracts are not recorded at the end of each reporting period.

Refer to Note 8 ("Derivative Financial Instruments, Investments and Fair Value Measurements") for further discussion of the Company's derivative activity.

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Fair Value of Financial Instruments

In accordance with FASB ASC Topic 820, *Fair Value Measurements and Disclosures* (“Topic 820”), the Company utilizes the market approach to measure fair value for its financial assets and liabilities. The market approach uses prices and other relevant information generated by market transactions involving identical or comparable assets, liabilities, or a group of assets or liabilities, such as a business.

Topic 820 utilizes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three broad levels. The following is a brief description of those three levels:

- Level 1 — Quoted prices in active markets for identical assets or liabilities
- Level 2 — Other significant observable inputs (including quoted prices in active markets for similar assets or liabilities)
- Level 3 — Significant unobservable inputs (including the Company’s own assumptions in determining the fair value)

Financial instruments consisting of cash and cash equivalents, restricted cash, accounts receivable, and accounts payable are carried at cost, which approximates fair value as a result of the short-term nature of the instruments. The Company’s investments, derivative instruments, RFS obligations and long-term debt, which use fair value measurements and are valued using broker quoted market prices of similar instruments, are considered Level 2 inputs. Refer to Note 8 (“Derivative Financial Instruments, Investments and Fair Value Measurements”) for further fair value disclosures.

Turnaround Expenses

Turnarounds represent major maintenance activities that require the shutdown of significant parts of a plant to perform necessary inspections, cleanings, repairs, and replacements of assets. Costs incurred for routine repairs and maintenance or unplanned outages at our facilities are expensed as incurred. Planned turnaround activities for the Petroleum Segment vary in frequency dependent on refinery units, but generally occur every four to five years, while the frequency of turnarounds in the Nitrogen Fertilizer Segment is every two to three years. Further details of each segment’s turnaround expensing method are discussed below.

Petroleum Segment - Consistent with others in the refining industry, the Petroleum Segment follows the deferral method of accounting for turnaround activities. Under the deferral method, the costs of turnarounds are deferred and amortized on a straight-line basis over a four-year period of time, which represents the estimated time until the next turnaround occurs. Turnaround costs and related accumulated amortization are included in the Consolidated Balance Sheets as Other long-term assets. The amortization expense related to turnaround costs is included in Depreciation and amortization in the Consolidated Statements of Operations. During the years ended December 31, 2022, 2021, and 2020, the Petroleum Segment capitalized \$81 million, \$8 million, and \$155 million, respectively.

Nitrogen Fertilizer Segment - The Nitrogen Fertilizer Segment follows the direct-expense method of accounting for turnaround activities. Costs associated with these turnaround activities are included in Direct operating expenses (exclusive of depreciation and amortization) in the Consolidated Statements of Operations. During the years ended December 31, 2022, 2021, and 2020, the Nitrogen Fertilizer Segment incurred turnaround expenses of \$33 million, \$3 million, and \$1 million, respectively.

Share-Based Compensation

The Company accounts for share-based compensation in accordance with FASB ASC Topic 718, *Compensation — Stock Compensation*. Currently, all of the Company’s share-based compensation awards, including those issued by CVR Partners, are liability-classified and are measured at fair value at the end of each reporting period based on the applicable closing share or unit price. Compensation expense will fluctuate based on changes in the applicable share or unit prices and expense reversals resulting from employee terminations prior to award vesting. Additionally, the Company has issued certain performance unit awards whose fair value is recognized as compensation expense only if the attainment of the performance conditions is considered probable. Uncertainties involved in this estimate include continued employment requirements and whether or not the performance conditions will be attained. The performance objectives are set in accordance with approved levels of the business plan for the fiscal year during the performance cycle and, therefore, are considered reasonably possible of being achieved. If

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this assumption proves not to be true and the awards do not vest, compensation expense recognized during the performance cycle will be reversed. See Note 9 (“Share-Based Compensation”) for further discussion.

Income Taxes

Income taxes are accounted for utilizing the asset and liability approach. Under this method, deferred tax assets and liabilities are recognized for the anticipated future tax consequences attributable to differences between the amounts recorded in the accounting books and their respective tax basis. Deferred amounts are measured using enacted tax rates expected to apply to taxable income in the year those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. In assessing the realizability of the deferred income tax assets, including net operating loss and state tax credit carryforwards, management considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred income tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversal of deferred income tax liabilities, projected future taxable income, and tax planning strategies in making this assessment. Further, the Company recognizes interest expense (income) and penalties on uncertain tax positions and income tax deficiencies (refunds) in Income tax expense (benefit).

Earnings Per Share

There were no dilutive awards outstanding during the years ended December 31, 2022, 2021, and 2020.

Recent Accounting Pronouncements - Accounting Standards Issued But Not Yet Implemented

In March 2020, FASB issued Accounting Standard Update (“ASU”) 2020-04, *Reference Rate Reform (Topic 848) - Facilitation of the Effects of Reference Rate Reform on Financial Reporting*, which provides optional guidance to ease the potential burden in accounting for (or recognizing the effects of) reference rate reform on financial reporting. This guidance applies to contracts, hedging relationships and other transactions affected by the discontinuation of the London Interbank Offered Rate (“LIBOR”) and other interbank offered rates. The guidance is effective beginning on March 12, 2020 through the sunset date of Topic 848, which is currently expected to occur on December 31, 2024. The Company has not utilized any of the optional expedients or exceptions available under this guidance and will continue to assess whether this guidance is applicable throughout the effective period.

(3) Equity Method Investments

For each of the following investments, we have the ability to exercise influence through our participation in the boards of directors, which make all significant decisions. However, since we have equal or proportionate influence over each board of directors as a joint partner without regard to its economic interest and do not serve as the day-to-day operator, we have determined that these entities should not be consolidated and have applied the equity method of accounting.

- *Enable South Central Pipeline, LLC* (“Enable JV”) - Through our subsidiaries, we own a 40% interest in Enable JV, which operates a 12-inch 26-mile crude oil pipeline with a capacity of approximately 20,000 barrels per day that is connected to the Wynnewood Refinery. The remaining interest in Enable JV is owned by Enable Midstream Partners, LP, which was merged with Energy Transfer LP in December 2021.
- *Midway Pipeline, LLC* (“Midway JV”) - Through our subsidiaries, we own a 50% interest in Midway JV, which operates a 16-inch 99-mile crude oil pipeline with a capacity of approximately 131,000 barrels per day which connects the Coffeyville Refinery to the Cushing, Oklahoma oil hub. The remaining interest in Midway JV is owned by Plains Pipeline, L.P.

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(in millions)

	Enable JV	Midway JV	Total
Balance at December 31, 2020	6	74	80
Cash distributions	(3)	(8)	(11)
Equity income	3	7	10
Balance at December 31, 2021	6	73	79
Cash distributions	(4)	(9)	(13)
Equity income	3	7	10
Balance at December 31, 2022	\$ 5	\$ 71	\$ 76

(4) Leases

Lease Overview

We lease certain pipelines, storage tanks, railcars, office space, land, and equipment across our refining, fertilizer, and corporate operations. Most of our leases include one or more renewal options to extend the lease term, which can be exercised at our sole discretion. Certain leases also include options to purchase the leased property. Certain of our lease agreements include rental payments which are adjusted periodically for factors such as inflation. Our lease agreements do not contain any material residual value guarantees or material restrictive covenants. Additionally, we do not have any material lessor or sub-leasing arrangements.

Balance Sheet Summary as of December 31, 2022 and 2021

The following tables summarize the ROU asset and lease liability balances for the Company's operating and finance leases at December 31, 2022 and 2021:

(in millions)	December 31, 2022		December 31, 2021	
	Operating Leases	Finance Leases	Operating Leases	Finance Leases
<i>ROU assets, net</i>				
Pipeline and storage	\$ 16	\$ 20	\$ 17	\$ 23
Railcars	11	—	6	—
Real estate and other	13	15	14	18
<i>Lease liability</i>				
Pipelines and storage	\$ 16	\$ 32	\$ 17	\$ 35
Railcars	11	—	6	—
Real estate and other	13	16	14	19

Lease Expense Summary for the Year Ended December 31, 2022, 2021 and 2020

We recognize lease expense on a straight-line basis over the lease term and short-term lease expense within Direct operating expenses (exclusive of depreciation and amortization). For the years ended December 31, 2022, 2021, and 2020, we recognized lease expense comprised of the following components:

(in millions)	Year Ended December 31,		
	2022	2021	2020
Operating lease expense	\$ 16	\$ 15	\$ 17
<i>Finance lease expense:</i>			
Amortization of ROU asset	\$ 6	\$ 6	\$ 6
Interest expense on lease liability	5	5	6
Short-term lease expense	\$ 11	\$ 8	\$ 8

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Lease Terms and Discount Rates

The following outlines the remaining lease terms and discount rates used in the measurement of the Company's ROU assets and lease liabilities at December 31, 2022 and 2021:

	December 31, 2022		December 31, 2021	
	Operating Leases	Finance Leases	Operating Leases	Finance Leases
Weighted-average remaining lease term	4.1 years	6.3 years	4.1 years	7.2 years
Weighted-average discount rate	5.2 %	9.0 %	5.4 %	9.0 %

Maturities of Lease Liabilities

The following summarizes the remaining minimum lease payments through maturity of the Company's lease liabilities at December 31, 2022:

<i>(in millions)</i>		Operating Leases	Finance Leases
Year Ended December 31,			
2023		\$ 16	\$ 10
2024		12	10
2025		6	10
2026		5	10
2027		3	10
Thereafter		3	14
Total lease payments		45	64
Less: imputed interest		(5)	(16)
Total lease liability		\$ 40	\$ 48

On February 21, 2022, Coffeyville Resources Nitrogen Fertilizer, LLC ("CRNF") entered into the First Amendment to the On-Site Product Supply Agreement with Messer LLC ("Messer"), which amended the July 31, 2020 On-Site Product Supply Agreement (as amended, the "Messer Agreement"). Under the Messer Agreement, among other obligations, Messer is obligated to supply and make certain capital improvements during the term of the Messer Agreement, and CRNF is obligated to take as available and pay for oxygen from Messer's facility. This arrangement for CRNF's purchase of oxygen from Messer does not meet the definition of a lease under FASB ASC Topic 842, *Leases* ("Topic 842"), as CRNF does not expect to receive substantially all of the output, which includes oxygen, nitrogen, and compressed air, of Messer's on-site production from its air separation unit over the life of the Messer Agreement. The Messer Agreement also obligates Messer to install a new oxygen storage vessel, related equipment and infrastructure ("Oxygen Storage Vessel" or "Vessel") to be used solely by the Coffeyville Facility. The arrangement for the use of the Oxygen Storage Vessel meets the definition of a lease under Topic 842, as CRNF will receive all output associated with the Vessel. Based on terms outlined in the Messer Agreement, the Company expects the lease of the Oxygen Storage Vessel to be classified as a financing lease with an amount of approximately \$25 million being capitalized upon lease commencement when the Vessel is placed in service, which is currently expected within the next 12 months.

On July 14, 2022, the Company entered into the Sixth Amendment to the Sugar Land Plaza Office Building Agreement with LCFRE Sugar Land Town Square, LLC ("LCFRE"), which amends the Sugar Land Plaza Office Building Agreement dated 2016 (as amended, the "LCFRE Agreement"). Under the LCFRE Agreement, LCFRE will provide office space to the Company which will continue to serve as the Company's corporate office in Sugar Land, Texas and will commence on October 1, 2023. Based on the terms outlined in the LCFRE Agreement, the Company expects the lease to be classified as an operating lease under Topic 842, with approximately \$12 million capitalized upon lease commencement.

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(5) Other Current Liabilities

Other current liabilities were as follows:

	December 31,	
	2022	2021
<i>(in millions)</i>		
Accrued Renewable Fuel Standards (“RFS”) obligation	\$ 692	\$ 494
Accrued taxes other than income taxes	51	45
Deferred revenue	48	87
Personnel accruals	47	46
Share-based compensation	31	15
Accrued interest	24	24
Operating lease liabilities	15	13
Current portion of long-term debt and finance lease obligations	6	6
Derivatives	4	2
Other accrued expenses and liabilities	24	15
Total other current liabilities	\$ 942	\$ 747

(6) Long-Term Debt and Finance Lease Obligations

	December 31,	
	2022	2021
<i>(in millions)</i>		
<i>CVR Partners:</i>		
9.25% Senior Secured Notes, due June 2023 ⁽¹⁾	\$ —	\$ 65
6.125% Senior Notes, due June 2028	550	550
Unamortized discount and debt issuance costs	(3)	(4)
Total CVR Partners debt	\$ 547	\$ 611
<i>CVR Refining, LP (“CVR Refining”):</i>		
Finance lease obligations, net of current portion ⁽²⁾	42	48
Total CVR Refining debt	\$ 42	\$ 48
<i>CVR Energy:</i>		
5.250% Senior Notes, due February 2025	\$ 600	\$ 600
5.750% Senior Notes, due February 2028	400	400
Unamortized debt issuance costs	(4)	(5)
Total CVR Energy debt	996	995
Total long-term debt and finance lease obligations	\$ 1,585	\$ 1,654
Current portion of finance lease obligations ⁽²⁾	6	6
Total long-term debt and finance lease obligations, including current portion	\$ 1,591	\$ 1,660

(1) The \$65 million outstanding balance of the 9.25% Senior Secured Notes due 2023 (the “2023 UAN Notes”) was paid in full on February 22, 2022 at par, plus accrued and unpaid interest.

(2) Current portion of finance lease obligations was approximately \$6 million as of both December 31, 2022 and 2021.

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Credit Agreements

<i>(in millions)</i>	<u>Total Capacity</u>	<u>Amount Borrowed as of December 31, 2022</u>	<u>Outstanding Letters of Credit</u>	<u>Available Capacity as of December 31, 2022</u>	<u>Maturity Date</u>
<i>CVR Partners:</i>					
Asset Based (“Nitrogen Fertilizer ABL”) Credit Agreement	\$ 35	\$ —	\$ —	\$ 35	September 30, 2024
<i>CVR Refining:</i>					
Petroleum ABL (as defined below)	\$ 275	\$ —	\$ 23	\$ 252	June 30, 2027

CVR Partners

2023 UAN Notes - On June 10, 2016, CVR Partners and its subsidiary, CVR Nitrogen Finance Corporation (“Finance Co.” and, together with CVR Partners, the “2023 Notes Issuers”), certain subsidiary guarantors named therein and Wilmington Trust, National Association, as trustee and as collateral trustee, completed a private offering of \$645 million aggregate principal amount of the 2023 UAN Notes. The 2023 UAN Notes would have matured on June 15, 2023, but the 2023 Notes Issuers redeemed the remaining outstanding balance at par plus accrued and unpaid interest to the applicable redemption date on February 22, 2022. Interest on the 2023 UAN Notes was paid semi-annually in arrears on June 15 and December 15 of each year and were guaranteed on a senior secured basis by all of the Nitrogen Fertilizer Partnership’s existing subsidiaries.

The 2023 UAN Notes contained customary covenants for a financing of this type that, among other things, restricted CVR Partners’ ability and the ability of certain of its subsidiaries to have: (i) sold assets; (ii) paid distributions on, redeemed or repurchased the Nitrogen Fertilizer Partnership’s units or to have redeemed or repurchased its subordinated debt; (iii) made investments; (iv) incurred or guaranteed additional indebtedness or issued preferred units; (v) created or incurred certain liens; (vi) entered into agreements that restricted distributions or other payments from CVR Partners’ restricted subsidiaries to CVR Partners; (vii) consolidated, merged or transferred all or substantially all of CVR Partners’ assets; (viii) engaged in transactions with affiliates; and (ix) created unrestricted subsidiaries. In addition, the indenture contained customary events of default, the occurrence of which would have resulted in or permitted the trustee or the holders of at least 25% of the 2023 UAN Notes to have caused the acceleration of the 2023 UAN Notes, in addition to pursuing other available remedies.

During 2021, CVR Partners redeemed \$580 million in aggregate principal amounts of the outstanding 2023 UAN Notes at par. On February 22, 2022, CVR Partners redeemed all of the remaining outstanding 2023 UAN Notes at par and settled accrued interest of approximately \$1 million through the date of redemption. As a result of this transaction, CVR Partners recognized a loss on extinguishment of debt of \$1 million in the first quarter of 2022, which included the write-off of unamortized deferred financing costs and discount of less than \$1 million each.

2028 UAN Notes - On June 23, 2021, CVR Partners and Finance Co. (the “Issuers”), completed a private offering of \$550 million aggregate principal amount of 6.125% Senior Secured Notes due 2028 (the “2028 UAN Notes”). Interest on the 2028 UAN Notes is payable semi-annually in arrears on June 15 and December 15 each year, commencing on December 15, 2021. The 2028 UAN Notes mature on June 15, 2028, unless earlier redeemed or repurchased by the Issuers. The 2028 UAN Notes are jointly and severally guaranteed on a senior secured basis by all the existing domestic subsidiaries of CVR Partners, excluding Finance Co.

The Issuers may, at their option, at any time and from time to time prior to June 15, 2024, on any one or more occasions, redeem all or part of the 2028 UAN Notes, at a price equal to 100% of the principal amount plus a “make whole” premium, plus accrued and unpaid interest. On or after June 15, 2024, the Issuers may, on any one or more occasions, redeem all or part of the 2028 UAN Notes at the redemption prices set forth below, expressed as a percentage of the principal amount of the respective notes, plus accrued and unpaid interest to the applicable redemption date.

<u>12-month period beginning June 15,</u>	<u>Percentage</u>
2024	103.063%
2025	101.531%
2026 and thereafter	100.000%

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The indenture governing the 2028 UAN Notes contains covenants that are substantially the same as the indenture governing the 2023 UAN Notes. However, the 2028 UAN Notes contain a permitted investment activity carveout that allows for the transfer of certain carbon capture assets to a joint venture for the purpose of monetizing potential tax credits.

Nitrogen Fertilizer ABL - On September 30, 2021, CVR Partners, LP and its subsidiaries, CVR Nitrogen, LP, East Dubuque Nitrogen Fertilizers, LLC, Coffeyville Resources Nitrogen Fertilizers, LLC, CVR Nitrogen Holdings, LLC, Finance Co. and CVR Nitrogen GP, LLC, entered into the Nitrogen Fertilizer ABL with Wells Fargo Bank National Association, a national banking association (“Wells Fargo”), as administrative agent, collateral agent, and lender. The Nitrogen Fertilizer ABL has an aggregate principal amount of availability of up to \$35 million with an incremental facility, which permits an increase in borrowings of up to \$15 million in the aggregate subject to additional lender commitments and certain other conditions. The proceeds of the loans may be used for general corporate purposes of CVR Partners and its subsidiaries. The Nitrogen Fertilizer ABL provides for loans and letters of credit, subject to meeting certain borrowing base conditions, with sub-limits of \$4 million for swingline loans and \$10 million for letters of credit. The Nitrogen Fertilizer ABL is scheduled to mature on September 30, 2024.

Beginning September 30, 2021, loans under the Nitrogen Fertilizer ABL bear interest at an annual rate equal to, at the option of the borrowers, (i) (a) 1.615% plus the daily simple Secured Overnight Financing Rate (“SOFR”) or (b) 0.615% plus a base rate, if our quarterly excess availability is greater than or equal to 75%, (ii) (a) 1.865% plus SOFR or (b) 0.865% plus a base rate, if our quarterly excess availability is greater than or equal to 50% but less than 75%, or (iii) (a) 2.115% plus SOFR or (b) 1.115% plus a base rate, otherwise. The borrowers must also pay a commitment fee on the unutilized commitments and also pay customary letter of credit fees.

The Nitrogen Fertilizer ABL contains customary covenants for a financing of this type and requires CVR Partners in certain circumstances to comply with a minimum fixed charge coverage ratio test and contains other restrictive covenants that limit the ability of CVR Partners and its subsidiaries ability to, among other things, incur liens, engage in a consolidation, merger, purchase or sale of assets, pay dividends, incur indebtedness, make advances, investments and loans, enter into affiliate transactions, issue certain equity interests, create subsidiaries and unrestricted subsidiaries, and create certain restrictions on the ability to make distributions, loans, and asset transfers among CVR Partners or its subsidiaries.

CVR Refining

Petroleum ABL - On June 30, 2022, CVR Refining and certain of its subsidiaries (the “Credit Parties”) entered into Amendment No. 3 to the Amended and Restated ABL Credit Agreement, dated December 20, 2012 (the “Petroleum ABL Amendment”, and as amended, the “Petroleum ABL”), with a group of lenders and Wells Fargo Bank, National Association, as administrative agent and collateral agent (the “Agent”). The Petroleum ABL is a senior secured asset based revolving credit facility in an aggregate principal amount of up to \$275 million with a \$125 million incremental facility, which is subject to additional lender commitments and certain other conditions. The proceeds of the loans may be used for capital expenditures, working capital and general corporate purposes of the Credit Parties and their subsidiaries. The Petroleum ABL provides for loans and letters of credit in an amount up to the aggregate availability under the facility, subject to meeting certain borrowing base conditions, with sub-limits of \$30 million for swingline loans and \$60 million (or \$100 million if increased by the Agent) for letters of credit. The Petroleum ABL is scheduled to mature on June 30, 2027.

Beginning June 30, 2022, loans under the Petroleum ABL bear interest at an annual rate equal to, at the option of the borrowers, (i) (a) 1.50% plus the Term SOFR or (b) 0.50% plus a base rate, if CVR Refining’s quarterly excess availability is greater than 50%, and (ii) (a) 1.75% plus the Term SOFR or (b) 0.75% plus a base rate, otherwise. All borrowings under the Petroleum ABL are subject to the satisfaction of customary conditions, including absence of a default and accuracy of representations and warranties. The Credit Parties must also pay a commitment fee on the unutilized commitments and pay customary letter of credit fees.

The Petroleum ABL contains customary covenants for a financing of this type and requires the Credit Parties in certain circumstances to comply with a minimum fixed charge coverage ratio test, and contains other customary restrictive covenants that limit the Credit Parties’ ability and the ability of their subsidiaries to, among other things, incur liens, engage in a consolidation, merger and purchase or sale of assets, pay dividends, incur indebtedness, make advances, investment and loans, enter into affiliate transactions, issue equity interests, or create subsidiaries and unrestricted subsidiaries.

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On April 12, 2022 and July 22, 2022, in connection with the Petroleum ABL, numerous additional indirect, wholly-owned subsidiaries (the “Joining Subsidiaries”) of CVR Energy delivered to the Agent Joinder Agreements pursuant to which such Joining Subsidiaries became borrowers for all purposes under the Petroleum ABL and other Credit Documents.

CVR Energy

2025 Notes and 2028 Notes - On January 27, 2020, CVR Energy completed a private offering of \$600 million aggregate principal amount of 5.25% Senior Unsecured Notes due 2025 (the “2025 Notes”) and \$400 million aggregate principal amount of 5.75% Senior Unsecured Notes due 2028 (the “2028 Notes” and, collectively with the 2025 Notes, the “Notes”). Interest on the Notes is payable semi-annually in arrears on February 15 and August 15 each year, commencing on August 15, 2020. The 2025 Notes mature on February 15, 2025, unless earlier redeemed or repurchased by the issuers. The 2028 Notes mature on February 15, 2028, unless earlier redeemed or repurchased by the issuers. The Notes are jointly and severally guaranteed on a senior unsecured basis by the wholly-owned subsidiaries of CVR Energy with the exception of CVR Partners and its subsidiaries and certain immaterial wholly-owned subsidiaries of CVR Energy.

On or after February 15, 2022 and February 15, 2023, we may on any one or more occasions, redeem all or part of the 2025 Notes and 2028 Notes, respectively, at the redemption prices set forth below expressed as a percentage of the principal amount of the respective notes, plus accrued and unpaid interest to the applicable redemption date.

2025 Notes		2028 Notes	
12-month period beginning February 15,	Percentage	12-month period beginning February 15,	Percentage
2022	102.625%	2023	102.875%
2023	101.313%	2024	101.917%
2024 and thereafter	100.000%	2025	100.958%
		2026 and thereafter	100.000%

The indenture governing the Notes imposes covenants that will, among other things, limit our ability and the ability of our restricted subsidiaries to: (i) incur additional indebtedness or issue certain disqualified equity; (ii) create liens on certain assets to secure debt; (iii) pay dividends or make other equity distributions; (iv) purchase or redeem capital stock; (v) make certain investments; (vi) sell assets; (vii) agree to certain restrictions on the ability of restricted subsidiaries to make distributions, loans, or other asset transfers to us; (viii) consolidate, merge, sell, or otherwise dispose of all or substantially all of our assets; (ix) engage in transactions with affiliates; and (x) designate our restricted subsidiaries as unrestricted subsidiaries. In addition, the indenture contains customary events of default, the occurrence of which would result in or permit the trustee or the holders of at least 25% of the 2025 Notes and 2028 Notes to cause, amongst other available remedies, the acceleration of the respective notes.

In connection with the Notes, issued pursuant to the Indenture dated January 27, 2020 (the “Indenture”), among CVR Energy, the subsidiary guarantors listed therein (collectively, the “Guarantors”), and Wells Fargo Bank, National Association, as trustee (the “Trustee”), a new wholly-owned subsidiary of CVR Energy, CVR Renewables, LLC (“CVR Renew”), the Guarantors, and the Trustee executed and delivered a Supplemental Indenture pursuant to which CVR Renew unconditionally guaranteed all of the Company’s obligations under the Notes on the terms and conditions set forth in the Note Guarantee and the Indenture.

On April 12, 2022, CVR Energy, the existing subsidiary guarantors of the Notes and CVR Renewables, LLC, a new wholly-owned subsidiary of CVR Energy (“CVR Renew”), on the one hand, and the trustee for the Notes, on the other hand, executed and delivered a Supplemental Indenture pursuant to which CVR Renew unconditionally guaranteed all of the Company’s obligations under the Notes on the terms and conditions set forth in the note guarantee and the indenture governing the Notes.

On July 1, 2022, in connection with the Petroleum ABL Amendment, the Joining Subsidiaries that were not previously parties to the Indenture executed and delivered a Supplemental Indenture to the Trustee pursuant to which such Joining Subsidiaries unconditionally guaranteed all of the Company’s obligations under the Notes on the terms and conditions set forth in the Note Guarantee and the Indenture.

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Covenant Compliance

The Company and its subsidiaries, as applicable, have been in compliance with all covenants of the Nitrogen Fertilizer ABL, the Petroleum ABL, and the senior notes as of December 31, 2022.

(7) Revenue

The following tables present the Company's revenue disaggregated by major product, which include a reconciliation of the disaggregated revenue by the Company's reportable segments.

Year Ended December 31, 2022				
<i>(in millions)</i>	Petroleum Segment ⁽¹⁾	Nitrogen Fertilizer Segment	Other / Eliminations	Consolidated
Gasoline	\$ 4,830	\$ —	\$ —	\$ 4,830
Distillates ⁽²⁾	4,789	—	111	4,900
Ammonia	—	200	—	200
UAN	—	557	—	557
Other urea products	—	33	—	33
Freight revenue ⁽³⁾	17	35	—	52
Other ⁽⁴⁾	244	11	30	285
Revenue from product sales	9,880	836	141	10,857
Crude oil sales	37	—	—	37
Other revenue ⁽⁴⁾	2	—	—	2
Total revenue	\$ 9,919	\$ 836	\$ 141	\$ 10,896
Year Ended December 31, 2021				
<i>(in millions)</i>	Petroleum Segment ⁽¹⁾	Nitrogen Fertilizer Segment	Other / Eliminations	Consolidated
Gasoline	\$ 3,679	\$ —	\$ —	\$ 3,679
Distillates ⁽²⁾	2,809	—	—	2,809
Ammonia	—	146	—	146
UAN	—	316	—	316
Other urea products	—	29	—	29
Freight revenue ⁽³⁾	21	31	—	52
Other ⁽⁴⁾	163	11	(12)	162
Revenue from product sales	6,672	533	(12)	7,193
Crude oil sales	47	—	—	47
Other revenue ⁽⁴⁾	2	—	—	2
Total revenue	\$ 6,721	\$ 533	\$ (12)	\$ 7,242

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	Year Ended December 31, 2020			
<i>(in millions)</i>	Petroleum Segment ⁽¹⁾	Nitrogen Fertilizer Segment	Other / Eliminations	Consolidated
Gasoline	\$ 1,882	\$ —	\$ —	\$ 1,882
Distillates ⁽²⁾	1,543	—	—	1,543
Ammonia	—	94	—	94
UAN	—	198	—	198
Other urea products	—	15	—	15
Freight revenue ⁽³⁾	18	33	—	51
Other ⁽⁴⁾	79	10	(6)	83
Revenue from product sales	3,522	350	(6)	3,866
Crude oil sales	63	—	—	63
Other revenue ⁽⁴⁾	1	—	—	1
Total revenue	\$ 3,586	\$ 350	\$ (6)	\$ 3,930

- (1) The Petroleum Segment may incur broker commissions or transportation costs prior to the transfer on certain sales. The broker costs are expensed since the contract durations are less than one year. Transportation costs are accounted for as fulfillment costs and are expensed as incurred.
- (2) Distillates consist primarily of diesel fuel, kerosene, jet fuel and renewable fuels activity.
- (3) Freight revenue recognized by the Petroleum Segment is primarily tariff and line loss charges rebilled to customers to reimburse the Petroleum Segment for expenses incurred from a pipeline operator. Freight revenue recognized by the Nitrogen Fertilizer Segment represents the pass-through finished goods delivery costs incurred prior to customer acceptance and is reimbursed by customers. An offsetting expense for freight is included in Cost of materials and other.
- (4) Other revenue consists primarily of renewable fuels activity, feedstock, asphalt sales, and pipeline and processing fees.

Remaining Performance Obligations

We have spot and term contracts with customers and the transaction prices are either fixed or based on market indices (variable consideration). We do not disclose remaining performance obligations for contracts that have terms of one year or less and for contracts where the variable consideration was entirely allocated to an unsatisfied performance obligation. As of December 31, 2022, these contracts have a remaining duration of less than three years.

As of December 31, 2022, the Nitrogen Fertilizer Segment had approximately \$5 million of remaining performance obligations for contracts with an original expected duration of more than one year. The Nitrogen Fertilizer Segment expects to recognize approximately \$4 million of these performance obligations as revenue by the end of 2023 and the remaining balance during 2024.

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Contract Balances

A summary of the Nitrogen Fertilizer Segment's deferred revenue activity during the year ended December 31, 2022 is presented below:

(in millions)

Balance at December 31, 2021	\$	87
Add:		
New prepay contracts entered into during the period ⁽¹⁾		117
Less:		
Revenue recognized that was included in the contract liability balance at the beginning of the period		(86)
Revenue recognized related to contracts entered into during the period		(69)
Other changes		(1)
Balance at December 31, 2022	\$	48

(1) Includes \$83 million where payments associated with prepaid contracts were collected as of December 31, 2022.

Major Customers

Petroleum Segment - The Petroleum Segment had two customers who comprised 25% and 26% of petroleum net sales for the years ended December 31, 2022 and 2020, respectively, and one customer who comprised 16% of petroleum net sales for the year ended December 31, 2021.

Nitrogen Fertilizer Segment - The Nitrogen Fertilizer Segment had two customers who comprised 30% and 26% of nitrogen fertilizer net sales for the years ended December 31, 2022 and 2020, respectively, and one customer who comprised 13% of nitrogen fertilizer net sales for the year ended December 31, 2021.

(8) Derivative Financial Instruments, Investments and Fair Value Measurements

Derivative Financial Instruments

The following outlines the net notional buy (sell) position of our commodity derivative instruments held as of December 31, 2022 and 2021:

(in thousands of barrels)	Commodity	December 31,	
		2022	2021
Forwards	Crude	373	67
Futures	Crude	(150)	(20)
Futures	ULSD	(215)	(220)
Futures	Soybean	(109)	—

As of December 31, 2022, the Petroleum Segment had open fixed-price commitments to purchase a net amount of 34 million RINs.

CVR ENERGY, INC. AND SUBSIDIARIES
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The following outlines the realized and unrealized gains (losses) incurred from derivative activities, all of which were recorded in Cost of materials and other on the Consolidated Statements of Operations:

	Year Ended December 31,		
	2022	2021	2020
(in millions)			
Forwards	\$ 12	\$ 25	\$ 53
Swaps	(48)	(68)	(8)
Futures	(19)	(1)	10
Total (loss) gain on derivatives, net	\$ (55)	\$ (44)	\$ 55

Offsetting Assets and Liabilities

The following outlines the consolidated balance sheet line items that include our derivative financial instruments and the effect of the collateral netting. Such amounts are presented on a gross basis, before the effects of collateral netting. The Company elected to offset the derivative assets and liabilities with the same counterparty on a net basis when the legal right of offset exists.

	December 31,							
	2022				2021			
	Derivatives		Collateral Netting	Net Value	Derivatives		Collateral Netting	Net Value
	Assets	Liabilities			Assets	Liabilities		
(in millions)								
Prepaid expenses and other current assets	\$ —	\$ (1)	\$ 1	\$ —	\$ —	\$ —	\$ —	\$ —
Other current liabilities	—	(4)	—	(4)	5	(7)	—	(2)

At December 31, 2022 and 2021, the Company had \$7 million and \$4 million of collateral under master netting arrangements not offset against the derivatives within Prepaid expenses and other current assets on the Consolidated Balance Sheets, respectively, primarily related to initial margin requirements. Our derivative instruments may contain credit risk-related contingent provisions associated with our credit ratings. If our credit rating were to be downgraded, it would allow the counterparty to require us to post collateral or to request immediate, full settlement of derivative instruments in liability positions. There were no derivative liabilities with credit risk-related contingent provisions as of December 31, 2022 and 2021, and no collateral has been posted.

Investments

Investments consisted of equity securities, which are reported at fair value in Prepaid expenses and other current assets on our Consolidated Balance Sheets. These investments were considered trading securities. Investment income on marketable securities consisted of the following:

	Year Ended December 31,		
	2022	2021	2020
(in millions)			
Dividend income	\$ —	\$ —	\$ 7
Gain on marketable securities	—	81	34
Investment income on marketable securities	\$ —	\$ 81	\$ 41

On January 18, 2022, the Company divested its remaining nominal investment in Delek US Holdings, Inc. (“Delek”). As of December 31, 2022, the Company did not hold any investment in Delek. See further discussion of the distribution in Note 14 (“Related Party Transactions”).

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Fair Value Measurements

The following tables set forth the assets and liabilities measured or disclosed at fair value on a recurring basis, by input level, as of December 31, 2022 and 2021:

		December 31, 2022			
		Level 1	Level 2	Level 3	Total
<i>(in millions)</i>					
<i>Location and description</i>					
Other current liabilities (commodity derivatives)	\$	—	\$ (4)	\$ —	\$ (4)
Other current liabilities (RFS obligations)		—	(692)	—	(692)
Long-term debt and finance lease obligations, net of current portion (long-term debt)		—	(1,394)	—	(1,394)
Total liabilities	\$	—	\$ (2,090)	\$ —	\$ (2,090)

		December 31, 2021			
		Level 1	Level 2	Level 3	Total
<i>(in millions)</i>					
<i>Location and description</i>					
Prepaid expenses and other current assets (derivative financial instruments)	\$	—	\$ 1	\$ —	\$ 1
Total assets	\$	—	\$ 1	\$ —	\$ 1
Other current liabilities (derivative financial instruments)	\$	—	\$ (2)	\$ —	\$ (2)
Other current liabilities (RFS obligations)		—	(494)	—	(494)
Long-term debt and finance lease obligations, net of current portion (long-term debt)		—	(1,620)	—	(1,620)
Total liabilities	\$	—	\$ (2,116)	\$ —	\$ (2,116)

The Company had no transfers of assets or liabilities between any of the above levels during the years ended December 31, 2022 and 2021.

(9) Share-Based Compensation

Overview

CVR Energy and CVR Partners have Long-Term Incentive Plans (collectively, the “LTIPs”) that permit the granting of options, stock and unit appreciation rights, restricted shares, restricted stock units, phantom units, unit awards, substitute awards, other unit-based awards, cash awards, dividend and distribution equivalent rights, share awards, and performance awards (including performance share units, performance units, and performance-based restricted stock). Individuals who are eligible to receive awards and grants under or in connection with the LTIPs include the employees, officers, and directors of the Company and CVR Partners. The Company had 6.8 million shares available for future grants under the CVR Energy LTIP at December 31, 2022.

Incentive and Phantom Unit Awards

Incentive and phantom unit awards that have been granted to officers, employees, and directors (collectively, the “Share-Based Awards”) reflect the value and dividends or distributions of CVR Energy or CVR Partners, as applicable. Each Share-Based Award and the related dividend or distribution equivalent right represents the right to receive, upon vesting, a cash payment equal to (i) the average fair market value of one share or unit, as applicable, in accordance with the award agreement, plus (ii) the per share or unit cash value of all dividends or distributions declared and paid, as applicable, from the grant date through the vesting date. The Share-Based Awards are generally graded-vesting awards, which vest over three years with one-third of the award vesting each year the grantee remains employed by the Company or its subsidiaries. Compensation expense is recognized ratably, based on service provided to the Company and its subsidiaries, with the amount recognized fluctuating as a result of the Share-Based Awards being remeasured to fair value at the end of each reporting period due to their liability-award classification.

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A summary of activity for the Company's Share-Based Awards for the year ended December 31, 2022 is presented below:

	Shares or Units ⁽¹⁾	Weighted-Average Grant-Date Fair Value (per share or unit)	Aggregate Intrinsic Value (in millions)
Non-vested at December 31, 2021	2,293,105	\$ 18.23	\$ 62
Granted	591,528	34.02	
Vested	(1,004,918)	19.30	
Forfeited	(141,095)	18.35	
Non-vested at December 31, 2022	1,738,620	\$ 22.97	\$ 68

(1) As of December 31, 2022, there are no outstanding awards under the LTIPs, and the only outstanding and unvested awards are issued in connection with and not under the LTIPs.

Performance Unit Awards

Pursuant to the amended employment agreement, effective December 22, 2021, with the Company's current chief executive officer, the Company amended the performance award agreement (the "CEO Performance Award") to extend the end of the performance period thereunder to December 31, 2024. The CEO Performance Award represents the right to receive upon vesting, a cash payment equal to \$10 million if the average closing price of the Company's common stock over the 30-day trading period from January 6, 2025 through February 20, 2025 is equal to or greater than \$60 per share.

Compensation Expense

A summary of total share-based compensation expense and unrecognized compensation expense related to the Share-Based Awards and the Company's performance awards during the years ended December 31, 2022, 2021, and 2020 is presented below:

	Expenses For the year ended December 31,			Unrecognized Expense At December 31, 2022	
(in millions)	2022	2021	2020	Amount	Weighted-Average Remaining Years
Share-Based Awards:					
Incentive Units	\$ 45	\$ 22	\$ 3	\$ 33	2.0
CVR Partners - Phantom Units	26	27	1	11	1.4
Performance Unit Awards:					
CEO Performance Award ⁽¹⁾	—	(3)	—	10	2.0
Total share-based compensation expense	\$ 71	\$ 46	\$ 4	\$ 54	

(1) All expenses, recognized and unrecognized, related to the CEO Performance Award are contingent upon whether the performance parameters are probable of being met. If the performance parameters are not met, no expense will be recognized.

The total tax benefit recognized during the years ended December 31, 2022, 2021, and 2020 related to compensation expense was \$19 million, \$12 million, and \$1 million, respectively. As of December 31, 2022 and 2021, the Company had a liability of \$35 million and \$23 million, respectively, for cash settled non-vested Share-Based Awards and associated dividend and distribution equivalent rights. For the years ended December 31, 2022, 2021, and 2020, the Company paid cash of \$58 million, \$30 million, and \$8 million, respectively, to settle liability-classified awards upon vesting.

Other Benefit Plans

The Company sponsors and administers two defined-contribution 401(k) plans, the CVR Energy 401(k) Plan and the CVR Energy 401(k) Plan for Represented Employees (collectively, the "Plans"), in which the Company's employees may participate.

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Participants in the Plans may elect to contribute a designated percentage of their eligible compensation in accordance with the Plans, subject to statutory limits. The Company provides a matching contribution of 100% of the first 6% of eligible compensation contributed by participants. Participants in the Plans are immediately vested in their individual contributions. The Plans provide for a three-year vesting schedule for the Company's matching contributions and contain a provision to count service with predecessor organizations. The Company had approximately \$11 million and \$10 million in contributions under the Plans for the years ended December 31, 2022 and 2020, respectively. The Company had no contributions for the year ended December 31, 2021, as the Company's matching contributions for the Plans were suspended effective January 1, 2021 and resumed effective January 1, 2022.

(10) Income Taxes

As of December 31, 2022 and 2021, the Company's Consolidated Balance Sheets reflected a receivable of \$22 million and \$26 million, respectively, from the IRS and certain state jurisdictions.

Income Tax Expense (Benefit)

Income tax expense (benefit) is comprised of the following:

	Year Ended December 31,		
	2022	2021	2020
<i>(in millions)</i>			
<i>Current:</i>			
Federal	\$ 156	\$ 84	\$ (63)
State	14	7	(5)
Total current	170	91	(68)
<i>Deferred:</i>			
Federal	(26)	(76)	(1)
State	13	(23)	(26)
Total deferred	(13)	(99)	(27)
Total income tax expense (benefit)	\$ 157	\$ (8)	\$ (95)

The following is a reconciliation of total income tax expense (benefit) to income tax expense (benefit) computed by applying the statutory federal income tax rate to pretax income (loss):

	Year Ended December 31,		
	2022	2021	2020
<i>(in millions)</i>			
Tax computed at federal statutory rate	\$ 168	\$ 14	\$ (87)
State income taxes, net of federal tax benefit	28	3	(18)
Changes in enacted state tax rates, net of federal tax benefit	—	(10)	—
State tax incentives, net of federal tax expense	(6)	(6)	(7)
Noncontrolling interest	(38)	(10)	13
Goodwill impairment	—	—	3
Other, net	5	1	1
Total income tax expense (benefit)	\$ 157	\$ (8)	\$ (95)

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Deferred Tax Assets and Liabilities

The income tax effect of temporary differences that give rise to the Deferred income tax assets and Deferred income tax liabilities at December 31, 2022 and 2021 are as follows:

<i>(in millions)</i>	December 31,	
	2022	2021
<i>Deferred income tax assets:</i>		
Personnel accruals	\$ 14	\$ 6
State tax credit carryforward, net	8	17
Net operating loss carryforward	—	2
Total gross deferred income tax assets	22	25
<i>Deferred income tax liabilities:</i>		
Investment in CVR Partners	(68)	(70)
Investment in CVR Refining	(202)	(222)
Other	(1)	(1)
Total gross deferred income tax liabilities	(271)	(293)
Net deferred income tax liabilities	\$ (249)	\$ (268)

Although realization is not assured, management believes that it is more likely than not that all of the deferred income tax assets will be realized, and therefore, no valuation allowance was recognized as of December 31, 2022 and 2021.

As of December 31, 2022, CVR Energy has state tax credits of approximately \$9 million, which are available to reduce future state income taxes. These credits have an indefinite carryover period.

Uncertain Tax Positions

A reconciliation of unrecognized tax benefits is as follows:

<i>(in millions)</i>	Year Ended December 31,		
	2022	2021	2020
Balance, beginning of year	\$ 17	\$ 17	\$ 22
Decrease based on prior year tax position	—	—	(2)
Reductions related to expirations from statute of limitations	(6)	—	(3)
Balance, end of year	\$ 11	\$ 17	\$ 17

Included in the balance of unrecognized tax benefits as of December 31, 2022, 2021, and 2020 are \$9 million, \$13 million, and \$13 million, respectively, of tax benefits that, if recognized, would affect the effective tax rate. Additionally, the Company reasonably believes that \$10 million of unrecognized tax positions related to state income tax credits will be recognized by the end of 2023 as a result of the expiration of statute of limitations. Approximately \$2 million and \$7 million of unrecognized tax benefits were netted with Deferred income tax asset carryforwards as of December 31, 2022 and 2021, respectively. The remaining unrecognized tax benefits are included in Other long-term liabilities in the Consolidated Balance Sheets.

CVR Energy recognized \$1 million interest expense and \$3 million liability for interest as of December 31, 2022, \$1 million interest expense and \$2 million liability for interest as of December 31, 2021, and a nominal interest expense and \$1 million liability for interest as of December 31, 2020. No penalties were recognized during 2022, 2021, or 2020.

At December 31, 2022, the Company's tax filings are open to examination in the United States for the tax years ended December 31, 2018 through December 31, 2021 and in various individual states for the tax years ended December 31, 2018 through December 31, 2021.

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(11) Commitments and Contingencies

Supply Commitments

The Company is a party to various supply agreements with both related and third parties which commit the Company to purchase minimum volumes of crude oil, hydrogen, oxygen, nitrogen, pet coke, and natural gas to run its facilities' operations.

The minimum required payments for unconditional purchase obligations are as follows:

<i>(in millions)</i>	Unconditional Purchase Obligations
<u>Year Ended December 31,</u>	
2023	\$ 142
2024	83
2025	83
2026	77
2027	71
Thereafter	187
	<u>\$ 643</u>

For the years ended December 31, 2022, 2021, and 2020, amounts purchased under these supply agreements totaled approximately \$200 million, \$176 million, and \$153 million, respectively.

Crude Oil Supply Agreement

Effective on August 4, 2021, an indirect, wholly-owned subsidiary of CVR Refining entered into the Second Amended and Restated Crude Oil Supply Agreement (the "Crude Oil Supply Agreement") with Vitol Inc. ("Vitol"), which superseded, in its entirety, the August 31, 2012 Amended and Restated Crude Oil Supply Agreement between the parties. Under the Crude Oil Supply Agreement, Vitol supplies the Petroleum Segment with crude oil and intermediation logistics helping to reduce the amount of inventory held at certain locations and mitigate crude oil pricing risk. Volumes contracted under the Crude Oil Supply Agreement, as a percentage of the total crude oil purchases (in barrels), were approximately 34%, 42%, and 33% for the years ended December 31, 2022, 2021, and 2020, respectively. The Crude Oil Supply Agreement, which currently extends through December 31, 2023, automatically renews for successive one-year terms (each such term, a "Renewal Term") unless either party provides the other with notice of non-renewal at least 180 days prior to expiration of the term or any Renewal Term.

Contingencies

Call Option Lawsuits - In December 2022, the Delaware Court of Chancery approved the final settlement of the consolidated lawsuits (collectively, the "Call Option Lawsuits") filed by purported former unitholders of CVR Refining on behalf of themselves and an alleged class of similarly situated unitholders against the Company and certain of its affiliates (the "Call Defendants") relating to the Company's exercise of the call option under the CVR Refining Amended and Restated Agreement of Limited Partnership assigned to it by CVR Refining's general partner including the Stipulation, Compromise and Release (the "Settlement") entered into by the parties on August 19, 2022. The Settlement had no further impact on the Company's financial position or results of operations beyond the \$79 million recognized within Other (expense) income, net in the Consolidated Statements of Operations for the year ended December 31, 2022 to reflect the estimated probable loss.

On November 28, 2022, the 434th Judicial District Court of Fort Bend County, Texas granted summary judgment in favor of the primary and excess insurers (the "Insurers") of the Call Defendants in the Insurers' declaratory judgment action seeking determination that the Insurers owe no indemnity coverage for the Call Option Lawsuits in relation to insurance policies that have coverage limits of \$50 million. The Company intends to appeal the grant of summary judgment while it concurrently pursues its claims against the Insurers it filed in October 2022 in the Superior Court of the State of Delaware (the "Superior Court") alleging breach of contract and breach of the implied covenant of good faith and fair dealing against their primary and excess insurers relating to their denial of coverage of the Call Defendants' defense expenses and indemnity, as well as other

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conduct of the Insurers relating to the Call Option Lawsuits. On January 3, 2023, the Superior Court granted the Call Defendants' motion for leave to amend its complaint to seek recovery from the Insurers of all of the amounts paid in settlement of the Call Option Lawsuits. As our potential appeal of the Texas court decision and our Superior Court lawsuit are in their early stages, the Company cannot determine at this time the outcome of these lawsuits, including whether the outcome would have a material impact on the Company's financial position, results of operations, or cash flows.

Renewable Fuel Standards - The Petroleum Segment's subsidiaries that are subject to the RFS (collectively, the "obligated-party subsidiaries") implemented by the Environmental Protection Agency (the "EPA"), which requires refiners to either blend renewable fuels into their transportation fuels or purchase renewable fuel credits, known as RINs, in lieu of blending. The Petroleum Segment's obligated-party subsidiaries are not able to blend the majority of its transportation fuels and must either purchase RINs or obtain waiver credits for cellulosic biofuels, or other exemptions from the EPA, in order to comply with the RFS. Additionally, the Petroleum Segment's obligated-party subsidiaries purchase RINs generated from our renewable diesel operations, whose operating results are not included in either of our reportable segments, to partially satisfy their RFS obligations.

For the years ended December 31, 2022, 2021, and 2020, the Company's obligated-party subsidiaries recognized expense of approximately \$435 million, \$435 million, and \$190 million, respectively, for their compliance with the RFS (based on the 2020, 2021, and 2022 renewable volume obligation ("RVO"), for the respective periods, excluding the impacts of any exemptions or waivers to which the Company may be entitled). The recognized amounts are included within Cost of materials and other in the Consolidated Statements of Operations and represent costs to comply with the RFS obligation through purchasing of RINs not otherwise reduced by blending of ethanol, biodiesel, or renewable diesel. At each reporting period, to the extent RINs purchased and generated through blending are less than the RFS obligation (excluding the impact of exemptions or waivers to which the Company may be entitled), the remaining position is valued using RIN market prices at period end. As of December 31, 2022 and 2021, the Company's obligated-party subsidiaries' RFS positions were approximately \$692 million and \$494 million, respectively, and are recorded in Other current liabilities on the Consolidated Balance Sheets.

RFS Disputes - The Company has filed a number of petitions in the United States Court of Appeals for the Fifth Circuit (the "Fifth Circuit") and the United States Court of Appeals for the District of Columbia Circuit (the "DC Circuit") challenging the EPA's denial of small refinery exemptions sought by Wynnewood Refining Company, LLC ("WRC") for the 2017 through 2021 compliance periods (the "SRE Denial Lawsuits"), the EPA's April 2022 and June 2022 alternative compliance rulings and the EPA's Final Rule issued in July 2022 establishing RVO, and also intervened in an action filed by certain biofuels producers relating to the RFS. In late 2022, the Fifth Circuit denied the EPA's motions to stay the SRE Denial Lawsuits, which motion remains pending. In February 2023, WRC filed a motion in the Fifth Circuit seeking a stay of enforcement of the RFS against WRC pending resolution of the SRE Denial Lawsuits. As each of these proceedings is in its preliminary stages, the Company cannot determine at this time the outcomes of these matters. While we intend to prosecute these actions vigorously, if these matters are ultimately concluded in a manner adverse to the Company, they could have a material effect on the Company's financial position, results of operations, or cash flows.

Environmental, Health, and Safety ("EHS") Matters

Clean Air Act Matter - In June and October 2020, the United States (on behalf of the EPA) and the state of Kansas, acting by and through the Kansas Department of Health and Environment ("KDHE"), demanded stipulated penalties from CRRM for alleged violations of a Consent Decree ("CD") the parties entered into in 2012. On April 5, 2021, CRRM filed a petition for judicial review of the stipulated penalty demand with the United States District Court for the District of Kansas ("D. Kan."). On March 30, 2022, the D. Kan. issued a memorandum and order denying CRRM's petition for judicial review and awarding the United States and KDHE approximately \$6.8 million in stipulated penalties (the "Stipulated Claims"). On May 12, 2022, CRRM appealed the D. Kan.'s order to the United States Court of Appeals for the Tenth Circuit, where it remains pending. Pursuant to the CD, CRRM has deposited the amount of the stipulated penalty demand into a commercial escrow account pending resolution of the disputed claim, and such funds are legally restricted for use and are included within Prepaid expenses and other current assets on the Consolidated Balance Sheets.

In December 2020, the United States and KDHE filed a supplemental complaint in the D. Kan., related to alleged violations of the CAA, CRRM's Title V permit, the Kansas state implementation plan ("SIP"), and Kansas law. The United States and KDHE subsequently amended that complaint in February 2022, adding claims for alleged violations of the CAA, CRRM's Title V permit, the Kansas SIP, and Kansas law. The United States and KDHE are seeking civil penalties and

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injunctive relief. In March 2022, CRRM filed a partial motion to dismiss certain claims in the amended supplemental complaint. On October 3, 2022, the D. Kan. issued a memorandum and order granting CRRM's motion to dismiss KDHE's request for penalties under Kansas law but denying the remainder of CRRM's motion to dismiss. The D. Kan. subsequently held a scheduling conference in December 2022 and entered a scheduling order in January 2023. Under that schedule, the case will proceed through discovery in 2023 and 2024. The court will schedule a trial in the case at a later date.

In January 2023, the United States (on behalf of the EPA) and the State of Kansas, through KDHE, amended their complaint before the D. Kan. in connection with their allegations that CRRM violated the CAA, the Kansas State Implementation Plan, Kansas law, 40 C.F.R. Part 63 and CRRM's permits relating to flares, heaters, and related matters and seeking civil penalties, injunctive and related relief (collectively, the "Statutory Claims"), adding certain claims including relating to an alleged failure to comply with certain emissions reporting requirements for 2016. Negotiations and proceedings remain ongoing relating to the Statutory Claims, and also relating to the Stipulated Claims being sought by the United States (on behalf of the EPA) and the State of Kansas (through KDHE) in connection with their allegations that CRRM violated the CAA and a 2012 Consent Decree between CRRM, the United States (on behalf of the EPA) and KDHE, following CRRM's appeal to the United States Court of Appeals for the Tenth Circuit of the denial by D.Kan. of CRRM's petition for judicial review of the Stipulated Claims. As negotiations and proceedings relating to the Stipulated Claims and the Statutory Claims are ongoing, the Company cannot determine at this time the outcome of these matters, including whether such outcome, or any subsequent enforcement or litigation relating thereto would have a material impact on the Company's financial position, results of operations, or cash flows.

Environmental Remediation - As of December 31, 2022 and 2021, environmental accruals representing estimated costs for future remediation efforts at certain Petroleum Segment sites totaled approximately \$22 million and \$12 million, respectively. These amounts are reflected in Other current liabilities or Other long-term liabilities depending on when the Company expects to expend such amounts.

(12) Business Segments

CVR Energy's revenues are primarily derived from two reportable segments: Petroleum and Nitrogen Fertilizer. The Company evaluates the performance of its segments based primarily on segment operating income (loss) and Earnings Before Interest, Taxes, Depreciation, and Amortization ("EBITDA"). For the purposes of the business segments disclosure, the Company presents operating income (loss) as it is the most comparable measure to the amounts presented on the Consolidated Statements of Operations. The other amounts reflect renewable fuels activities, intercompany eliminations, corporate cash and cash equivalents, income tax activities, and other corporate activities that are not allocated or aggregated to the reportable segments.

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The following table summarizes operating results and capital expenditures information by segment:

	Year Ended December 31,		
	2022	2021	2020
<i>(in millions)</i>			
<i>Net sales:</i>			
Petroleum	\$ 9,919	\$ 6,721	\$ 3,586
Nitrogen Fertilizer	836	533	350
Other, including intersegment eliminations ⁽¹⁾	141	(12)	(6)
Total net sales	\$ 10,896	\$ 7,242	\$ 3,930
<i>Operating income (loss):</i>			
Petroleum	\$ 719	\$ (27)	\$ (281)
Nitrogen Fertilizer	320	134	(35)
Other, including intersegment eliminations ⁽¹⁾	(76)	(20)	(17)
Total operating income (loss)	963	87	(333)
Interest expense, net	(85)	(117)	(130)
Investment income on marketable securities	—	81	41
Other (expense) income, net	(77)	15	7
Income (loss) before income tax expense	\$ 801	\$ 66	\$ (415)
<i>Depreciation and amortization:</i>			
Petroleum	\$ 187	\$ 203	\$ 202
Nitrogen Fertilizer	82	73	76
Other ⁽¹⁾	19	3	—
Total depreciation and amortization	\$ 288	\$ 279	\$ 278
<i>Capital expenditures: ⁽²⁾</i>			
Petroleum	\$ 86	\$ 50	\$ 90
Nitrogen fertilizer	41	26	16
Other ⁽¹⁾	76	150	15
Total capital expenditures	\$ 203	\$ 226	\$ 121

The following table summarizes total assets by segment:

	December 31,	
	2022	2021
<i>(in millions)</i>		
Petroleum	\$ 4,354	\$ 3,368
Nitrogen Fertilizer	1,100	1,127
Other, including intersegment eliminations ⁽¹⁾	(1,335)	(589)
Total assets	\$ 4,119	\$ 3,906

(1) Other includes amounts for the Wynnewood renewable diesel unit project.

(2) Capital expenditures are shown exclusive of capitalized turnaround expenditures and business combinations.

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(13) Supplemental Cash Flow Information

Cash flows related to income taxes, interest, leases, capital expenditures and deferred financing costs included in accounts payable, and non-cash dividends were as follows:

	Year Ended December 31,		
	2022	2021	2020
<i>(in millions)</i>			
<i>Supplemental disclosures:</i>			
Cash paid, net of refunds (received, net of payments) for income taxes	\$ 170	\$ 72	\$ (2)
Cash paid for interest	96	114	107
<i>Cash paid for amounts included in the measurement of lease liabilities:</i>			
Operating cash flows from operating leases	17	15	17
Operating cash flows from finance leases	5	5	6
Financing cash flows from finance leases	6	6	5
<i>Non-cash investing and financing activities:</i>			
Change in capital expenditures included in accounts payable ⁽¹⁾	12	2	(3)
Change in turnaround expenditures included in accounts payable	(2)	3	(4)
Change in deferred financing costs included in accounts payable	—	1	—
Non-cash dividends to CVR Energy stockholders	—	251	—

Cash, cash equivalents and restricted cash consisted of the following:

	As of December 31,	
	2022	2021
<i>(in millions)</i>		
Cash and cash equivalents	\$ 510	\$ 510
Restricted cash ⁽²⁾	7	7
Cash, cash equivalents and restricted cash	<u>\$ 517</u>	<u>\$ 517</u>

(1) Capital expenditures are shown exclusive of capitalized turnaround expenditures.

(2) The restricted cash balance is included within Prepaid expenses and other current assets on the Consolidated Balance Sheets.

(14) Related Party Transactions

Activity associated with the Company's related party arrangements for the years ended December 31, 2022, 2021, and 2020 is summarized below:

Expenses from Related Parties

	Year Ended December 31,		
	2022	2021	2020
<i>(in millions)</i>			
<i>Cost of materials and other:</i>			
Enable Joint Venture Transportation Agreement	\$ 10	\$ 11	\$ 11
Midway Joint Venture Agreement ⁽¹⁾	22	20	17
<i>Payments:</i>			
Dividends ⁽²⁾	342	348	85

(1) Represents reimbursements for crude oil transportation services incurred on the Midway JV through Vitol as the intermediary purchasing agent.

(2) See below for a summary of the dividends paid to IEP during the years ended December 31, 2022, 2021, and 2020.

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Enable Joint Venture Transportation and Terminalling Services Agreements

We are party to a transportation agreement, effective September 19, 2016, as part of the Enable JV for an initial term of 20 years under which Enable provides transportation services for crude oil purchased within a defined geographic area. Additionally, we entered into a terminalling services agreement, effective September 19, 2016, with Enable JV under which it receives access to Enable JV's terminal in Lawrence, Oklahoma to unload and pump crude oil into Enable JV's pipeline for an initial term of 20 years.

Corporate Master Service Agreement

On April 12, 2022, in connection with our Corporate Master Service Agreement effective January 1, 2020, by and among our wholly-owned subsidiary, CVR Services, and certain other of our subsidiaries, including but not limited to CVR Partners and its subsidiaries, pursuant to which CVR Services provides the service recipients thereunder with management and other professional services (the "Corporate MSA"), the Joining Subsidiaries were joined as service recipients under the Corporate MSA.

Dividends to CVR Energy Stockholders

Dividends, if any, including the payment, amount and timing thereof, are determined in the discretion of CVR Energy's board of directors (the "Board"). IEP, through its ownership of the Company's common stock, is entitled to receive dividends that are declared and paid by the Company based on the number of shares held at each record date. The following table presents quarterly dividends, excluding any special dividends, paid to the Company's stockholders, including IEP, during 2022 (amounts presented in table below may not add to totals presented due to rounding).

Related Period	Date Paid	Quarterly Dividends Per Share	Quarterly Dividends Paid (in millions)		
			Public Stockholders	IEP	Total
2022 - 1st Quarter	May 23, 2022	\$ 0.40	\$ 12	\$ 28	\$ 40
2022 - 2nd Quarter	August 22, 2022	0.40	12	28	40
2022 - 3rd Quarter	November 21, 2022	0.40	12	28	40
Total 2022 quarterly dividends		\$ 1.20	\$ 35	\$ 85	\$ 121

No quarterly dividends were paid during the first quarter of 2022 related to the fourth quarter of 2021, and there were no quarterly dividends declared or paid during 2021 related to the first, second, and third quarters of 2021 and fourth quarter of 2020. During the year ended December 31, 2020, the Company paid quarterly dividends totaling \$1.20 per common share, or \$121 million. Of these dividends, IEP received \$85 million due to its ownership interest in the Company's shares.

On August 1, 2022 and October 31, 2022, the Company also declared special dividends of \$2.60 and \$1.00 per share, or \$261 million and \$101 million, respectively, which were paid on August 22, 2022 and November 21, 2022, respectively. Of these amounts, IEP received \$185 million and \$71 million, respectively, due to its ownership interest in the Company's shares.

On May 26, 2021, the Company announced a special dividend of approximately \$492 million, or equivalent to \$4.89 per share of the Company's common stock, to be paid in a combination of cash (the "Cash Distribution") and the common stock of Delek held by the Company (the "Stock Distribution"). On June 10, 2021, the Company distributed an aggregate amount of approximately \$241 million, or \$2.40 per share of the Company's common stock, pursuant to the Cash Distribution, and approximately 10,539,880 shares of Delek common stock, which represented approximately 14.3% of the outstanding shares of Delek common stock, pursuant to the Stock Distribution. IEP received approximately 7,464,652 shares of common stock of Delek and \$171 million in cash. The Stock Distribution was recorded as a reduction to equity through a derecognition of our investment in Delek, and the Company recognized a gain of \$112 million from the initial investment in Delek through the date of the Stock Distribution.

For the fourth quarter of 2022, the Company, upon approval by the Board on February 21, 2023, declared a cash dividend of \$0.50 per share, or \$50 million, which is payable March 13, 2023 to shareholders of record as of March 6, 2023. Of this amount, IEP will receive \$36 million due to its ownership interest in the Company's shares.

CVR ENERGY, INC. AND SUBSIDIARIES
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Distributions to CVR Partners' Unitholders

Distributions, if any, including the payment, amount and timing thereof, are subject to change at the discretion of the UAN GP Board. The following tables present quarterly distributions paid by CVR Partners to its unitholders, including amounts received by the Company, during December 31, 2022 and 2021 (amounts presented in tables below may not add to totals presented due to rounding):

Related Period	Date Paid	Quarterly Distributions Per Common Unit	Quarterly Distributions Paid (in millions)		
			Public Unitholders	CVR Energy	Total
2021 - 4th Quarter	March 14, 2022	\$ 5.24	\$ 35	\$ 20	\$ 56
2022 - 1st Quarter	May 23, 2022	2.26	15	9	24
2022 - 2nd Quarter	August 22, 2022	10.05	67	39	106
2022 - 3rd Quarter	November 21, 2022	1.77	12	7	19
Total 2022 quarterly distributions		\$ 19.32	\$ 129	\$ 75	\$ 205

Related Period	Date Paid	Quarterly Distributions Per Common Unit	Quarterly Distributions Paid (in millions)		
			Public Unitholders	CVR Energy	Total
2021 - 2nd Quarter	August 23, 2021	\$ 1.72	\$ 11	\$ 7	\$ 18
2021 - 3rd Quarter	November 22, 2021	2.93	20	11	31
Total 2021 quarterly distributions		\$ 4.65	\$ 31	\$ 18	\$ 50

There were no quarterly distributions declared or paid by CVR Partners related to the first quarter of 2021 and fourth quarter of 2020. During the year ended December 31, 2020, there were no quarterly distributions declared or paid by CVR Partners.

For the fourth quarter of 2022, CVR Partners, upon approval by the UAN GP Board on February 21, 2023, declared a distribution of \$10.50 per common unit, or \$111 million, which is payable March 13, 2023 to unitholders of record as of March 6, 2023. Of this amount, CVR Energy will receive approximately \$41 million, with the remaining amount payable to public unitholders.

(15) Subsequent Events

We believe that certain carbon oxide capture and sequestration activities conducted at or in connection with the Coffeyville Fertilizer Facility qualify under the Internal Revenue Service safe harbor described in Revenue Procedure 2020-12 for certain tax credits available to joint ventures under Section 45Q of the Internal Revenue Code of 1986, as amended ("Section 45Q Credits"). In January 2023, we entered into a series of agreements with CapturePoint LLC, an unaffiliated Texas limited liability company, and certain unaffiliated third-party investors intended to qualify under the Internal Revenue Service safe harbor described in Revenue Procedure 2020-12 for certain joint ventures that are eligible to claim Section 45Q Credits and to allow us to monetize Section 45Q Credits we expect to generate from January 6, 2023 until March 31, 2030. In January 2023, we received an initial upfront payment, net of expenses, of approximately \$18 million and could receive up to an additional \$60 million in payments through March 31, 2030, if certain carbon oxide capture and sequestration milestones are met, subject to the terms of the applicable agreements. The foregoing summaries of the applicable agreements do not purport to be complete and are qualified in their entirety by the terms of the relevant agreements, which will be filed with our Quarterly Report on Form 10-Q for the period ended March 31, 2023.

Effective February 1, 2023, in connection with our growing focus on decarbonization, we completed a transformation and restructuring of our business to segregate our renewables business. The restructuring took place in several phases, and included the formation of new, wholly-owned subsidiaries ("NewCos") of CVR Energy, and transferred certain assets to these NewCos

CVR ENERGY, INC. AND SUBSIDIARIES
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to, among other purposes, better align our organizational structure with management, financial reporting, and our goal to maximize our renewables focus.

The Company evaluated all other subsequent events, if any, that would require an adjustment to the Company's consolidated financial statements or require disclosure in the notes to the consolidated financial statements through the date of issuance of the consolidated financial statements. Where applicable, the notes to these consolidated financial statements have been updated to discuss all significant subsequent events which have occurred.

Item 9. *Changes in and Disagreements with Accountants on Accounting and Financial Disclosure*

None.

Item 9A. *Controls and Procedures*

Evaluation of Disclosure Controls and Procedures

The Company has evaluated, under the direction and with the participation of the Chief Executive Officer and Chief Financial Officer, the effectiveness of our disclosure controls and procedures, as defined in Exchange Act Rule 13a-15(e) and 15d-15(e). Based upon this evaluation, the Company's Chief Executive Officer and Chief Financial Officer concluded that disclosure controls and procedures were effective as of December 31, 2022.

Management's Report on Internal Control Over Financial Reporting

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. 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. Under the supervision and with the participation of management, we conducted an evaluation of the effectiveness of its internal control over financial reporting based on the framework in the 2013 *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based on that evaluation, the Company's Chief Executive Officer, Chief Financial Officer and Chief Accounting Officer have concluded that internal control over financial reporting was effective as of December 31, 2022. The Company's independent registered public accounting firm, that audited the consolidated financial statements included herein under Part II, Item 8 of this Report, has issued a report on the effectiveness of the Company's internal control over financial reporting. This report can be found under Part II, Item 8 of this Report.

Changes in Internal Control Over Financial Reporting

There have been no material changes in our internal controls over financial reporting required by Rule 13a-15 of the Exchange Act that occurred during the fiscal quarter ended December 31, 2022 that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. *Other Information*

On February 20, 2023, the Compensation Committee of our Board adopted the CVR Energy, Inc. 2023 Performance Based Bonus Plan and the CVR Refining, LP 2023 Performance Based Bonus Plan (collectively, the "2023 CVI Plans"), which apply to all eligible employees of our subsidiaries (excluding those of CVR Partners and its subsidiaries) and contain terms equivalent to the CVR Energy, Inc. 2022 Performance Based Bonus Plan and the CVR Refining, LP 2022 Performance Based Bonus Plan. The 2023 CVI Plans will be filed with our Quarterly Report on Form 10-Q for the period ending March 31, 2023.

Item 9C. *Disclosure Regarding Foreign Jurisdictions that Prevent Inspections*

Not applicable.

PART III

Item 10. *Directors, Executive Officers and Corporate Governance*

The information required by Items 401, 405, 406, and 407(c)(3), (d)(4), and (d)(5) of Regulation S-K in response to this item will be set forth in our definitive proxy statement for our 2023 annual meeting of stockholders.

Item 11. *Executive Compensation*

The information required by Items 402 and 407(e)(4) and (e)(5) of Regulation S-K in response to this item will be set forth in our definitive proxy statement for our 2023 annual meeting of stockholders.

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

The equity compensation plan information required by Items 201(d) and the information required by Item 403 of Regulation S-K in response to this item will be set forth in our definitive proxy statement for our 2023 annual meeting of stockholders.

Item 13. *Certain Relationships and Related Transactions, and Director Independence*

The information required by Items 404 and 407(a) of Regulation S-K in response to this item will be set forth in our definitive proxy statement for our 2023 annual meeting of stockholders.

Item 14. *Principal Accounting Fees and Services*

The information required by Items 9(e) of Schedule 14A in response to this item will be set forth in our definitive proxy statement for our 2023 annual meeting of stockholders.

PART IV

Item 15. *Exhibits, Financial Statement Schedules*

(a)(1) Financial Statements - See Part II, Item 8 of this Annual Report on Form 10-K.

(a)(2) Financial Statement Schedules - All schedules for which provision is made in the applicable accounting regulations of the Securities and Exchange Commission (the “SEC”) are not required under the related instructions or are inapplicable and therefore have been omitted.

(a)(3) Exhibits

INDEX TO EXHIBITS

Exhibit Number	Exhibit Description
2.1**	Transaction Agreement among CVR Energy, Inc., IEP Energy LLC and each of the other Offeror Parties (as defined therein) dated as of April 18, 2012 (incorporated by reference to Exhibit 2.1 to the Company’s Form 8-K filed on April 23, 2012).
3.1**	Amended and Restated Certificate of Incorporation of CVR Energy, Inc. (incorporated by reference to Exhibit 3.1 to the Company’s Form 8-K filed on June 15, 2018).
3.2**	Second Amended and Restated Bylaws of CVR Energy, Inc. (incorporated by reference to Exhibit 3.2 to the Company’s Form 8-K filed on June 15, 2018).
4.1**	Description of Common Stock (incorporated by reference to Exhibit 4.1 to the Company’s Form 10-K filed on February 20, 2020).
4.2**	Specimen Common Stock Certificate (incorporated by reference to Exhibit 4.1 to the Company’s Registration Statement on Form S-1/A, File No. 333-137588, filed on June 5, 2007).
4.4**	Indenture, dated as of January 27, 2020, among CVR Energy, Inc., the guarantors named therein and Wells Fargo Bank, National Association, as Trustee (incorporated by reference to Exhibit 4.1 to the Form 8-K filed on January 27, 2020).
4.5**	Form of 5.250% Senior Notes due 2025 (incorporated by reference to Exhibit 4.2 to the Form 8-K filed on January 27, 2020).
4.6**	Form of 5.750% Senior Notes due 2028 (incorporated by reference to Exhibit 4.3 to the Form 8-K filed on January 27, 2020).
4.7**	Indenture, dated as of June 23, 2021, among CVR Partners, LP, CVR Nitrogen Finance Corporation, the Guarantors party thereto and Wilmington Trust, National Association, as trustee and collateral trustee (incorporated by reference to Exhibit 4.1 to the Company’s Form 8-K filed on June 23, 2021).
4.8**	Form of 6.125% Senior Secured Note due 2028 (incorporated by reference to Exhibit 4.2 to the Company’s Form 8-K filed on June 23, 2021).
4.9**	Supplemental Indenture, dated as of April 12, 2022, among CVR Renewables, LLC, CVR Energy, Inc., the existing guarantors named therein and Wells Fargo Bank, National Association, as Trustee (Incorporated by reference to Exhibit 4.1 to the Company’s Form 10-Q filed on May 3, 2022).
4.10**	Supplemental Indenture, dated as of July 1, 2022, among CVR Energy, Inc., the guarantors party thereto, and Wells Fargo Bank, National Association, as Trustee (incorporated by reference to Exhibit 4.1 to the Company’s Form 8-K filed on July 1, 2022).
10.1**	Amended and Restated ABL Credit Agreement, dated as of December 20, 2012, among Coffeyville Resources, LLC, CVR Refining, LP, CVR Refining, LLC, Coffeyville Resources Refining & Marketing, LLC, Coffeyville Resources Pipeline, LLC, Coffeyville Resources Crude Transportation, LLC, Coffeyville Resources Terminal, LLC, Wynnewood Energy Company, LLC, Wynnewood Refining Company, LLC and certain of their affiliates, the lenders from time to time party thereto, Wells Fargo Bank, National Association, as collateral agent and administrative agent (incorporated by reference to Exhibit 1.1 to the Company’s Form 8-K filed on December 27, 2012).

- 10.1.1** Amendment No. 1 to Amended and Restated ABL Credit Agreement, dated November 14, 2017, by and among CVR Refining, LP, Coffeyville Finance Inc., CVR Refining, LLC, Coffeyville Resources Refining & Marketing, LLC, Coffeyville Resources Pipeline, LLC, Coffeyville Resources Crude Transportation, LLC, Coffeyville Resources Terminal, LLC, Wynnewood Energy Company, LLC, Wynnewood Refining Company, LLC, CVR Logistics, LLC, a group of lenders and Wells Fargo, National Association, as administrative agent and collateral agent (incorporated by reference as Exhibit 10.1 to the Form 8-K filed by CVR Refining, LP on November 17, 2017).
- 10.1.2** Amendment No. 2 to Amended and Restated ABL Credit Agreement, dated as of December 23, 2019, and effective December 31, 2019, by and among CVR Refining, LP, Coffeyville Finance Inc., CVR Refining, LLC, Coffeyville Resources Refining & Marketing, LLC, Coffeyville Resources Pipeline, LLC, Coffeyville Resources Crude Transportation, LLC, Coffeyville Resources Terminal, LLC, Wynnewood Energy Company, LLC, Wynnewood Refining Company, LLC, CVR Logistics, LLC, a group of lenders and Wells Fargo Bank, National Association, as collateral agent and administrative agent (incorporated by reference to Exhibit 10.1.2 to the Company's Form 10-K filed on February 20, 2020).
- 10.1.3** Amendment No. 3 to Amended and Restated ABL Credit Agreement dated June 30, 2022, by and among CVR Refining, LP and certain of its subsidiaries, Wells Fargo Bank, National Association, as administrative agent and collateral agent and the group of lenders from time to time party thereto (incorporated by reference to Exhibit 10.1 to the Company's Form 8-K filed on July 1, 2022).
- 10.2** Amended and Restated ABL Pledge and Security Agreement, dated as of December 20, 2012, among CVR Refining, LP, CVR Refining, LLC, Coffeyville Resources Refining & Marketing, LLC, Coffeyville Resources Pipeline, LLC, Coffeyville Resources Crude Transportation, LLC, Coffeyville Resources Terminal, LLC, Wynnewood Energy Company, LLC, Wynnewood Refining Company, LLC and certain of their affiliates, and Wells Fargo Bank, National Association, as collateral agent (incorporated by reference to Exhibit 1.2 to the Company's Form 8-K filed on December 27, 2012).
- 10.3** Master Service Agreement among Coffeyville Resources Refining & Marketing, LLC and Coffeyville Resources Nitrogen Fertilizers, LLC, dated February 19, 2020 (incorporated by reference to Exhibit 10.4 to the Company's Form 10-K filed on February 20, 2020).
- 10.4** Master Service Agreement among CVR Services, LLC and subsidiaries of CVR Energy, dated February 19, 2020 (incorporated by reference to Exhibit 10.5 to the Company's Form 10-K filed on February 20, 2020).
- 10.4.1** Amendment to Master Service Agreement, dated as of April 12, 2022, among CVR Services, LLC and subsidiaries of CVR Energy (incorporated by reference to Exhibit 10.13 to the Company's Form 10-Q filed on May 3, 2022).
- 10.5** Amended and Restated Crude Oil Supply Agreement, dated August 31, 2012, by and between Vitol Inc. and Coffeyville Resources Refining & Marketing, LLC (incorporated by reference to Exhibit 10.2 to the Company's Form 10-Q filed on November 6, 2012) (Certain portions of this exhibit have been omitted and separately filed with the SEC pursuant to a request for confidential treatment which has been granted by the SEC).
- 10.5.1** First Amendment to Amended and Restated Crude Oil Supply Agreement, dated as of June 8, 2015, by and between Vitol Inc. and Coffeyville Resources Refining & Marketing, LLC (incorporated by reference to Exhibit 10.1 to the Company's Form 10-Q filed on July 30, 2015).
- 10.5.2** Second Amended and Restated Crude Oil Supply Agreement, dated August 4, 2021, by and between Vitol Inc. and Coffeyville Resources Refining & Marketing, LLC (incorporated by reference as Exhibit 10.1 to the Company's Form 10-Q filed on November 2, 2021).
- 10.6**+ Performance Unit Award Agreement, dated as of November 1, 2017, by and between CVR Energy, Inc. and David L. Lamp (incorporated by reference as Exhibit 10.22 to the Form 10-K filed by CVR Partners, LP on February 23, 2018 (Commission File No. 001-35120)).
- 10.7** Composite copy of the Second Amended and Restated Agreement of Limited Partnership of CVR Partners, LP (as amended by Amendment No. 1 effective January 1, 2018) (incorporated by reference to Exhibit 3.2 of the Form 10-Q filed by CVR Partners, LP on April 26, 2018 (Commission File No. 001-35120)) (*Corrected version of exhibit previously filed as Exhibit 10.9 to the Company's Annual Report on Form 10-K for the year ended December 31, 2021*).
- 10.8** Environmental Agreement, dated as of October 25, 2007, by and between Coffeyville Resources Refining & Marketing, LLC and Coffeyville Resources Nitrogen Fertilizers, LLC (incorporated by reference to Exhibit 10.7 to the Company's Form 10-Q filed on December 6, 2007).

- 10.8.1** Supplement to Environmental Agreement, dated as of February 15, 2008, by and between Coffeyville Resources Refining and Marketing, LLC and Coffeyville Resources Nitrogen Fertilizers, LLC (incorporated by reference to Exhibit 10.17.1 to the Company's Form 10-K filed on March 28, 2008).
- 10.8.2** Second Supplement to Environmental Agreement, dated as of July 23, 2008, by and between Coffeyville Resources Refining and Marketing, LLC and Coffeyville Resources Nitrogen Fertilizers, LLC (incorporated by reference to Exhibit 10.1 to the Company's Form 10-Q filed on August 14, 2008).
- 10.9** Amended and Restated Omnibus Agreement, dated as of April 13, 2011, among CVR Energy, Inc., CVR GP, LLC and CVR Partners, LP (incorporated by reference to Exhibit 10.2 to the Company's Form 8-K/A filed on May 23, 2011).
- 10.10** Lease and Operating Agreement, dated as of May 4, 2012, by and between Coffeyville Resources Terminal, LLC and Coffeyville Resources Nitrogen Fertilizers, LLC (incorporated by reference to Exhibit 10.4 to the Company's Form 10-Q filed on August 2, 2012).
- 10.11**+ Form of Indemnification Agreement (incorporated by reference to Exhibit 10.49 to the Company's Form 10-K for the year ended December 31, 2008, filed on March 13, 2009).
- 10.12**+ Second Amended and Restated CVR Energy, Inc. 2007 Long Term Incentive Plan, dated as of June 6, 2017 (incorporated by reference to Appendix A to the Company's Proxy Statement filed on April 27, 2017).
- 10.13**+ Form of Incentive Unit Agreement (incorporated by reference to Exhibit 10.30.7 to the Company's Form 10-K filed on February 21, 2018.)
- 10.14**+ Form of CVR Energy, Inc. Incentive Unit Agreement (incorporated by reference to Exhibit 10.31 to the Company's Form 10-K filed on February 21, 2019).
- 10.14.1**+ Form CVR Energy, Inc. Incentive Unit Agreement (Executive) (incorporated by reference to Exhibit 10.31.1 to the Company's Form 10-K filed on February 21, 2019).
- 10.14.2**+ Form CVR Energy, Inc. Incentive Unit Agreement (Executive) (incorporated by reference to Exhibit 10.17.2 to the Company's Form 10-K filed on February 23, 2022).
- 10.14.3**+ Form CVR Energy, Inc. Incentive Unit Agreement (incorporated by reference to Exhibit 10.17.3 to the Company's Form 10-K filed on February 23, 2022).
- 10.15**+ CVR Energy, Inc. Change in Control and Severance Plan, as amended effective January 1, 2022 (incorporated by reference to Exhibit 10.18.1 to the Company's Form 10-K filed on February 23, 2022).
- 10.16**+ CVR Partners, LP Long-Term Incentive Plan (adopted March 16, 2011) (incorporated by reference to Exhibit 10.1 to the Form S-8 filed by CVR Partners, LP on April 12, 2011).
- 10.17**+ Form of CVR Partners, LP Long-Term Incentive Plan Employee Phantom Unit Agreement (incorporated by reference to Exhibit 10.38.3 to the Company's Form 10-K filed on February 20, 2015).
- 10.18**+ Form of CVR Partners, LP Long-Term Incentive Plan Employee Phantom Unit Agreement (Executive) (incorporated by reference to Exhibit 10.30.2 to the Company's Form 10-K filed on February 20, 2020).
- 10.19**+ Form of CVR Partners, LP Long-Term Incentive Plan Employee Phantom Unit Agreement (incorporated by reference to Exhibit 10.30.3 to the Company's Form 10-K filed on February 20, 2020).
- 10.19.1**+ Form of CVR Partners, LP Long-Term Incentive Plan Employee Phantom Unit Agreement (Executive) (incorporated by reference to Exhibit 10.22.4 to the Company's Form 10-K filed on February 23, 2022).
- 10.19.2**+ Form of CVR Partners, LP Long-Term Incentive Plan Employee Phantom Unit Agreement (incorporated by reference to Exhibit 10.22.5 to the Company's Form 10-K filed on February 23, 2022).
- 10.20** Collateral Trust Agreement, dated as of June 10, 2016, among CVR Partners, LP, CVR Nitrogen Finance Corporation, the Guarantors (as defined therein) and Wilmington Trust, National Association, as Trustee and Collateral Trustee (incorporated by reference to Exhibit 10.1 of the Form 8-K filed by CVR Partners, LP on June 16, 2016 (Commission File No. 001-35120)).
- 10.20.1** Parity Lien Security Agreement, dated as of June 10, 2016, among CVR Partners, LP, CVR Nitrogen Finance Corporation, the Guarantors (as defined therein) and Wilmington Trust, National Association, as Trustee and Collateral Trustee (incorporated by reference to Exhibit 10.2 of the Form 8-K filed by CVR Partners, LP on June 16, 2016 (Commission File No. 001-35120)).

- 10.21** Intercreditor Agreement, dated as of September 30, 2016, among CVR Partners, LP, CVR Nitrogen, LP, East Dubuque Nitrogen Fertilizers, LLC, Coffeyville Resources Nitrogen Fertilizers, LLC, CVR Nitrogen Holdings, LLC, CVR Nitrogen Finance Corporation, CVR Nitrogen GP, LLC, certain of their affiliates from time to time party thereto, UBS AG, Stamford Branch, as administrative agent and collateral agent for the secured parties, Wilmington Trust, National Association, as trustee and collateral trustee for the secured parties in respect of the outstanding senior secured notes and other parity lien obligations and other parity lien representative from time to time party thereto (incorporated by reference to Exhibit 10.3 of the Form 8-K filed by CVR Partners, LP on October 6, 2016 (Commission File No. 001-35120)).
- 10.22** On-Site Product Supply Agreement among Coffeyville Resources Nitrogen Fertilizers, LLC and Messer LLC dated as of July 31, 2020 (incorporated by reference to Exhibit 10.1 to the Company's Form 10-Q filed on August 4, 2020).
- 10.23** Amendment No. 1 to On-Site Product Supply Agreement among Coffeyville Resources Nitrogen Fertilizers, LLC and Messer LLC dated as of February 21, 2022 (incorporated by reference to Exhibit 10.30.1 to the Company's Form 10-K filed on February 23, 2022).
- 10.24**+ CVR Energy, Inc. 2020 Performance-Based Bonus Plan, approved February 19, 2020 (incorporated by reference to Exhibit 10.38 to the Company's Form 10-K filed on February 20, 2020).
- 10.25**+ CVR Partners, LP 2020 Performance-Based Bonus Plan, approved February 19, 2020 (incorporated by reference to Exhibit 10.39 to the Company's Form 10-K filed on February 20, 2020).
- 10.26**+ CVR Refining, LP 2020 Performance-Based Bonus Plan, approved February 19, 2020 (incorporated by reference to Exhibit 10.40 to the Company's Form 10-K filed on February 20, 2020).
- 10.27**+ CVR Energy, Inc. 2021 Performance-Based Bonus Plan, approved February 19, 2021 (incorporated by reference to Exhibit 10.41 to the Company's Form 10-K filed on February 23, 2021).
- 10.28**+ CVR Partners, LP 2021 Performance-Based Bonus Plan, approved February 19, 2021 (incorporated by reference to Exhibit 10.42 to the Company's Form 10-K filed on February 23, 2021).
- 10.29**+ CVR Refining, LP 2021 Performance-Based Bonus Plan, approved February 19, 2021 (incorporated by reference to Exhibit 10.43 to the Company's Form 10-K filed on February 23, 2021).
- 10.30** Collateral Trust Joinder, dated as of June 23, 2021, among CVR Partners, LP, CVR Nitrogen Finance Corporation, the Guarantors party thereto and Wilmington Trust, National Association, as trustee and collateral trustee (incorporated by reference to Exhibit 10.3 to the Company's Form 8-K filed on June 23, 2021).
- 10.31** The Joinder Agreement (Other Parity Lien Obligations), dated as of June 23, 2021, among Wilmington Trust, National Association, as an other parity obligations representative, UBS AG, Stamford Branch, as collateral agent under the Existing ABL Facility, Wilmington Trust, National Association, as applicable parity lien representative, Wilmington Trust, National Association, as parity lien collateral trustee and CVR Partners, LP (incorporated by reference to Exhibit 10.4 to the Company's Form 8-K filed on June 23, 2021).
- 10.32** Credit Agreement, dated as of September 30, 2021, among CVR Partners, LP, CVR Nitrogen, LP, East Dubuque Nitrogen Fertilizers, LLC, Coffeyville Resources Nitrogen Fertilizers, LLC, CVR Nitrogen Holdings, LLC, CVR Nitrogen Finance Corporation, CVR Nitrogen GP, LLC, certain of their subsidiaries from time to time party thereto, the lenders from time to time party thereto and Wells Fargo Bank, National Association, a national banking association, as administrative agent and collateral agent (incorporated by reference to Exhibit 10.1 to the Company's Form 8-K filed on September 30, 2021).
- 10.33** Guaranty and Security Agreement, dated as of September 30, 2021, among CVR Partners, LP, CVR Nitrogen, LP, East Dubuque Nitrogen Fertilizers, LLC, Coffeyville Resources Nitrogen Fertilizers, LLC, CVR Nitrogen Holdings, LLC, CVR Nitrogen Finance Corporation, CVR Nitrogen GP, LLC, certain of their subsidiaries from time to time party thereto, and Wells Fargo Bank, National Association, a national banking association, as administrative agent and collateral agent (incorporated by reference to Exhibit 10.2 to the Company's Form 8-K filed on September 30, 2021).

- 10.34** Joinder Agreement (Other Parity Lien Obligations), dated as of September 30, 2021, among Wilmington Trust, National Association (“WTNA”), as an other applicable parity obligations representative, UBS AG, Stamford Branch (“UBS”), as collateral agent under the existing ABL Facility, WTNA, as applicable parity lien representative, WTNA, as parity lien collateral trustee, Wells Fargo, as collateral agent under the ABL ~~CREDIT AGREEMENT~~ CREDIT AGREEMENT (as amended, supplemented or otherwise modified to date), among the Credit Parties, certain of their subsidiaries from time to time party thereto, UBS as trustee and collateral trustee for the secured parties in respect of the outstanding senior secured notes and other parity lien obligations and other parity lien representative from time to time party thereto (incorporated by reference to Exhibit 10.3 to the Company’s Form 8-K filed on September 30, 2021).
- 10.35**+ Employment Agreement, dated as of December 22, 2021, by and between CVR Energy, Inc. and David L. Lamp (incorporated by reference to Exhibit 10.1 to the Company’s Form 8-K filed on December 27, 2021).
- 10.36**+ Amendment to Performance Unit Award Agreement, dated as of December 22, 2021, by and between CVR Energy, Inc. and David L. Lamp (incorporated by reference to Exhibit 10.2 to the Company’s Form 8-K filed on December 27, 2021).
- 10.37**× Counterpart Agreement, dated April 12, 2022, by CVR Renewables, LLC to the Amended and Restated ABL Pledge and Security Agreement, dated as of December 20, 2012 (incorporated by reference to Exhibit 10.11 to the Company’s Form 10-Q filed on May 3, 2022).
- 10.38** Joinder Agreement, dated as of April 12, 2022, by CVR Renewables, LLC to the Amended and Restated ABL Credit Agreement, dated as of December 20, 2012 (incorporated by reference to Exhibit 10.12 to the Company’s Form 10-Q filed on May 3, 2022).
- 10.39** Joinder Agreement, dated as of July 22, 2022, by certain subsidiaries of CVR Energy, Inc. to the Amended and Restated ABL Credit Agreement, dated as of December 20, 2012 (incorporated by reference to Exhibit 10.5 to the Company’s Form 10-Q filed on August, 2, 2022).
- 10.40**× Counterpart Agreement, dated as of July 22, 2022, by certain subsidiaries of CVR Energy, Inc. to the Amended and Restated ABL Pledge and Security Agreement, dated as of December 20, 2012 (incorporated by reference to Exhibit 10.6 to the Company’s Form 10-Q filed on August, 2, 2022).
- 10.41**+ CVR Energy, Inc. 2022 Performance-Based Bonus Plan, approved February 21, 2022 (incorporated by reference to Exhibit 10.8 to the Company’s Form 10-Q filed on May 3, 2022).
- 10.42**+ CVR Partners, LP 2022 Performance-Based Bonus Plan, approved February 21, 2022 (incorporated by reference to Exhibit 10.9 to the Company’s Form 10-Q filed on May 3, 2022).
- 10.43**+ CVR Refining, LP 2022 Performance-Based Bonus Plan, approved February 21, 2022 (incorporated by reference to Exhibit 10.10 to the Company’s Form 10-Q filed on May 3, 2022).
- 21.1* List of Subsidiaries of CVR Energy, Inc.
- 23.1* Consent of Grant Thornton LLP.
- 31.1* Rule 13a-14(a)/15d-14(a) Certification of President and Chief Executive Officer.
- 31.2* Rule 13a-14(a)/15d-14(a) Certification of Executive Vice President, Chief Financial Officer.
- 31.3* Rule 13a-14(a)/15d-14(a) Certification of Chief Accounting Officer and Corporate Controller.
- 32.1† Section 1350 Certification of President and Chief Executive Officer and Executive Vice President, Chief Financial Officer, and Chief Accounting Officer and Corporate Controller.
- 101* The following financial information for CVR Energy, Inc.’s Annual Report on Form 10-K for the year ended December 31, 2022, formatted in Inline XBRL (“Extensible Business Reporting Language”) includes: (i) Consolidated Balance Sheets, (ii) Consolidated Statements of Operations, (iii) Consolidated Statements of Comprehensive Income, (iv) Consolidated Statements of Changes in Equity, (v) Consolidated Statements of Cash Flows, and (vi) the Notes to Consolidated Financial Statements, tagged in detail. The instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
- 104* Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).

* Filed herewith.

- ** Previously filed.
- † Furnished herewith.
- + Denotes management contract or compensatory plan or arrangement.
- × The exhibits and schedules have been omitted pursuant to Item 601(a)(5) of Regulation S-K and will be provided to the Securities and Exchange Commission upon request.

PLEASE NOTE: Pursuant to the rules and regulations of the SEC, we may file or incorporate by reference agreements as exhibits to the reports that we file with or furnish to the SEC. The agreements are filed to provide investors with information regarding their respective terms. The agreements are not intended to provide any other factual information about the Company, its business or operations. In particular, the assertions embodied in any representations, warranties and covenants contained in the agreements may be subject to qualifications with respect to knowledge and materiality different from those applicable to investors and may be qualified by information in confidential disclosure schedules not included with the exhibits. These disclosure schedules may contain information that modifies, qualifies and creates exceptions to the representations, warranties and covenants set forth in the agreements. Moreover, certain representations, warranties and covenants in the agreements may have been used for the purpose of allocating risk between the parties, rather than establishing matters as facts. In addition, information concerning the subject matter of the representations, warranties and covenants may have changed after the date of the respective agreement, which subsequent information may or may not be fully reflected in the Company's public disclosures. Accordingly, investors should not rely on the representations, warranties and covenants in the agreements as characterizations of the actual state of facts about the Company, its business or operations on the date hereof.

Item 16. *Form 10-K Summary*

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this Report to be signed on its behalf by the undersigned, thereunto duly authorized.

CVR Energy, Inc.

By: /s/ DAVID L. LAMP

David L. Lamp

President and Chief Executive Officer

Date: February 22, 2023

Pursuant to the requirements of the Securities Exchange Act of 1934, this Report had been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ DAVID L. LAMP</u> David L. Lamp	President, Chief Executive Officer, and Director (Principal Executive Officer)	February 22, 2023
<u>/s/ DANE J. NEUMANN</u> Dane J. Neumann	Executive Vice President, Chief Financial Officer, Treasurer and Assistant Secretary (Principal Financial Officer)	February 22, 2023
<u>/s/ JEFFREY D. CONAWAY</u> Jeffrey D. Conaway	Vice President, Chief Accounting Officer and Corporate Controller (Principal Accounting Officer)	February 22, 2023
<u>/s/ JAFFERY A. FIRESTONE</u> Jaffery A. Firestone	Director	February 22, 2023
<u>/s/ HUNTER C. GARY</u> Hunter C. Gary	Director	February 22, 2023
<u>/s/ STEPHEN MONGILLO</u> Stephen Mongillo	Director	February 22, 2023
<u>/s/ JAMES M. STROCK</u> James M. Strock	Director	February 22, 2023
<u>/s/ DAVID WILLETTS</u> David Willetts	Director	February 22, 2023

LIST OF SUBSIDIARIES OF
CVR ENERGY, INC*

The following is a list of all subsidiaries of CVR Energy, Inc and their jurisdiction of organization.

Entity	Jurisdiction
CVR Energy Holdings, Inc. (f/k/a Coffeyville Nitrogen Fertilizers, Inc.)	Delaware
Coffeyville Resources Crude Transportation, LLC	Delaware
Coffeyville Resources Nitrogen Fertilizers, LLC	Delaware
Coffeyville Resources Pipeline, LLC	Delaware
Coffeyville Resources Refining & Marketing, LLC	Delaware
CVR Services, LLC (f/k/a Coffeyville Resources, LLC)	Delaware
CVR Nitrogen, LP	Delaware
CVR Partners, LP	Delaware
CVR Refining, LLC	Delaware
CVR Refining, LP	Delaware
East Dubuque Nitrogen Fertilizers, LLC	Delaware
Wynnewood Energy Company, LLC	Delaware
Wynnewood Refining Company, LLC	Delaware
CVR Common Assets WYN, LLC	Delaware
CVR Common Assets CVL, LLC	Delaware

* Pursuant to Item 601(b)(21)(ii) of Regulation S-K, the names of other subsidiaries of CVR Energy, Inc. are omitted because, considered in the aggregate, they would not constitute a significant subsidiary as of the end of the year covered by this report.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We have issued our reports dated February 22, 2023, with respect to the consolidated financial statements and internal control over financial reporting included in the Annual Report of CVR Energy, Inc. on Form 10-K for the year ended December 31, 2022. We consent to the incorporation by reference of said reports in the Registration Statements of CVR Energy, Inc. on Form S-3 (File No. 333-266619) and on Forms S-8 (File No. 333-146907 and File No. 333-148783).

/s/ GRANT THORNTON LLP

Dallas, Texas

February 22, 2023

**Certification of President and Chief Executive Officer Pursuant to
Rule 13a-14(a) or 15d-14(a) under the Securities Exchange Act of 1934,
As Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002**

I, David L. Lamp, certify that:

1. I have reviewed this report on Form 10-K of CVR Energy, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 22, 2023

By: /s/ DAVID L. LAMP

David L. Lamp

*President and Chief Executive Officer
(Principal Executive Officer)*

**Certification of Executive Vice President and Chief Financial Officer Pursuant to
Rule 13a-14(a) or 15d-14(a) under the Securities Exchange Act of 1934,
As Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002**

I, Dane J. Neumann, certify that:

1. I have reviewed this report on Form 10-K of CVR Energy, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 22, 2023

By: /s/ DANE J. NEUMANN

Dane J. Neumann

*Executive Vice President and Chief Financial Officer
(Principal Financial Officer)*

**Certification of Vice President, Chief Accounting Officer and Corporate Controller Pursuant to
Rule 13a-14(a) or 15d-14(a) under the Securities Exchange Act of 1934,
As Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002**

I, Jeffrey D. Conaway, certify that:

1. I have reviewed this report on Form 10-K of CVR Energy, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 22, 2023

By: /s/ JEFFREY D. CONAWAY

Jeffrey D. Conaway

*Vice President, Chief Accounting Officer and Corporate
Controller*

(Principal Accounting Officer)

**Certification Pursuant to 18 U.S.C. Section 1350,
as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002**

In connection with the filing of the Annual Report on Form 10-K of CVR Energy, Inc., a Delaware corporation (the “Company”), for the fiscal year ended December 31, 2022, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), each of the undersigned officers of the Company certifies, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that, to the best of such officer’s knowledge and belief:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and,
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company as of the dates and for the periods expressed in the Report.

Date: February 22, 2023

By: /s/ DAVID L. LAMP

David L. Lamp
President and Chief Executive Officer

By: /s/ DANE J. NEUMANN

Dane J. Neumann
Executive Vice President, Chief Financial Officer

By: /s/ JEFFREY D. CONAWAY

Jeffrey D. Conaway
Vice President, Chief Accounting Officer and Corporate Controller

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